Accounting

ACCT 2010 - Financial Accounting Principles
3 credits
Survey of uses of accounting information by investors and creditors for decision making. Emphasis on basic accounting principles used to prepare, analyze, and interpret financial statements.
Prerequisite/Restriction: STAT 1040 or MATH 1030 or MATH 1050 (MATH 1050 or equivalent is required for Huntsman School of Business majors); and GPA of 2.5 or higher.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 2020 - Managerial Accounting Principles
3 credits
Survey of uses of accounting information by managers for decision making, including planning, budgeting, and controlling operations. Emphasizes accumulation, analysis, and control of product and service costs.
Prerequisite/Restriction: ACCT 2010
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 3110 - Intermediate Financial Accounting and Reporting I
3 credits
Study of accounting principles, theory, and practice relating to financial reporting of assets.
Prerequisite/Restriction: Cumulative GPA of 3.0 or higher; grade of B or better in ACCT 2010; ACCT 2020; successful completion of the accounting entrance exam (www.huntsman.usu.edu/acct/); admittance to a USU major; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 3120 - Intermediate Financial Accounting and Reporting II
3 credits
Study of accounting principles, theory, and practice relating to liabilities, equities, and other contemporary issues.
Prerequisite/Restriction: ACCT 3110; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 3310 - Strategic Cost Management
3 credits
Contemporary theory and applications in the accumulation, analysis, and interpretation of accounting information for internal decision-making and control.
Prerequisite/Restriction: Cumulative GPA of 3.0 or higher; grade of B or better in ACCT 2010; ACCT 2020; successful completion of the accounting entrance exam (www.huntsman.usu.edu/acct/); admittance to a USU major; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 3410 - Income Taxation I
3 credits
Emphasis on Federal income taxation of individuals. Introduction to tax research methods and taxation of corporations and partnerships.
Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4200 - Advanced Accounting
3 credits
Study of accounting principles and theory relating to business combinations, nonprofit organizations, and governmental accounting.
Prerequisite/Restriction: ACCT 3120; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4300 - Accounting Internship
3 credits
Provides accounting internship experience in a career-related position approved by the School of Accountancy
and the Cooperative Education Office.

Cross-listed as: ACCT 6300.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4410 - Income Taxation II
3 credits

Federal income taxation of partnerships, corporations, S-corporations, estates and trusts, and gifts.

Prerequisite/Restriction: ACCT 3410; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4400 - Income Taxation I
3 credits

Semester(s) Traditionally Offered: Spring

ACCT 4500 - Accounting Information Systems
3 credits

Theoretical concepts underlying the accounting system’s computerized support of business processes. Topics include accounting systems development, controls, security, and audit.

Prerequisite/Restriction: ACCT 3110; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

ACCT 4510 - Auditing Principles and Techniques
3 credits

Fundamental principles and techniques of auditing and reporting of audits presented in the context of the audit logic sequence. Integrative applications emphasizing audits of organizational resources, processes, and systems. Also addresses ethics, legal environment, auditing standards, and fraud.

Prerequisite/Restriction: ACCT 3110; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

ACCT 4510 - Auditing Principles and Techniques
3 credits

Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4700 - Seminar in Accounting
3 credits

Special topics in accounting, including workshops, readings, and pilot course offerings.

Cross-listed as: ACCT 6700.

Semester(s) Traditionally Offered: Summer

ACCT 4900 - Independent Research and Readings
1-3 credits

Selected reading and research individually assigned, handled, and directed. Problems of mutual interest to students and the instructor are investigated and reported.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 4950 - Senior Honors Thesis/Project
3 credits

Creative project that will then be written up, and presented, as a Senior Thesis as required for an Honors Plan.

Semester(s) Traditionally Offered: Spring

ACCT 5480 - Case Studies in Taxation
3 credits

Contemporary case studies in taxation researched, analyzed, documented, and communicated in a team setting.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: ACCT 6480.

Semester(s) Traditionally Offered: Fall

ACCT 6010 - Financial and Managerial Accounting
3 credits

Introduction to financial and managerial accounting at the graduate level.

Prerequisite/Restriction: Admission to a Huntsman School of Business graduate program.

Semester(s) Traditionally Offered: Summer
ACCT 6200 - Advanced Topics in Financial Reporting
3 credits

Study of accounting principles and theory related to advanced consolidations, multinational accounting, segment reporting, SEC reporting, partnerships, and financial distress.

Prerequisite/Restriction: ACCT 3120, ACCT 4200.

Semester(s) Traditionally Offered: Fall, Summer

ACCT 6250 - International Accounting and Financial Reporting
3 credits

Explores international accounting issues, including the standard-setting process, the conceptual framework, the regulatory interface, international auditing standards, and a comparison of U.S. and international accounting standards.

Prerequisite/Restriction: ACCT 4200.

Semester(s) Traditionally Offered: Spring

ACCT 6300 - Accounting Internship
3 credits

Provides accounting internship experience in a career-related position approved by the School of Accountancy and the Cooperative Education Office.

Cross-listed as: ACCT 4300.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ACCT 6310 - Cost Management Systems to Support World-Class Operations
3 credits

Examination of appropriate cost management systems and performance measures to support decision making in world-class business operations. Cases, projects, simulations, and field studies to reinforce concepts.

Prerequisite/Restriction: ACCT 3310.

Semester(s) Traditionally Offered: Spring

ACCT 6350 - Accounting Strategies for Achieving Profit Goals
3 credits

Action-oriented case studies to demonstrate management accounting techniques to achieve profit goals and business strategies in a variety of organizations. International accounting and ethical issues are addressed.

Prerequisite/Restriction: ACCT 2010 and ACCT 2020, or ACCT 6010.

Semester(s) Traditionally Offered: Fall

ACCT 6410 - Tax Research and Procedures
3 credits

Methods of researching tax problems, case studies in tax administration, civil procedures and penalties, professional responsibility, and tax ethics for the tax practitioner.

Prerequisite/Restriction: ACCT 3410 and ACCT 4410.

Semester(s) Traditionally Offered: Fall, Summer

ACCT 6420 - Taxation of Corporations and Shareholders
3 credits

Concepts and principles governing the taxation of corporations and shareholders. Effect of taxes on corporation formation, capital structure, distributions, liquidations, and reorganizations.

Prerequisite/Restriction: ACCT 3410 and ACCT 4410.

Semester(s) Traditionally Offered: Summer

ACCT 6440 - Taxation of Partnerships, Estates, and Trusts
3 credits

Concepts and principles governing the taxation of partnerships and partners and estates, trusts, and beneficiaries. Uses of partnerships and trusts in tax planning.

Prerequisite/Restriction: ACCT 3410 and ACCT 4410.

Semester(s) Traditionally Offered: Fall

ACCT 6460 - Tax Topics
3 credits
Topics of current interest to tax professionals.

Prerequisite/Restriction: ACCT 3410 and ACCT 4410.

Semester(s) Traditionally Offered: Summer

ACCT 6480 - Case Studies in Taxation
3 credits

Contemporary case studies in taxation researched, analyzed, documented, and communicated in a team setting.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: ACCT 5480.

Semester(s) Traditionally Offered: Fall

ACCT 6500 - Advanced Accounting Information Systems
3 credits

Study of contemporary issues in accounting information systems, including emerging information technologies for supporting enterprise decision making.

Prerequisite/Restriction: ACCT 4500.

Semester(s) Traditionally Offered: Spring

ACCT 6510 - Financial Auditing
3 credits

Application of generally accepted auditing standards to accounting systems. Some study of auditing theory and current issues, and an introduction to statistical auditing.

Prerequisite/Restriction: ACCT 4510.

Semester(s) Traditionally Offered: Fall, Spring

ACCT 6600 - Information Systems Auditing and Control
3 credits

Study of information systems auditing methodologies, including risk assessment, systems controls, and the use of computer-assisted audit techniques.

Semester(s) Traditionally Offered: Fall

ACCT 6610 - Accounting Theory and Research
3 credits

Analytical approach to understanding the financial reporting environment. Integration of accounting theory and practical research methodology in the resolution of financial reporting problems.

Prerequisite/Restriction: ACCT 3120 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring, Summer

ACCT 6620 - Financial Statement Analysis and Valuation
3 credits

Students analyze financial data, translate that information into forecasts of financial statements, and use valuation models to arrive at a fundamental value for a business. Includes discussions of trading strategies, market efficiency, and other issues in capital markets.

Semester(s) Traditionally Offered: Fall

ACCT 6700 - Seminar in Accounting
3 credits

Special topics in accounting, including workshops, readings, and pilot course offerings.

Cross-listed as: ACCT 4700.

Semester(s) Traditionally Offered: Summer

ACCT 6800 - Accounting Communications and Professional Conduct
3 credits

Study of written and oral communication skills appropriate for the accounting profession. Covers interpersonal skills and professional conduct, including ethical conduct, in various business settings.
Semester(s) Traditionally Offered: Spring
ACCT 6900 - Independent Reading and Research
1-3 credits
Independent work in accounting areas: theory, auditing, taxation, and other related areas.
Prerequisite/Restriction: Permission of department
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
ACCT 6960 - Professional Paper
1-3 credits
A paper of professional quality prepared by the student. Designed to demonstrate the ability to complete a major business-related project and to effectively present the results.
Prerequisite/Restriction: Permission of department

Semester(s) Traditionally Offered: Fall, Spring, Summer
ACCT 6990 - Continuing Graduate Advisement
1-3 credits
Continuing enrollment at the University required after completing coursework.
Prerequisite/Restriction: Permission of department
Repeatable for credit.
Pass/Fail only.

Accounting (USU Eastern)
ACTG 1111 - Survey of Accounting
3 credits
Designed for the business student who would like to develop a foundational understanding of accounting procedures in preparation for ACTG 2010 or for the individual who has bookkeeping or business ownership interests and would like a practical overview of basic accounting and bookkeeping procedures. It is also intended for the non-business student or the secretarial major who needs only one semester of basic accounting. Covers the accounting cycle for both service and merchandising businesses and an introduction to payroll accounting and financial statement preparation and analysis.
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
ACTG 2010 - Financial Accounting
4 credits
Designed for all students wanting to learn about accounting as the language of business. Course is required for business and accounting majors. Introduces students to basic accounting principles necessary to prepare, understand, and use financial statements and financial information for decision making. Designed to provide the student with useful and productive skills that will help in understanding more about the business world and the role accounting information plays in the U.S. economy.
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
ACTG 2020 - Managerial Accounting
4 credits
Designed for all students wanting to learn how accounting information is used in business decisions. Course is a required class for business and accounting majors. Focus is on providing relevant information that is necessary to assist managers in a modern, global environment. Topics will include product costing, activity based costing, cost behavior, budgeting for planning and control, and budgeting for capital expenditures.
Prerequisite/Restriction: ACTG 2010 and MATH 1030 recommended.
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
ACTG 2151 - Income Tax Preparation
2 credits
Income Tax Preparation gives students understanding and skill in preparation of the IRS 1040 form and supporting schedules. Students prepare and electronically file these documents as a service to low-income and senior citizen community members using the computer. Students will become aware of important individual decisions in reporting and financial tax
planning.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

ACTG 2800 - Computerized Accounting
2 credits

Enhances students’ understanding of fundamental accounting principles in General Ledger, Accounts Receivable, Accounts Payable, Inventory, and Payroll using Quickbooks software.

Prerequisite/Restriction: ACTG 1111 or ACTG 2010

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

Aerospace Studies

AS 1010 - Introduction to the Air Force Today
1 credit

Introduces the United States Air Force and Air Force Reserve Officer Training Corps. Air Force mission and organization, officer profession, and professionalism, military customs and courtesies, officer opportunities, group leadership problems, and communication skills. Leadership Laboratory is mandatory for cadets.

AS 1020 - Introduction to the Air Force Today
1 credit

Introduces the United States Air Force and Air Force Reserve Officer Training Corps. Air Force mission and organization, officer profession, and professionalism, military customs and courtesies, officer opportunities, group leadership problems, and communication skills. Leadership Laboratory is mandatory for cadets.

Semester(s) Traditionally Offered: Fall, Spring

AS 1110 - Leadership Laboratory I
1 credit

Air Force customs and courtesies, drill and ceremonies, military commands, environment of the Air Force officer, and officer opportunities.

Corequisite: AS 1020.

Pass/Fail only.

AS 1120 - Leadership Laboratory I
1 credit

Air Force customs and courtesies, drill and ceremonies, military commands, environment of the Air Force officer, and officer opportunities.

Corequisite: AS 1020.

AS 2010 - The Evolution of US Aerospace Power
1 credit

Examines general aspects of air and space power through a historical perspective. Illustrates Air Force Core Values with historical examples and continues development of communications skills. Leadership Laboratory is mandatory for cadets.

AS 2020 - The Evolution of US Aerospace Power
1 credit

Examines general aspects of air and space power through a historical perspective. Illustrates Air Force Core Values with historical examples and continues development of communications skills. Leadership Laboratory is mandatory for cadets.

Semester(s) Traditionally Offered: Fall, Spring

AS 2110 - Leadership Laboratory II
1 credit

Air Force customs and courtesies, drill and ceremonies, military commands, environment of the Air Force officer, and officer opportunities.


Pass/Fail only.

AS 2120 - Leadership Laboratory II
1 credit

Air Force customs and courtesies, drill and ceremonies, military commands, environment of the Air Force officer, and officer opportunities.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

AS 3010 - Air Force Leadership and Management
3 credits

Presents advanced leadership and management skills. Cadets given opportunity to practice these leadership skills and management techniques in a supervised environment. Leadership Laboratory is mandatory for cadets.

Corequisite: AS 3110.

AS 3020 - Air Force Leadership and Management
3 credits

Presents advanced leadership and management skills. Cadets given opportunity to practice these leadership skills and management techniques in a supervised environment. Leadership Laboratory is mandatory for cadets.

Corequisite: AS 3120.

AS 3060 - Physical Fitness Training
1-2 credits

Early morning workout to build stamina. Organized to keep cadets in shape to pass the Physical Fitness Test (PFT). Team instructed.

Repeatable for credit.

AS 3060 - Physical Fitness Training
1-2 credits

AS 3110 - Leadership Laboratory III
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 3010.

Pass/Fail only.

AS 3110 - Leadership Laboratory III
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 3020.

Pass/Fail only.

AS 3120 - Leadership Laboratory III
1 credit

AS 3010 - Air Force Leadership and Management
3 credits

Students in the four-year program participate in four weeks of Field Training. Major areas of study include junior officer training, career orientation, survival training, base functions, Air Force environment, and physical training.

Pass/Fail only.

AS 3060 - Physical Fitness Training
1-2 credits

AS 3110 - Leadership Laboratory III
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 3010.

Pass/Fail only.

AS 3120 - Leadership Laboratory III
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 3020.

Pass/Fail only.
for cadets.

Semester(s) Traditionally Offered: Fall, Spring

AS 4110 - Leadership Laboratory IV
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 4010.

Pass/Fail only.

AS 4120 - Leadership Laboratory IV
1 credit

Advanced leadership experiences to include the planning and controlling of cadet corps activities, and the preparation and presentation of briefings and other oral and written communications.

Corequisite: AS 4020.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

Agricultural Systems Technology and Education

ASTE 1010 - Introduction to Agricultural Systems Technology
3 credits

Introduction to problem solving related to the areas of agricultural power and machinery, soil and water conservation, structures and animal environments, electrical circuits, and emerging technologies.

Semester(s) Traditionally Offered: Fall

ASTE 1120 - Forage and Harvest Equipment
3 credits

Fundamentals and principles in operation, maintenance, and repair of planting and tillage equipment. Exploration of different systems and their applications.

Semester(s) Traditionally Offered: Spring

ASTE 1130 - Planting and Tillage Equipment
3 credits

Semester(s) Traditionally Offered: Spring

ASTE 1610 - Agricultural Machinery Engines
3 credits

Fundamental principles and components utilized in the power production for agricultural machinery. Diesel engines, as power plants, will be overhauled using a systems approach.

Semester(s) Traditionally Offered: Fall

ASTE 1615 - Agricultural Machinery Engine Laboratory
3 credits

Gives students practical hands-on experience in engine diagnostics and repairs.

Prerequisite/Restriction: ASTE 1610 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall

ASTE 1620 - Agricultural Machinery Power Trains
3 credits

Fundamental principles and components utilized in agricultural machinery transmittal of power through drive trains. A systems approach to overhauling these components will be developed.

Semester(s) Traditionally Offered: Spring

ASTE 1625 - Agricultural Machinery Power Trains Laboratory
3 credits

Gives students practical hands-on experience in power trains diagnostics and repairs.

Prerequisite/Restriction: ASTE 1620 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring

ASTE 1710 - Introduction to Agricultural Communication
3 credits
Overview of the history, importance to society, and role of mass communication in agriculture. Introduces students to the use of mass media in the agricultural industry.

Semester(s) Traditionally Offered: Fall

ASTE 2200 - Electricity in Agricultural Systems
3 credits

Fundamentals of electricity (AC) as used on farms and ranches. Residential and commercial agricultural applications of the National Electric code. Electrical supply and service, distribution, proper grounding, and installation of components.

Semester(s) Traditionally Offered: Spring

ASTE 2250 - Occupational Experience in Agriculture
1-6 credits

Supervised occupational experiences for technical vocational preparation.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ASTE 2710 - Orientation to Agriculture Education
2 credits

Students examine the framework of agricultural education, with a special emphasis on the nature of the programs, career opportunities, and the qualifications and preparation requirements of future agricultural educators.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ASTE 2830 - Agribusiness Sales and Marketing
3 credits

Basic principles of agribusiness sales and marketing. After completing a series of self-assessments relating to sales, learning, and personality preferences, students learn to complete each major step of the sales process.

Semester(s) Traditionally Offered: Fall

ASTE 2900 - Humanity in the Food Web (BSS)
BSS Breadth Social Sciences

Provides broad overview of food systems in conjunction with detailed analysis of particular issues, such as different theories and supporting data on the domestication of plants and animals, the use of human labor, the development and operation of complex technologies, and the analysis of socioeconomic data on human population growth and well-being.

Semester(s) Traditionally Offered: Fall, Spring

ASTE 2930 - Individualized Projects in Agriculture Mechanics
1-3 credits

Basic skill preparation for employment in agricultural industry.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ASTE 3030 - Metal Welding Processes and Technology in Agriculture
3 credits

Selection of ferrous and nonferrous welding techniques in agricultural applications. Welding, cold- and hot-working metal in agricultural construction and maintenance.

Semester(s) Traditionally Offered: Spring

ASTE 3040 - Fabrication Practices in Agricultural Buildings (QI)
QI Quantitative Intensive
2 credits

Selection and use of agricultural building materials, including concrete and masonry, lumber, plywood, finishes, and fasteners. Application of hand and power tools and procedures in agricultural construction.

Semester(s) Traditionally Offered: Spring

ASTE 3050 - Technical and Professional Communication Principles in Agriculture (CI)
CI Communications Intensive
3 credits

Technical communication principles and practices used in the agricultural industry. Emphasizes technical writing
of reports and correspondence using electronic information retrieval and presentation.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Fall, Spring

ASTE 3080 - Compact Power Units for Agricultural and Turfgrass Applications
3 credits

Operation and application of agricultural and turfgrass equipment powered by internal combustion engines having less than 40 horsepower.

Semester(s) Traditionally Offered: Spring

ASTE 3100 - Leadership Applications in Agricultural Science, Management and Development
2 credits

Study of leadership styles and their applications in development of agricultural programs for youth and adults. Emphasizes leadership and communication principles for effective community resource management in rural environments. Experiences provided in leadership styles, program planning, and meeting organization.

Semester(s) Traditionally Offered: Spring

ASTE 3240 - Teaching in Laboratory Settings (CI)
CI Communications Intensive
3 credits

Basic principles of teaching students in laboratory settings. Overview of major concepts, considerations, and practices used for developing and evaluating agriscience curricula.

Prerequisite/Restriction: ASTE 2710 Students should be admitted into the Secondary Teacher Education Program (STEP) prior to enrollment in this course.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ASTE 3300 - Clinical Experience I in Agricultural Education
1 credit

In-school clinical observation experience. Students involved in observing management and assisting in teaching. Designed to provide familiarity with agricultural education classroom.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

ASTE 3440 - Science, Technology, and Modern Society (DSC)
DSC Depth Life and Physical Sciences
3 credits

Designed to challenge students from all academic majors to develop an understanding of the dynamic interaction between science, technology, and society. Explores responsibility of humans for directing the utilization of technology as a creative enterprise.

Cross-listed as: ETE 3440.

Semester(s) Traditionally Offered: Fall, Spring

ASTE 3500 - Teaching Apprenticeship in Agricultural Education
2 credits

Each student serves as an apprentice to professional agricultural educator. Students complete competencies leading to early preparation for student teaching.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 3600 - Management of Agriculture Machinery Systems (QI)
QI Quantitative Intensive
3 credits

Management principles for evaluation and selection of agricultural implements for performance, optimization, economics, environmental impact, and long-term sustainable agricultural practices.

Prerequisite/Restriction: MATH 1050 or STAT 1040.

Semester(s) Traditionally Offered: Spring

ASTE 3620 - Managing the FFA and SAE Programs
2 credits

Introduction to basic concerns, understandings, and practices needed to effectively advise an FFA chapter.
Students learn appropriate philosophies and skills for operation of a comprehensive supervised agricultural experience program.

Prerequisite/Restriction: Admission to Secondary Teacher Education Program.

Semester(s) Traditionally Offered: Spring

ASTE 3670 - Agricultural Equipment Business Management, Marketing, and Communications
3 credits

Introduction to principles and operation of computer software systems related to marketing and management within the agricultural machinery business industry. Emphasis on business communication principles for effective transfer of information and problem resolution.

Prerequisite/Restriction: MATH 1050; fulfillment of Communications Literacy CL1 requirement or permission of instructor.

Semester(s) Traditionally Offered: Spring

ASTE 3710 - Agricultural Machinery Hydraulic Systems and Diagnosis
3 credits

Fundamental principles and components overhaul of hydraulic systems as applied in agricultural machinery. Exploration of techniques for diagnosing malfunctions and related failures with a systems approach.

Semester(s) Traditionally Offered: Fall

ASTE 3720 - Agricultural DC Electrical Systems and Diagnosis
3 credits

Fundamental principles and components overhaul of DC electrical systems as applied in agricultural machinery. Exploration of techniques for diagnosing malfunctions and related failures with a systems approach.

Prerequisite/Restriction: ASTE 1620 or permission of instructor.

Semester(s) Traditionally Offered: Fall

ASTE 3730 - Agricultural Machinery Auxiliary Systems and Diagnosis

3 credits

Application of theory, testing, diagnosis, and repairs of auxiliary systems, including air conditioning, fuel injection, analog, electronic monitoring, and GPS as utilized in agricultural equipment.

Prerequisite/Restriction: ASTE 3720 or permission of instructor.

ASTE 3900 - Special Problems in Agricultural Systems Technology and Education
1-6 credits

Students conduct short-term investigation and/or literature analysis with critical review of contemporary issues in Agricultural Systems Technology. Formal contract with approved faculty. Activities culminate with a written report.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 4100 - Agricultural Structures and Environment
3 credits

Overview of agricultural structures and environmental considerations related to livestock, livestock waste management, and commodity storage. Planning, layout, construction materials, concrete masonry, ventilation, insulation, and energy.

Semester(s) Traditionally Offered: Spring

ASTE 4150 - Methods of Teaching Agriculture (CI)
CI Communications Intensive
3 credits

Introduction to basic practices of classroom teaching and program planning. Through participation in discussions, activities, and assignments, students refine their abilities to develop programs, diagnose the learner, prepare the instruction, and guide student learning.

Prerequisite/Restriction: ASTE 2710, ASTE 3240.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

ASTE 4250 - Occupational Experiences in Agriculture
1-6 credits
Supervised occupational experience for technical and professional preparation in teacher education and/or agricultural business.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 4300 - Clinical Experience II in Agricultural Education
1 credit

Continued in-school observation of agricultural education teaching. Requires student participation in teaching, management, and program development in agricultural education.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall

ASTE 4400 - Advising Applied Technology Education Student Organizations
1 credit

Principles and practices for advising applied technology student organizations in secondary education.
Examination of leadership organizations supporting applied technology education. Emphasis on program planning, leadership development, and evaluation.

ASTE 4900 - Senior Project Research and Creative Opportunity
1-6 credits

Returning student teachers work to strengthen their weaknesses in areas such as scaled drawing, cost estimating, machine shop practices, construction, and small engines.

Semester(s) Traditionally Offered: Spring

ASTE 5100 - Electrical Controls and Motors for Agricultural and Industrial Applications
3 credits

Operation and application of electrical motors, electrical and electronic controls, and circuit and overload protection utilized in agricultural and industrial installations.

Semester(s) Traditionally Offered: Spring

ASTE 5200 - Assessment in Applied Technology Education
3 credits

Principles and practices in assessing performance and development of applied technology students. Emphasizes testing and evaluation techniques used in applied technology education.

Semester(s) Traditionally Offered: Spring, Summer

ASTE 5260 - Environmental Impacts of Agricultural Systems (CI)
CI Communications Intensive
3 credits

Investigation of relationship between agricultural practices and environmental quality, including control of agricultural nonpoint-source pollution.

Cross-listed as: ASTE 6260.

Semester(s) Traditionally Offered: Fall

ASTE 5400 - Food, Land, and People
1-3 credits

Designed for pre-service (undergraduate, elementary education) or practicing, in-service (graduate) teachers.
Offers development for infusing agriculture and the concepts of food, land, and people into existing curriculum standards and objectives. Presentation of agricultural-related instructional units, as well as research-based teaching strategies will be demonstrated.

Cross-listed as: ASTE 6400.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 5500 - Agricultural Education Secondary Curriculum Seminar
2 credits

Cooperative examination of considerations and processes for teaching secondary students. Reflection on
the practice of teaching. Preparation for entry into the teaching profession.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

ASTE 5550 - Continuing Education in Agricultural Education
0.5-3 credits

Concentrated offerings to increase knowledge and skills in current agricultural education topics or curriculum areas.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 5630 - Agricultural Education Student Teaching in Secondary Schools
10 credits

Students teach agriscience and technology courses in secondary and middle school settings under the guidance of clinical and Utah State University supervisors.

Pass/Fail only.
Semester(s) Traditionally Offered: Spring

ASTE 6100 - Research Methods in Agricultural Systems
3 credits

Introduces techniques used in applied agricultural research, as well as in career and technical education research. Includes research design, data gathering, and statistical analysis and interpretation.

Semester(s) Traditionally Offered: Spring

ASTE 6120 - Analysis of Social Research Data
3 credits

Explores the use of descriptive statistics, contingency tables, differential statistics, and correlational statistics. Discussion of syntax, procedure options, and interpretation of output.

Semester(s) Traditionally Offered: Fall

ASTE 6160 - Foundations of Adult Education and Program Evaluation
3 credits

Addresses the context and providers of adult education. In addition, adult learning theories and participation models are examined.

Semester(s) Traditionally Offered: Spring

ASTE 6200 - Principles and Practices of Extension Education
3 credits

History, philosophy, and organizational structure of U.S. and international extension organizations, including programming models, teaching strategies, and accountability.

Semester(s) Traditionally Offered: Spring

ASTE 6260 - Environmental Impacts of Agricultural Systems
3 credits

Investigation of relationship between agricultural practices and environmental quality, including control of agricultural nonpoint-source pollution.

Cross-listed as: ASTE 5260.

Semester(s) Traditionally Offered: Fall

ASTE 6360 - History, Philosophy and Policy Development in Career and Technical Education
3 credits

Explores the historical and philosophical foundations of extension and career and technical education required to understand current policy development.

Semester(s) Traditionally Offered: Summer

ASTE 6400 - Food, Land, and People
1-3 credits

Designed for pre-service (undergraduate, elementary education) or practicing, in-service (graduate) teachers. Offers development for infusing agriculture and the concepts of food, land, and people into existing curriculum standards and objectives. Presentation of agricultural-related instructional units, as well as research-based teaching strategies will be demonstrated.

Cross-listed as: ASTE 5400.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 6450 - Graduate Topics in Agricultural Education
3 credits

Program planning for locally applied curriculum design to meet student interests and community needs for career and technical educators.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

ASTE 6960 - Graduate Seminar
1 credit

Identification of research problems and critical issues, consideration of critical issues and research methods, and application of data analysis procedures under faculty direction.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

ASTE 6970 - Research and Thesis
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ASTE 7000 - Principles and Practices of Community College Education
3 credits

Examines the American two-year college, including historical and philosophical development, curricula, students and the learning process, faculty and instruction, administration and governance, support, and control. Focuses upon principles, practices, and problems of community colleges in America.

Semester(s) Traditionally Offered: Summer

ASTE 7400 - Community and Interagency Partnerships
3 credits

Explores relationship between education and the community, with special emphasis on community needs and interagency relationships needed for the development of a total community education program. Furthers understanding of leadership and agency, through exploring and examining contemporary and perennial issues from multiple perspectives in a diverse higher-educational context.

Semester(s) Traditionally Offered: Summer

ASTE 7500 - Diffusion of Innovations
3 credits

Explores processes by which professional change agents influence the introduction, adoption, and diffusion of technological change. Course content is applicable to persons who work closely with people in formal and informal educational settings.

Semester(s) Traditionally Offered: Summer

Agriculture

AG 4250 - Advanced Internship and Cooperative Experience
1-6 credits

Advanced or middle-level internship or cooperative experience to be approved by the Dean’s Office. Intended for nonformal students interested in a broad agricultural experience.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Animal, Dairy and Veterinary Sciences

ADVS 1010 - Artificial Insemination and Reproduction
2 credits

Principles of reproduction, artificial insemination, and handling of semen. Anatomy and physiology of the bovine reproductive tract and reproductive management of the dairy farm.

Semester(s) Traditionally Offered: Fall

ADVS 1100 - Small Scale Animal Production
3 credits
Fundamentals of raising domestic farm animals in a semi-rural, noncommercial setting. Considerations of feeding, breeding, housing, marketing, sanitation, general health care, and community zoning factors.

Prerequisite/Restriction: For nonmajors.

Semester(s) Traditionally Offered: Spring

ADVS 1110 - Introduction to Animal Science
4 credits

Influence and contributions of animal production and its commodities to society. Introductory scientific principles of animal science, livestock production systems, and contemporary issues. Introduction to professions and careers in animal agriculture and veterinary sciences.

Semester(s) Traditionally Offered: Fall, Spring

ADVS 1500 - Fundamentals of Equine Science and Management
2 credits

Application of basic horse terminology, including parts of the horse, hoof, tack, and gaits. Examines evolution and history of the equine species, including explanation of breed types, colors, markings, and health issues.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 1600 - Riding Fundamentals I
2 credits

Lectures explore the theory necessary to be a successful rider. Includes information on use of natural and artificial aids with hunt seat and western-style riding. In riding labs, students develop their riding skills and understanding of riding theory.

Prerequisite/Restriction: Enrollment limited to students in Equine Science and Management emphasis of Animal, Dairy and Veterinary Sciences major or by permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

ADVS 1720 - Dairy Cattle Evaluation and Judging
1 credit

Evaluation of cattle based on exterior anatomical traits functional for improving longevity and milk production.

Explanation of classification systems used by breed associations and the artificial insemination industry. Development of basic skills for preparing dairy cattle for show.

Semester(s) Traditionally Offered: Spring

ADVS 1920 - New Student Orientation
1 credit

Helps students to become familiar with the four programs of study (emphasis areas) offered in the Animal, Dairy and Veterinary Sciences major, along with their associated career opportunities, University Studies requirements, University policies and procedures, internships, scholarships, and requirements for graduate school.

Semester(s) Traditionally Offered: Fall

ADVS 2080 - Beef and Dairy Herd Health and Production Practices
3 credits

Explores progressive concepts of disease prevention and health management for beef and dairy cattle. Explains how these concepts lead to optimum herd health, cow comfort, and productivity. Helps students gain advanced critical thinking and problem-solving skills relating to beef and dairy herd health and production management.

Prerequisite/Restriction: ADVS 1110 (may be taken concurrently) or permission of instructor

Semester(s) Traditionally Offered: Spring

ADVS 2090 - Sheep Production Practices
2 credits

Production practices in the handling, selection, and care of sheep. Demonstrations of equipment, facilities, and skills relevant to sheep and wool production.

Prerequisite/Restriction: ADVS 1110 (may be taken concurrently) or permission of instructor.

Semester(s) Traditionally Offered: Spring

ADVS 2120 - Swine Production Practices
2 credits

Production practices in the selection, handling, and care of swine.
of swine. Demonstrations of equipment, facilities, and skills relevant to swine industry.

Prerequisite/Restriction: ADVS 1110 (may be taken concurrently) or permission of instructor.

Semester(s) Traditionally Offered: Fall

ADVS 2190 - Horse Production Practices
2 credits

Covers basic management practices including: behavior and safety, vital signs, restraint methods, body condition scoring, and the skeletal system. Introduces nutrition, reproduction, hoof care, anatomy, and physiology.

Prerequisite/Restriction: Enrollment limited to students in the Equine Science and Management emphasis of the Animal, Dairy and Veterinary Sciences major or by permission of instructor.

Semester(s) Traditionally Offered: Fall

ADVS 2200 - Anatomy and Physiology of Animals
4 credits

Normal structure and function studied systematically. Comparative livestock, poultry, pleasure and companion animals, laboratory animals, and humans.

Semester(s) Traditionally Offered: Spring

ADVS 2250 - Cooperative Work Experience
1-12 credits

For students who require animal industry experience to prepare them for advanced curriculum in Animal, Dairy, or Bioveterinary Science.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 2300 - Horse Health Care
2 credits

Covers fundamental principles of stable management and horse health care, including facility upkeep, ground manners, detecting and treating injuries and illness, management practices specific for individual facilities, horse herd health and upkeep, daily maintenance and duties required of a safe and healthy equine facility, show preparation, use of farm equipment and client relationships. Students are expected to be out at the Equine Education Center 6 hours per week.

Prerequisite/Restriction: ADVS 2190 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 2600 - Riding Fundamentals II – Western
2 credits

Lecture includes detailed discussion of upper-level riding skills necessary for western-style riding. Riding labs provide students with opportunity to develop more advanced riding skills.

Prerequisite/Restriction: Grade of C- or better in ADVS 1600, or permission of instructor.

Semester(s) Traditionally Offered: Spring

ADVS 2650 - Riding Fundamentals II – Hunter
2 credits

Lecture includes detailed discussion of upper-level riding skills necessary for hunter-style riding. Riding labs provide students with opportunity to develop more advanced riding skills.

Prerequisite/Restriction: Grade of C- or better in ADVS 1600, or permission of instructor.

Semester(s) Traditionally Offered: Fall

ADVS 3000 - Animal Health and Hygiene
3 credits

Introduction to basic principles of disease. Agents, mechanisms, and preventive measures for common diseases of farm animals will be emphasized.

Prerequisite/Restriction: ADVS 2200.

Semester(s) Traditionally Offered: Spring

ADVS 3100 - Equine Evaluation I
2 credits

Study of equine conformation, using multiple breeds. Development of skills in evaluating balance, leg structure, and muscling. Students organize and present oral reasons.
Semester(s) Traditionally Offered: Fall
ADVS 3150 - Equine Evaluation II
2 credits
Study of equine performance horses, including western pleasure, hunter under saddle, reining, western riding, and jumping. Discussion of multiple breeds. Presentation of oral reasons.
Prerequisite/Restriction: ADVS 3100.

Semester(s) Traditionally Offered: Spring
ADVS 3200 - Ethical Issues in Genetic Engineering and Biotechnology (DSC)
DSC Depth Life and Physical Sciences
3 credits
Critical evaluation of ethical issues of genetic engineering in biotechnology, including biological engineering and cloning of plants, animals, and humans. Presents basic science of genetic engineering and biotechnology.

Semester(s) Traditionally Offered: Spring
ADVS 3300 - Farrier Science, Basic Hoof Trimming and Shoeing
3 credits
Provides students with in-depth understanding of lower leg and hoof anatomy, as well as hands-on experience in both proper hoof trimming and shoeing.
Prerequisite/Restriction: ADVS 1600 and ADVS 2190 and ADVS 2200 and ADVS 3100

Semester(s) Traditionally Offered: Spring
ADVS 3500 - Animal Nutrition
4 credits
Introduces principles of nutrition and applied feeding of domestic animals, including beef, dairy, horses, poultry, sheep, and swine. Covers nutrition and metabolism of carbohydrates, proteins, lipids, minerals, and vitamins; diet formulation; and nutritional maladies.
Prerequisite/Restriction: ADVS 2200; CHEM 1120 or CHEM 1220.

Semester(s) Traditionally Offered: Fall
ADVS 3520 - Equine Nutrition
2 credit
Covers digestive tract, design, function, and associated problems, as well as nutrient requirements.
Prerequisite/Restriction: ADVS 3500.

Semester(s) Traditionally Offered: Spring
ADVS 3600 - Equine Behavior and Training
2 credits
Focuses on developing the trust and confidence of both horse and handler when introducing and progressing through ground and under-saddle work.
Prerequisite/Restriction: ADVS 2600 or ADVS 2650, or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring
ADVS 3650 - Live Animal and Carcass Evaluation
3 credits
Judging, grading, and pricing of market animals and carcasses, with emphasis on comparative evaluation of live animals and carcasses.

Semester(s) Traditionally Offered: Spring
ADVS 3690 - Advanced Equine Handling and Training Techniques
2 credits
Focuses on: (1) working with the young, green broke horse using more advanced techniques in preparation for specialized events, or (2) working with older horses to retrain or redirect their ground or under-saddle manners.
Prerequisite/Restriction: ADVS 3600 or permission of instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Spring, Summer
ADVS 3710 - Advanced Livestock Judging
2 credits

Prerequisite/Restriction: ADVS 3650 or permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ADVS 3900 - Special Problems and Readings
1-3 credits

Students conduct short-term studies and/or literature review with critical analysis of individualized subject matter. Formal written reports required.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 3910 - Special Topics
1-5 credits

Topics of special interest to those who have needs not satisfied by courses currently offered.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 3920 - Internship in Veterinary Medicine
1-3 credits

A directed and evaluated work experience with a veterinarian. For each credit, student must document at least 54 hours of work time.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4200 - Physiology of Reproduction and Lactation (CI)
CI Communications Intensive
4 credits

Introduction to principles of physiology as they relate to the reproductive and lactation processes in domestic mammals. Factors affecting reproductive and lactation performance and their applications in animal management.

Prerequisite/Restriction: ADVS 2200; CHEM 1120, CHEM 1220, or CHEM 2310.

Semester(s) Traditionally Offered: Spring

ADVS 4250 - Internship in Animal Industry
1-12 credits

Directed and evaluated educational work experience with an animal production unit, related business, or government facility in cooperation with the Livestock Education Foundation.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4260 - Internship in Animal Biotechnology Industry
2-12 credits

Directed and evaluated educational work experience with an animal biotechnology unit, or with a related business or government facility.

Prerequisite/Restriction: ADVS 5160 or ADVS 5260 and permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4270 - Internship in Equine Industry
1-12 credits

Directed and evaluated work experience with an equine facility. Prerequisite: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4300 - Teaching and Leadership Skills
2 credits

Students enrolled in this course develop leadership and teaching skills while mentoring and overseeing students taking ADVS 2300. Students assist with teaching labs and with extension programs. Students will be expected to be at the Equine Education Center 6 hours per week on a set
Prerequisite/Restriction: Grade of C or better in ADVS 2300

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4560 - Principles of Animal Genetics and Breeding (QI)
QI Quantitative Intensive
3 credits

Genetic influences affecting animal performance and the application of selection principles, breeding systems, and methods of improvement to farm animals, including beef and dairy cattle, sheep, swine, and horses.

Prerequisite/Restriction: BIOL 1010 or BIOL 1620.

Semester(s) Traditionally Offered: Fall

ADVS 4800 - Undergraduate Research of Creative Opportunity
1-6 credits

Research or creative activity pertaining to animals. May include management, production, medical, or basic science, with consideration of biological, chemical, or physical aspects, or instrument design.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4810 - Thesis/Project Seminar
1 credit

Oral presentation and discussion of Honors senior thesis/projects. Guest presentations focus on essential contrasts and similarities in “ways of knowing” among various academic specialties.

Semester(s) Traditionally Offered: Fall, Spring

ADVS 4900 - Senior Thesis/Project
1-3 credits

All Honors students are required to submit a senior thesis/project for graduation with an Honors degree. Thesis/project may be in any area of student’s choice, prepared in cooperation with an advisor drawn from the faculty at large.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 4920 - Undergraduate Seminar (CI)
CI Communications Intensive
2 credits

Current developments in agricultural field selected by student. Each student is responsible for the research and oral presentation of a topic in the animal industries. Group investigations, preparations, and deliberations on issues in animal agriculture.

Prerequisite/Restriction: Senior standing.

Semester(s) Traditionally Offered: Fall

ADVS 5030 - Sustainable Agricultural Production Systems with Animals
3 credits

Study of various domestic animal production systems in relation to sustainable agriculture and integrated ranch and farm management strategies. Consideration of environmental factors and overall profitability.

Prerequisite/Restriction: ADVS 1110.

Semester(s) Traditionally Offered: Fall

ADVS 5080 - Beef Cattle Management
3 credits

Managing the beef enterprise to yield optimum returns through integrating resource use and applying breeding, nutrition, reproduction, and animal health practices.

Prerequisite/Restriction: ADVS 2080; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 6080.

Semester(s) Traditionally Offered: Spring

ADVS 5090 - Sheep Management and Wool Technology
4 credits

Detailed study of the managerial considerations for range and farm flock operations. Examinations of wool, and review of wool clip handling and merchandising.
ADVS 5120 - Swine Management
3 credits

Management decisions based on nutrition, breeding programs, herd health practices, herd records, and marketing opportunities.

Prerequisite/Restriction: ADVS 2090; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 6090.

Semester(s) Traditionally Offered: Spring

ADVS 5130 - Dairy Cattle Management
3 credits

Capstone course drawing together concepts and applying them to a total dairy farm management program.

Prerequisite/Restriction: ADVS 2120; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 6130.

Semester(s) Traditionally Offered: Fall

ADVS 5160 - Methods in Biotechnology: Cell Culture
3 credits

Techniques and fundamental knowledge for culturing mammalian and insect cells. Students will learn maintenance, growing, genetic engineering of cells, cytotoxicity, hybridoma creation, cloning, etc. Extensive laboratory experience is provided.

Cross-listed as: BIOL 5160 and NDFS 5160 and PSC 5160.

Semester(s) Traditionally Offered: Spring

ADVS 5190 - Horse Management
3 credits

Management decisions in horse enterprises emphasizing business procedures, including merchandising, records, selection, uses, housing, facilities, nutrition, feeding, health care, and breeding. Emphasizes total management of horse enterprise, rather than husbandry.

Prerequisite/Restriction: ADVS 2190; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 6190.

Semester(s) Traditionally Offered: Spring

ADVS 5220 - Endocrine Aspects of Nutrition
2 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: CHEM 3700 or permission of instructor.

Cross-listed as: ADVS 6220 and BIOL 5220/BIOL 6220 and NDFS 5220/NDFS 6220.

Semester(s) Traditionally Offered: Spring

ADVS 5260 - Methods in Biotechnology: Molecular Cloning
3 credits

Laboratory-oriented course designed to teach molecular biology techniques such as DNA cloning, genetic probes, polymerase chain reaction, and DNA sequencing.

Prerequisite/Restriction: CHEM 3700 or CHEM 5710; or BIOL 3060; or permission of instructor.

Cross-listed as: BIOL 5260 and NDFS 5260, and PSC 5260.

Semester(s) Traditionally Offered: Fall

ADVS 5280 - Animal Molecular Biology
3 credits

Laboratory-based course designed to present the theory and provide an in-depth laboratory experience in RNA detection, differential gene expression analysis, real-time RT-PCR, protein detection and purification, 2-D gel...
electrophoresis, and microarrays.

Prerequisite/Restriction: ADVS 5260 or permission of instructor.

Cross-listed as: ADVS 6280 and BIOL 5280/BIOL 6280 - Animal Molecular Biology.

Semester(s) Traditionally Offered: Spring

ADVS 5350 - Introductory Pharmacology and Pharmacokinetics
3 credits

Basic principles of pharmacology and pharmacokinetics providing basis for extrapolation of biological kinetics of foreign compounds to a wide variety of xenobiotics encountered in toxicology, biology, and research.

Prerequisite/Restriction: BIOL 5600, CHEM 3700.

Cross-listed as: ADVS 6350.

Semester(s) Traditionally Offered: Spring, taught odd years

ADVS 5400 - Environmental Toxicology
3 credits

Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.

Cross-listed as: ADVS 6400 and BIOL 5400/BIOL 6400 and PUBH 5400/PUBH 6400.

Semester(s) Traditionally Offered: Spring

ADVS 5520 - Grazing Livestock Nutrition and Management
2 credits

Principles of livestock nutrition and production applied to the grazing environment and the relationships of livestock and range management for optimizing values from both.

Prerequisite/Restriction: WILD 4000 (Recommended).

Cross-listed as: ADVS 6520.

ADVS 5530 - Nutritional Management of Farm Animals
3 credits

Nutritional management, problem solving, and feeding strategies as they influence performance of farm animals. Optimization of nutrition for various species and classes of domestic livestock.

Cross-listed as: ADVS 6530

Semester(s) Traditionally Offered: Spring

ADVS 5630 - Endocrinology
3 credits

Molecular, cellular and physiological aspects of the endocrine system in vertebrates, presented with a species comparative approach. Clinical aspects and diseases associated with dysfunction of the endocrine system.

Prerequisite/Restriction: BIOL 1620

Cross-listed as: ADVS 6630, BIOL 5630, BIOL 6630

Semester(s) Traditionally Offered: Spring, Odd Years

ADVS 5650 - Science Communication
3 credits

Principles of effective science communication intended for scientific peers and general lay audiences. Instruction will center on effective written and/or oral communication for journal articles, proposals, conference presentation, public lectures and new media. This course is not discipline-specific.

Cross-listed as: ADVS 6650

Semester(s) Traditionally Offered: Fall

ADVS 5690 - Medical Histology
3 credits

Microscopic anatomy and physiology of normal domestic animal’s cells, tissues, organs, and system.

Prerequisite/Restriction: ADVS 2200 or BIOL 1620; or permission of instructor.
Cross-listed as: ADVS 6690 and BIOL 5690/BIOL 6690.

Semester(s) Traditionally Offered: Fall

ADVS 5700 - General Pathology (CI)
CI Communications Intensive
3 credits

Introduction to the principles of gross, microscopic, and physiological changes associated with diseases of domestic animals.

Prerequisite/Restriction: ADVS 5690/ADVS 6690/BIOL 5690/BIOL 6690.

Cross-listed as: ADVS 6700 and BIOL 5700/BIOL 6700.

ADVS 6090 - Sheep Management and Wool Technology
4 credits

Detailed study of the managerial considerations for range and farm flock operations. Examinations of wool, and review of wool clip handling and merchandising.

Prerequisite/Restriction: ADVS 2090; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 5090.

ADVS 6120 - Swine Management
3 credits

Prerequisite/Restriction: ADVS 2120; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 5120.

ADVS 6130 - Dairy Cattle Management
3 credits

Capstone course drawing together concepts and applying them to a total dairy farm management program.

Prerequisite/Restriction: ADVS 4200 or ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 5130.

ADVS 6190 - Horse Management
3 credits

Managing the beef enterprise to yield optimum returns through integrating resource use and applying breeding, nutrition, reproduction, and animal health practices.
Management decisions in horse enterprises emphasizing business procedures, including merchandising, records, selection, uses, housing, facilities, nutrition, feeding, health care, and breeding. Emphasizes total management of horse enterprise, rather than husbandry.

Prerequisite/Restriction: ADVS 2190; ADVS 4200, ADVS 4560 (may be taken concurrently).

Cross-listed as: ADVS 5190.

Semester(s) Traditionally Offered: Spring

ADVS 6200 - Physiology of Reproduction
3 credits

Study of processes of reproduction in mammals, including fertilization, embryonic development, reproductive endocrinology, and mechanisms of control.

Prerequisite/Restriction: ADVS 4200, CHEM 3700.

Semester(s) Traditionally Offered: Spring

ADVS 6210 - Molecular Reproduction and Development
3 credits

Lecture-based course focusing on current knowledge of genes associated with gametogenesis, fertilization, nuclear reprogramming, and embryonic and fetal development.

Prerequisite/Restriction: ADVS 6200 or permission of instructor.

Cross-listed as: ADVS 7210.

Semester(s) Traditionally Offered: Spring

ADVS 6220 - Endocrine Aspects of Nutrition
2 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: CHEM 3700 or permission of instructor.

Cross-listed as: ADVS 5220 and BIOL 6220/BIOL 5220 and NDFS 6220/NDFS 5220.

Semester(s) Traditionally Offered: Spring

ADVS 6280 - Animal Molecular Biology
3 credits

Laboratory-based course designed to present the theory and provide an in-depth laboratory experience in RNA detection, differential gene expression analysis, real-time RT-PCR, protein detection and purification, 2-D gel electrophoresis, and microarrays.

Prerequisite/Restriction: ADVS 5260 or permission of instructor.

Cross-listed as: ADVS 5280 and BIOL 6280/BIOL 5280.

Semester(s) Traditionally Offered: Spring

ADVS 6350 - Introductory Pharmacology and Pharmacokinetics
3 credits

Basic principles of pharmacology and pharmacokinetics providing basis for extrapolation of biological kinetics of foreign compounds to a wide variety of xenobiotics encountered in toxicology, biology, and research.

Prerequisite/Restriction: BIOL 5600, CHEM 3700.

Cross-listed as: ADVS 5350

Semester(s) Traditionally Offered: Spring, taught odd years

ADVS 6400 - Environmental Toxicology
3 credits

Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.

Cross-listed as: ADVS 5400 and BIOL 6400/BIOL 5400 and PUBH 6400/PUBH 5400.

Semester(s) Traditionally Offered: Spring
ADVS 6510 - Digestion and Metabolism in Ruminants
3 credits

Explores key aspects of physiology and metabolism of the ruminant digestive tract, with emphasis on the rumen. Topics include: anatomy and function; motility; metabolism of protein, carbohydrates, and lipids; rumen microbiology; fermentation biochemistry; digestive disorders; and postruminal physiology.

Prerequisite/Restriction: ADVS 3500.

Cross-listed as: ADVS 7510.

Semester(s) Traditionally Offered: Spring

ADVS 6520 - Grazing Livestock Nutrition and Management
2 credits

Principles of livestock nutrition and production applied to the grazing environment and the relationships of livestock and range management for optimizing values from both.

Prerequisite/Restriction: WILD 4000 (recommended).

Cross-listed as: ADVS 5520.

Semester(s) Traditionally Offered: Spring

ADVS 6530 - Nutritional Management of Farm Animals
3 credits

Nutritional management, problem solving, and feeding strategies as they influence performance of farm animals. Optimization of nutrition for various species and classes of domestic livestock.

Cross-listed as: ADVS 5530.

Semester(s) Traditionally Offered: Spring

ADVS 6540 - Energy and Protein Metabolism
3 credits

Examines principles of energetics; flow of energy; carbohydrate and lipid metabolism; efficiency of energy utilization in metabolism; energetic costs of nutrient inter-conversion and turnover; metabolism and utilization of protein; and relationship between energy and protein metabolism.

Prerequisite/Restriction: ADVS 3500, CHEM 5700.

Cross-listed as: ADVS 7540.

Semester(s) Traditionally Offered: Spring

ADVS 6600 - Principles of Toxicology
3 credits

Mechanisms of action and effects of toxicants on living organisms.

Prerequisite/Restriction: ADVS 5350/ADVS 6350.

Cross-listed as: ADVS 7600.

Semester(s) Traditionally Offered: Fall

ADVS 6630 - Endocrinology
3 credits

Molecular, cellular and physiological aspects of the endocrine system in vertebrates, presented with a species comparative approach. Clinical aspects and diseases associated with dysfunction of the endocrine system.

Prerequisite/Restriction: BIOL 1620

Cross-listed as: ADVS 5630, BIOL 5630, BIOL 6630

Semester(s) Traditionally Offered: Spring, Odd Years

ADVS 6650 - Science Communication
3 credits

Principles of effective science communication intended for scientific peers and general lay audiences. Instruction will center on effective written and/or oral communication for journal articles, proposals, conference presentation, public lectures and new media. This course is not discipline-specific.

Cross-listed as: ADVS 5650

Semester(s) Traditionally Offered: Fall

ADVS 6690 - Medical Histology
3 credits

Microscopic anatomy and physiology of normal domestic
animal's cells, tissues, organs, and system.

Prerequisite/Restriction: ADVS 2200 or BIOL 1620; or permission of instructor.

Cross-listed as: ADVS 5690 and BIOL 6690/Biol 5690.

Semester(s) Traditionally Offered: Fall

ADVS 6700 - General Pathology
3 credits

Introduction to the principles of gross, microscopic, and physiological changes associated with diseases of domestic animals.

Prerequisite/Restriction: ADVS 6690/ADVS 5690/BIOL 6690/BIOL 5690.

Cross-listed as: ADVS 5700 and BIOL 6700/BIOL 5700.

Semester(s) Traditionally Offered: Spring

ADVS 6800 - Graduate Student Seminar
1 credit

Seminars on topics of interest in Animal, Dairy and Veterinary Sciences.

Semester(s) Traditionally Offered: Fall, Spring

Page: 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 ... Forward 10 -> 55

Animal, Dairy and Veterinary Sciences

ADVS 6810 - Seminar in Toxicology
1 credit

Graduate seminar in toxicology and related topics.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ADVS 6820 - Animal Cytogenetics and Gene Mapping
3 credits

Structure and properties of chromosomes, chromosome behavior during cell division, chromosomal influence on phenotype, and factors causing changes in chromosome structure and number. Gene markers and gene mapping, with emphasis on applications for livestock.

Prerequisite/Restriction: ADVS 4560 or BIOL 3060.

Cross-listed as: ADVS 5820.

Semester(s) Traditionally Offered: Fall

ADVS 6900 - Special Problems
1-3 credits

Readings, discussions, lectures, literature reviews, and research problems in animal, dairy, and bioveterinary sciences. Prerequisite: Consent of instructor and department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 6910 - Readings and Conference in Pharmacology and Toxicology
1-3 credits

Independent readings and conferences in the area of pharmacology and toxicology with particular emphasis on current literature.

Prerequisite/Restriction: ADVS 6350/ADVS 5350.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

ADVS 6970 - Research and Thesis
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ADVS 7210 - Molecular Reproduction and Development
3 credits

Lecture-based course focusing on current knowledge of genes associated with gametogenesis, fertilization, nuclear reprogramming, and embryonic and fetal
development.

Prerequisite/Restriction: ADVS 6200 or permission of instructor.

Cross-listed as: ADVS 6210.

Semester(s) Traditionally Offered: Spring

ADVS 7510 - Digestion and Metabolism in Ruminants
3 credits

Explores key aspects of physiology and metabolism of the ruminant digestive tract, with emphasis on the rumen. Topics include: anatomy and function; motility; metabolism of protein, carbohydrates, and lipids; rumen microbiology; fermentation biochemistry; digestive disorders; and postruminal physiology.

Prerequisite/Restriction: ADVS 3500.

Cross-listed as: ADVS 6510.

Semester(s) Traditionally Offered: Spring

ADVS 7540 - Energy and Protein Metabolism
3 credits

Examines principles of energetics; flow of energy; carbohydrate and lipid metabolism; efficiency of energy utilization in metabolism; energetic costs of nutrient inter-conversion and turnover; metabolism and utilization of protein; and relationship between energy and protein metabolism.

Prerequisite/Restriction: ADVS 3500, CHEM 5700.

Cross-listed as: ADVS 6540.

Semester(s) Traditionally Offered: Spring

ADVS 7600 - Principles of Toxicology
3 credits

Mechanisms of action and effects of toxicants on living organisms.

Prerequisite/Restriction: ADVS 5350/ADVS 6350.

Cross-listed as: ADVS 6600.

Semester(s) Traditionally Offered: Fall
ANTH 1099 - Resources in Anthropology at USU
1 credit
Familiarizes incoming freshmen, new majors, and transfer students with the academic resources available to Anthropology students at USU. Covers program, department, library, college, campus, intercampus, and internet resources.

ANTH 2010 - Peoples of the Contemporary World (BSS)
BSS Breadth Social Sciences
3 credits
Introduces different ways of life, rural and urban, from the world's major culture areas. Focuses on how contemporary societies have evolved in ecological, historical, and political context. Introduces problems arising from third world social change.

ANTH 2011 - Introduction to Peoples of the Southwest (BHU)
BHU Breadth Humanities
3 credits
Course will appeal to those interested in the prehistoric and living peoples of the American Southwest. A variety of classroom and field trip experiences will be used to apply the principles of archaeology and anthropology to the native peoples of the region.

ANTH 2018 - Introduction to Native American History and Culture (BSS)
BSS Breadth Social Sciences
3 credits
Course surveys Native North America from the earliest societies to the present examining all aspects of Native North American culture including food production, economics, political systems, kinship, religion, art, and other aspects of culture. Class presentations will include lecture, discussion groups, guest lectures, analytical writing projects, film discussions, field trips, and opportunities for individual exploration of specific areas of interests.

Prerequisite/Restriction: Previous anthropology experience or coursework suggested.

Cross-listed as: HIST 2018
Campus: USU Eastern only

ANTH 2210 - Introduction to Folklore (BHU)
BHU Breadth Humanities
3 credits
Introduction to major genres of folklore (folk narrative, custom, folk music and song, vernacular architecture and arts), folk groups (regional, ethnic, occupational, familial), and basic folklore research method (collecting and archiving).

Cross-listed as: ENGL 2210 and HIST 2210.

ANTH 2330 - Principles of Archaeology (BSS)
BSS Breadth Social Sciences
3 credits
Addresses different ways of interpreting the past by exploring archaeology’s historical, theoretical, and methodological development. Provides students with the basic tools for conducting archaeological research and with an understanding of the background of the discipline.

ANTH 2520 - Introductory Archaeology Field School
3-5 credits
Internship on archaeological field project, including survey, excavation, recording, mapping, and scientific conduct or archaeological problem solving. Application process may begin as early as December. Additional field support fee required.

Prerequisite/Restriction: ANTH 1030 and permission of instructor.
ANTH 2525 - Introductory Archaeology Lab
1-3 credits

Laboratory experience enabling participation in analysis/reporting stages of archaeology projects. Includes methods component.

Prerequisite/Restriction: Permission of instructor

ANTH 2720 - Survey of American Folklore
3 credits

Principal ethnic, regional, and occupational folk groups in America. Relations between folklore and American history, literature, and society. Key genres in American folklore (narrative, art, song, etc.) and their role in American culture.

Cross-listed as: ENGL 2720 and HIST 2720.

ANTH 2977 - Cooperative Education
1-3 credits

Provides on-the-job experience for students in most aspects of archaeological work.

Prerequisite/Restriction: Permission of instructor

ANTH 2988 - Independent Studies
1-3 credits

Customized study or readings on topics not covered in regular courses.

Prerequisite/Restriction: Approval of proposal written by students in consultation with instructor.

ANTH 2999 - Workshop
1-3 credits

Designed to meet the changing needs of the student in Anthropology.

ANTH 3090 - Introduction to Shamanism: Shamanic Healing for Personal and Planetary Transformation
3 credits

Course provides introduction to methods utilized by shamanic healers as well as background information on indigenous views of relationships between matter, mind and spirit to help students understand how shamanic healing is used in multiple settings.

Cross-listed as: RELS 3090

Repeatable for credit

ANTH 3110 - North American Indian Cultures
3 credits

Introduces ethnography of native cultures found within the USA and Canada, documenting their pre-contact adaptations and their interactions with changing national policies leading to today's resurgence of native peoples.

Semester(s) Traditionally Offered: Fall

ANTH 3130 - Peoples of Latin America (CI)
CI Communications Intensive
3 credits

Survey of Latin American cultures, past and present. Emphasis on culture as a dynamic, adaptive system and on contemporary issues in rural and urban Andean South America, Amazonia, and Mesoamerica. Appropriate for both majors and nonmajors.

Semester(s) Traditionally Offered: Fall

ANTH 3150 - Applied Anthropology Survey: History, Uses, Methods, and Careers
3 credits

Surveys the field of applied anthropology, including discussions of emergence, application, and usefulness. Introduces students to methods and skills used by practitioners, as well as to those used to prepare for careers in applied anthropology.

Semester(s) Traditionally Offered: Spring
ANTH 3160 - Anthropology of Religion (DSS)
DSS Depth Social Sciences
3 credits


Semester(s) Traditionally Offered: Fall

ANTH 3200 - Perspectives on Race (DSS/CI)
DSS/CI Depth Social Sciences and Communications Intensive
3 credits

Study of the processes of racial differentiation, the basis of biological differences found among existing human groups, the influence of biology and culture on human variation, and the influence of social context on perceptions of race.

Semester(s) Traditionally Offered: Spring

ANTH 3250 - Osteology
3 credits

Detailed hands-on study of human skeleton, including component of comparative vertebrate skeletal anatomy. Applications to fields of archaeology, forensic science, paleopathology, and zoology. Includes methods component.

Semester(s) Traditionally Offered: Fall

ANTH 3300 - Archaeology in North America (DSS)
DSS Depth Social Sciences
3 credits

Prehistoric and historic archaeology of the North American continent. Explores initial colonization and Native American origins; variability among foraging adaptations; spread of farming; cultural complexity in Midwest, Southwest, and West Coast; Indian-environment relationships; European contact; depopulation; and historic archaeology of Euro-Americans.

Semester(s) Traditionally Offered: Spring

ANTH 3310 - Introduction to Museum Studies (CI)
CI Communications Intensive
3 credits

Explores all aspects of museum work, from the acquisition and storage of collections to fundraising and educational programs. As part of course requirements, students tour area museums and get first-hand perspectives on the challenges and rewards of museum work from professionals in the field. Course fee for field trip(s) required.

Cross-listed as: MUSM 3310

Semester(s) Traditionally Offered: Spring

ANTH 3350 - Archaeology of Ancient Civilizations (DSS)
DSS Depth Social Sciences
3 credits

Mesoamerica. In-depth study of the process of their formation and theories of their origins. Emphasis is anthropological and scientific to complement the classical and humanistic.

Semester(s) Traditionally Offered: Spring

ANTH 3360 - Utah Archaeology (DSS)
DSS Depth Social Sciences
3 credits

Popular introduction to the archaeology and prehistory of Utah and surrounding regions. Employs approachable texts with some supplementary readings. Features liberal use of photographs and maps to illustrate lectures. Class website provides context, discussion forums, and study aids.

Semester(s) Traditionally Offered: Fall

ANTH 3370 - Archaeology of Prehistoric Europe (DSS)
DSS Depth Social Sciences
3 credits

Explores major issues in European prehistory, from the arrival of the first hominids through the establishment of settled farming and pastoral communities just before the rise of the state societies.

Semester(s) Traditionally Offered: Fall

ANTH 3380 - Archaeology Field Trip
1-3 credits

Field trip to selected archaeological sites and online
learning. Trip itinerary, length and course content vary. Trips are typically camp outs and transportation is by car pooling.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ANTH 3550 - Culture of East Asia (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Helps students explore and appreciate the culture of three East Asian countries: China, Japan and Korea. Students gain sincere view and understanding of these East Asian cultures through readings, hands-on cultural activities, viewing video materials, writing, and discussions. Topics include: major historical and social events, customs and traditions, thoughts and beliefs, people, food, contemporary issues, art, literature, and film.

Cross-listed as: HIST 3550 and LANG 3550.

ANTH 4100 - The Study of Language
3 credits

Investigates ways in which human languages are structured, how they change, how they reflect the cultures in which they are used, and how they are learned.

Cross-listed as: LING 4100.

Semester(s) Traditionally Offered: Fall, Spring

ANTH 4110 - Southwest Indian Cultures, Past and Present (DSS)
DSS Depth Social Sciences
3 credits

Reviews past and present Indian cultures of greater southwest region. Examines the prehistoric Anasazi, the Pueblos, the canyon and desert peoples, the Utes, and the Navajos. Interprets these cultures in ecological, historic, and political contexts.

Cross-listed as: ANTH 6110.

Semester(s) Traditionally Offered: Spring

ANTH 4120 - Anthropology of Childhood (DSS/CI)
DSS/CI Depth Social Sciences and Communications Intensive
3 credits

Focuses on the anthropological study of childhood. Students design and carry out an ethnology (using library and archival sources) on an issue in the study of children. Readings of ethnographic studies of childhood from the U.S. and abroad. Includes methods component.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirements (ENGL 2010)

Semester(s) Traditionally Offered: Spring

ANTH 4230 - Medical Anthropology: Matter, Culture, Spirit, and Health (DSS)
DSS Depth Social Sciences
3 credits

Examines the bio-ecological (matter) and socio-cultural aspects of disease/illness in human populations and examined "spiritual" dimensions of health in cross-cultural context. Includes methods component for anthropology majors and serves as a Liberal Arts cluster capstone course.

Semester(s) Traditionally Offered: Spring

ANTH 4800 - Topics in Anthropology
1-3 credits

Focuses on special topics in anthropology. Topics and course format vary.

Repeatable for credit.

ANTH 4980 - History and Theories of Anthropology
3 credits

Explores the epistemological foundations of anthropology. Traces the history of anthropology, including the main currents of theoretical thought, the paradigm shifts that revitalize the discipline, and the major scholars that illustrate each period. This is an advanced course that benefits from some anthropology and familiarity with the intellectual traditions of the Western World.

Prerequisite/Restriction: ANTH 1010 and at least one other upper-division course in cultural anthropology.
ANTH 4990 - Contemporary Issues in Anthropology
3 credits
Capstone course in anthropological theory and method, required for all majors.
Prerequisite/Restriction: ANTH 1010; ANTH 4980 (recommended).

ANTH 5100 - Anthropology of Sex and Gender (DSS)
DSS Depth Social Sciences
3 credits
Increases awareness of sexuality and gender, and of feminist perspectives about social problems related to gender and sexuality that cross-cut cultural boundaries. Emphasizes gender-related social problems in contemporary world societies.
Cross-listed as: ANTH 6100.

ANTH 5130 - Ethnographic Field School
3-6 credits
Provides practical training in use of ethnographic field methods, qualitative data analysis, and ethnographic report-writing. Combines classroom instruction with supervised off-campus field research, while living in a cross-cultural setting. Fulfills program methods requirement. Application and additional fee required.
Cross-listed as: ANTH 6130 and SOC 5130/SOC 6130.

ANTH 5190 - Applied Anthropology Practicum
1-5 credits
Seminar with supervised projects in applied anthropology for advanced students. Integrates academic knowledge and field technique. Includes methods component.
Prerequisite/Restriction: Permission of instructor.
Cross-listed as: ANTH 6190.
Repeatable for credit.

ANTH 5210 - Physical Anthropology Lab
1-3 credits
Laboratory experience enabling participation in analysis/reporting stages of physical anthropology projects. Includes methods component.
Prerequisite/Restriction: Permission of instructor.

ANTH 5250 - Problems in Bioarchaeology (QI)
QI Quantitative Intensive
3 credits
Examines various approaches to the study of human biocultural adaptation through the analysis of human remains from archaeological sites. Includes methods component. Graduate students complete a more substantial research project than undergraduates, which must include a quantitative component.
Prerequisite/Restriction: STAT 1040 or ANTH 3250 or permission of instructor.
Cross-listed as: ANTH 6250.
Repeatable for credit.

ANTH 5300 - Archaeology Field School
3-5 credits
Internship on archaeological field project, including survey, excavation, recording, mapping, and scientific conduct of archaeological problem solving. Application process may begin as early as December. Additional field support fee required.
Prerequisite/Restriction: ANTH 1030 and instructor’s permission.
Cross-listed as: ANTH 6300.
Repeatable for credit.

ANTH 5310 - Archaeology Laboratory
1-3 credits
Laboratory experience enabling participation in analysis/reporting stages of archaeology projects. Includes methods component.

Prerequisite/Restriction: Graduate standing or permission of instructor.

Cross-listed as: ANTH 6310.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ANTH 5320 - Zooarchaeology
3 credits

Advanced undergraduate and graduate course on laboratory methods in zooarchaeology. Structured to address anthropologically significant questions that can be investigated through zooarchaeological analysis, and to provide students with the basic analytical skills to address these questions. Graduate students will be required to conduct a more extensive research project and write-up.

Cross-listed as: ANTH 6320.

Campus: Brigham City.
Semester(s) Traditionally Offered: Spring

ANTH 5330 - Geoarchaeology
3 credits

Explores the ways that the earth sciences are employed in archaeological analysis. Topics include: sedimentology, pedology, geomorphology, paleoclimatology, geophysical methods of dating archaeological materials, artifact and materials sourcing, and modeling environment-human interaction.

Prerequisite/Restriction: Graduate standing; or ANTH 1020 and ANTH 1030; or GEO 1110 and GEO 3200 and upper-division standing.

Cross-listed as: ANTH 6330.

Semester(s) Traditionally Offered: Fall

ANTH 5340 - Archaeology of the Desert West
3 credits

Prehistory of Utah and surrounding regions in context of human behavioral ecology. Approachable texts and primary literature. Photographs and maps illustrate lectures. Web site provides content, discussion forums and study aids. Graduate students present research and have weekly seminar.

Cross-listed as: ANTH 6340

Semester(s) Traditionally Offered: Fall, Spring

ANTH 5380 - Peopling of the New World
3 credits

Explores how, when, and why humans first populated the Americas. Through emphasis on critical thinking and hypothesis testing, students scientifically evaluate evidence for initial colonization drawn from the fields of archaeology, biological anthropology, genetics, and linguistics. This course is the archaeology track capstone for anthropology majors pursuing an archaeology track.

Prerequisite/Restriction: ANTH 1030 or ANTH 2330, plus one upper-division archaeology course.

Cross-listed as: ANTH 6380

Semester(s) Traditionally Offered: Spring

ANTH 5650 - Developing Societies (DSS)
DSS Depth Social Sciences
3 credits

Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.

Cross-listed as: ANTH 6650 and GEOG 5650/GEOG 6650 and SOC 5650/SOC 6650.

Semester(s) Traditionally Offered: Spring

ANTH 5700 - Folk Narrative
3 credits

Forms and functions of folk narrative genres: myth, legend, folktale, memorate, and ballad.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement and completion of a 3000-level course having an ANTH, ENGL, or HIST prefix.
Cross-listed as: ENGL 5700 and HIST 5700.

Semester(s) Traditionally Offered: Spring

ANTH 5800 - Museum Development
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: ANTH 6800

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ANTH 5900 - Independent Studies
1-3 credits

Customized study or readings for upper-division or graduate students on topics not covered in regular courses.

Prerequisite/Restriction: Approval, prior to registration, of proposal written by student in consultation with instructor.

Repeatable for credit.

ANTH 5980 - Senior Project
1 credit

Develops advanced research and writing skills in a specialty area, and results in a research project/report. Completed in consultation with faculty instructor and subject to approval.

ANTH 6100 - Anthropology of Sex and Gender
3 credits

Increases awareness of sexuality and gender, and of feminist perspectives about social problems related to gender and sexuality that cross-cut cultural boundaries. Emphasizes gender-related social problems in contemporary world societies.

Cross-listed as: ANTH 5100.

Semester(s) Traditionally Offered: Fall

ANTH 6110 - Southwest Indian Cultures, Past and Present
3 credits

Reviews past and present Indian cultures of greater southwest region. Examines the prehistoric Anasazi, the Pueblos, the canyon and desert peoples, the Utes, and the Navajos. Interprets these cultures in ecological, historic, and political contexts.

Cross-listed as: ANTH 4110.

Semester(s) Traditionally Offered: Spring

ANTH 6130 - Ethnographic Field School
3-6 credits

Provides practical training in use of ethnographic field methods, qualitative data analysis, and ethnographic report-writing. Combines classroom instruction with supervised off-campus field research, while living in a cross-cultural setting. Fulfills program methods requirement. Application and additional fee required.

Cross-listed as: ANTH 5130 and SOC 6130/SOC 5130.

Semester(s) Traditionally Offered: Summer

ANTH 6190 - Applied Anthropology Practicum
1-5 credits

Seminar with supervised projects in applied anthropology for advanced students. Integrates academic knowledge and field technique. Includes methods component.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: ANTH 5190.

Repeatable for credit.

ANTH 6250 - Problems in Bioarchaeology
3 credits

Examines various approaches to the study of human biocultural adaptation through the analysis of human remains from archaeological sites. Includes methods component. Graduate students complete a more substantial research project than undergraduates, which must include a quantitative component.
Prerequisite/Restriction: STAT 1040 or ANTH 3250 or permission of instructor.

Cross-listed as: ANTH 5250.

Repeata ble for credit.

Semester(s) Traditionally Offered: Spring

ANTH 6300 - Archaeology Field School
3-5 credits

Internship on archaeological field project, including survey, excavation, recording, mapping, and scientific conduct of archaeological problem solving. Application process may begin as early as December. Additional field support fee required.

Prerequisite/Restriction: ANTH 1030 and permission of instructor.

Cross-listed as: ANTH 5300.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

ANTH 6310 - Archaeology Lab
1-3 credits

Laboratory experience enabling participation in analysis/reporting stages of archaeology projects. Includes methods component.

Prerequisite/Restriction: Graduate standing or permission of instructor.

Cross-listed as: ANTH 5310.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ANTH 6320 - Zooarchaeology
3 credits

Advanced undergraduate and graduate course on laboratory methods in zooarchaeology. Structured to address anthropologically significant questions that can be investigated through zooarchaeological analysis, and to provide students with the basic analytical skills to address these questions. Graduate students will be required to conduct a more extensive research project and write-up.

Cross-listed as: ANTH 5320.

Campus: Brigham City.

Semester(s) Traditionally Offered: Spring

ANTH 6330 - Geoarchaeology
3 credits

Explores the ways that the earth sciences are employed in archaeological analysis. Topics include: sedimentology, pedology, geomorphology, paleoclimatology, geophysical methods of dating archaeological materials, artifact and materials sourcing, and modeling environment-human interaction.

Prerequisite/Restriction: Graduate standing; or ANTH 1020 and ANTH 1030; or GEO 1110 and GEO 3200 and upper-division standing.

Cross-listed as: ANTH 5330.

Semester(s) Traditionally Offered: Fall

ANTH 6340 - Archaeology of the Desert West
3 credits

Prehistory of Utah and surrounding regions in context of human behavioral ecology. Approachable texts and primary literature. Photographs and maps illustrate lectures. Web site provides content, discussion forums and study aids. Graduate students present research and have weekly seminar.

Prerequisite/Restriction: Graduate standing.

Cross-listed as: ANTH 5340

Semester(s) Traditionally Offered: Fall, Spring

ANTH 6350 - Archaeological Theory
3 credits

Survey and critique of archaeological theory from the 19th century to current issues in the 21st century. Emphasizes shifting paradigms and research strategies. As a seminar course, includes reading, discussion, and critical writing.

Semester(s) Traditionally Offered: Fall

ANTH 6360 - Research Design and Quantitative Methods in Archaeology
3 credits

Develops skills required for conducting original research at the professional level. Focuses on linking research with relevant theoretical, empirical, and methodological questions; developing statistically sound sampling strategies; using statistics to interpret data; and deriving conclusions from data.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall

ANTH 6370 - GIS in Archaeology
3 credits

Presents background and develops skills necessary to use geographic information systems (GIS) for recording and maintaining archaeological data. Provides overview on how to use GIS to analyze and interpret these types of data.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Spring

ANTH 6380 - Peopling of the New World
3 credits

Explores how, when, and why humans first populated the Americas. Through emphasis on critical thinking and hypothesis testing, students scientifically evaluate evidence for initial colonization drawn from the fields of archaeology, biological anthropology, genetics, and linguistics.

Prerequisite/Restriction: ANTH 1030 or ANTH 2330, plus one upper-division archaeology course.

Cross-listed as: ANTH 5380

Semester(s) Traditionally Offered: Spring

ANTH 6400 - Collections Management
2 credits

Teaches techniques for accessioning, curating, storing, and managing anthropological collections. Emphasizes computer software commonly used to track ethnographic and archaeological assemblages of objects.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall, Spring

ANTH 6410 - Writing for Archaeologists
3 credits

Teaches future archaeologists to communicate effectively in the various genres of the discipline demanding writing proficiency. Emphasizes professional writing, including research papers, grant proposals, bids for archaeological work, curriculum vitae, and cover letters.

Semester(s) Traditionally Offered: Fall

ANTH 6540 - Lithic Analysis
1 credit

Laboratory course emphasizing techniques used to study stone tools and other lithic technologies. Focuses on morphological analysis and how to generate data from laboratory measurements. Includes applications of lithic analyses to empirical and theoretical research questions.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit

Semester(s) Traditionally Offered: Fall

ANTH 6650 - Developing Societies
3 credits

Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.

Cross-listed as: ANTH 5650 and GEOG 6650/GEOG 5650 and SOC 6650/SOC 5650.
Semester(s) Traditionally Offered: Spring
ANTH 6700 - Archaeology Internship
3-6 credits
Internship placement in governmental agency or department, museum, or private archaeology firm. Arranged and overseen by the Anthropology graduate director, in conjunction with the committee chair and professional supervisor.
Prerequisite/Restriction: Proposal and permission of instructor
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
ANTH 6800 - Museum Development
1-3 credits
Apprenticeship in the USU Museum of Anthropology to learn the operation of a small museum. Entails collaborating closely with the museum director and staff. Projects vary and can include curation, exhibit development, public outreach, and others.
Prerequisite/Restriction: Permission of instructor.
Cross-listed as: ANTH 5800
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
ANTH 6900 - Independent Studies
1-3 credits
Customized study or readings for graduate students on topics not covered in regular courses.
Prerequisite/Restriction: Approval of proposal written by student in consultation with instructor.
Repeatable for credit.

ANTH 6970 - Thesis Research
1-12 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer
Applied Economics
APEC 2010 - Introduction to Microeconomics (BSS)
BSS Breadth Social Sciences
3 credits
Designed to build an understanding of the economics of the marketplace from the perspectives of individual consumer and producer or business. Development and application of microeconomic principles to demonstrate the role and limitations of competitive markets in motivating socially efficient consumer, business, and public sector choices.
Prerequisite/Restriction: ECN 1500.
Cross-listed as: ECN 2010.

Semester(s) Traditionally Offered: Fall, Spring, Summer
APEC 3010 - Introduction to Agricultural Economics and Agribusiness (DSS)
DSS Depth Social Sciences
3 credits
Introduction to economic principles as they apply to the food and agricultural industry. Emphasizes production and consumption of food and fiber products, the structure of the agricultural/agribusiness industry, major farm problems, and public policy issues impacting agribusiness firms.

Semester(s) Traditionally Offered: Spring
APEC 3012 - Introduction to Natural Resource and Regional Economics (DSS)
DSS Depth Social Sciences
3 credits
Introduction to economic principles as they apply to the use of natural resources and as they affect environmental quality. Analysis of changes in natural resource use and environmental quality, in order to determine the economic impact upon rural communities and regions.

Semester(s) Traditionally Offered: Fall
APEC 3020 - Firm Finance and Records Analysis (DSS)
DSS Depth Social Sciences
3 credits
Construction, analysis, and comparison of key financial
statements using cash and accrual systems of accounting. Introduction to computerized financial and management record-keeping systems to meet tax and management purposes.

Prerequisite/Restriction: ACCT 2010 and APEC 3010 (APEC 3010 may be taken concurrently).

Semester(s) Traditionally Offered: Spring
APEC 3310 - Analytical Methods in Applied Economics (QI)
QI Quantitative Intensive
3 credits

Explores application of mathematics to agricultural, resource, environmental, and regional economics. Reviews algebraic, single-variable calculus (differentiation and integration); multivariate calculus optimization; and linear algebra and applications to economics.

Corequisite: MATH 1100 and (APEC 2010 or ECN 2010) or instructor’s permission

Semester(s) Traditionally Offered: Fall
APEC 4010 - Intermediate Microeconomics
3 credits

Analysis of behavior of consumers and business firms. Application of theory to the solution of real world problems. Credit will not be given for both ECN 3010 and APEC/ECN 4010.

Prerequisite/Restriction: APEC 2010/ECN 2010, MATH 1100, and STAT 2300.

Cross-listed as: ECN 4010.

Semester(s) Traditionally Offered: Fall, Spring
APEC 5000 - Macroeconomics and Trade
3 credits

Explores the business cycle, monetary policy, interest rates, inflation, employment, and production as they apply to agribusiness and related industries. Includes discussion of exchange rates, balance of trade, comparative advantage, and various policy tools used to influence trade.

Prerequisite/Restriction: ECN 1500.

Semester(s) Traditionally Offered: Spring
APEC 5010 - Firm Marketing and Price Analysis (QI)
QI Quantitative Intensive
3 credits

Students learn strategies for product and commodity marketing. Explores risk management, including futures and options, as well as price analysis and forecasting techniques.

Prerequisite/Restriction: APEC 4010 or ECN 3010 or ECN 4010

Semester(s) Traditionally Offered: Fall
APEC 5015 - Firm Management, Planning, and Optimization (QI)
QI Quantitative Intensive
3 credits

Application of principles and practices used by managers of agribusiness firms. Evaluation of alternative actions using budgeting (enterprise, cash flow, partial, whole firm, and capital) and optimization programs.

Prerequisite/Restriction: APEC 4010 or ECN 3010 or ECN 4010

Semester(s) Traditionally Offered: Fall
APEC 5020 - Strategic Firm Management (CI)
CI Communications Intensive
3 credits

Explores principles and concepts needed to evaluate the impact of industry structure, policies, and international forces on the management of agribusiness firms. Emphasizes the evaluation of producing and marketing new or differentiated products or services.

Prerequisite/Restriction: APEC 4010 or ECN 3010 or ECN 4010

Semester(s) Traditionally Offered: Spring
APEC 5330 - Applied Econometrics (QI)
QI Quantitative Intensive
3 credits
Introduction to basic statistics, simple linear regression, multiple regression, and simultaneous equation models for economics.

Prerequisite/Restriction: STAT 2000 or STAT 2300 or STAT 3000.

Cross-listed as: ECN 5330.

Semester(s) Traditionally Offered: Spring

APEC 5560 - Natural Resource and Environmental Economics
3 credits

Economics of developing, managing, and conserving natural resources and the environment. Topics include resource use and conservation, environmental quality, public and private resource management, and valuation of nonmarket goods.

Prerequisite/Restriction: APEC 2010/ECN 2010 or APEC 3012.

Semester(s) Traditionally Offered: Spring

APEC 5850 - Regional and Community Economic Development
3 credits

Building on microeconomic theory, models for regional and urban structure and change are explored. Policy decision models are also developed.

Prerequisite/Restriction: APEC 3012 or ECN 3010 or APEC 4010/ECN 4010.

Semester(s) Traditionally Offered: Fall

APEC 5950 - Senior Project
3 credits

Identification and analysis of a current economic problem. Throughout this process, other agricultural economics course concepts and methods are brought together.

Semester(s) Traditionally Offered: Fall, Spring

APEC 6000 - Macroeconomic Theory I
3 credits

Lays a foundation of advanced macroeconomic analysis, integrating theory, data, and computational methods. Special attention given to real-world issues, with an emphasis on how economists use macro models and data to improve business and public policy decisions. Topics covered include neoclassical and endogenous growth theories, real business cycle and new Keynesian theories of economic fluctuations, monetary theory, macroeconomic policy, and open-economy macroeconomics.

Cross-listed as: APEC 7230 and ECN 6000/ECN 7230.

Semester(s) Traditionally Offered: Fall

APEC 6030 - Agricultural Marketing
3 credits

Covers a variety of topics relating to price analysis for agricultural commodities. Explores econometric and time series modeling and forecasting of agricultural prices. Includes a section on futures and options on futures contracts, focusing on fundamental and technical analysis.

Prerequisite/Restriction: APEC 6330/ECN 6330.

Semester(s) Traditionally Offered: Fall

APEC 6040 - Agribusiness Production and Supply Chain Management
3 credits

Uses economics to explain resource allocations within agribusiness production units and supply chains. This includes, but is not limited to, development of understanding of supply chains and how to use supply chains to effectively address markets for food and fiber.

Prerequisite/Restriction: APEC 6030.

Semester(s) Traditionally Offered: Fall

APEC 6100 - Microeconomic Theory I
3 credits
Provides a rigorous introduction to graduate-level microeconomic theory. While the specific focus is on the theoretical construct of graduate-level microeconomic models, the broad objective of the class is to lay the foundation for empirical applications in microeconomics. To meet this broad objective, the course covers theory of the firm, consumer theory, market structure, theory of public goods and externalities, and welfare economics.

Semester(s) Traditionally Offered: Fall
APEC 6250 - Graduate Internship
1-3 credits
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
APEC 6300 - Quantitative Analysis for Business and Policy Decisions
3 credits
Provides an introduction to applied mathematical programming, operations research, simulation, risk analysis, adaptive management, and other decision theoretic tools used by government policy makers and managers of firms.

Semester(s) Traditionally Offered: Spring
APEC 6330 - Applied Econometrics
3 credits
Provides graduate-level introduction to applied regression tools, including: simple and multivariate regression analysis; linear, nonlinear, and qualitative dependent variable models; distributed lags; seemingly unrelated regression; and model specification and validation tests. Prerequisite: Background in statistics and calculus.

Cross-listed as: ECN 6330.
Semester(s) Traditionally Offered: Fall
APEC 6500 - Introduction to Natural Resource Economics
3 credits
Introduction to the legal and regulatory foundations of natural resource policy, with specific attention to water, minerals, rangelands, forests, fish, and off-site impacts of agricultural and industrial production. Topics include externalities, property rights, public goods, public choice, and public trust.

Prerequisite/Restriction: ECN 3010 or APEC 4010/ECN 4010 or APEC 5560.
Semester(s) Traditionally Offered: Spring
APEC 6510 - Introduction to Environmental Economics
3 credits
Introduction to the foundations of environmental economics. Adaptation of market mechanisms to ameliorate pollution problems and provide amenity services. Methods for determining the value of nonmarketed goods and services. Topics include economic principles regarding social choice and market exchange, as well as current and historical issues involving pollution, environmental regulation, and the effects of environmental regulation on the profitability of private and public entities.

Prerequisite/Restriction: ECN 3010 or APEC 4010/ECN 4010 or APEC 5560 or APEC 6500.
Semester(s) Traditionally Offered: Fall
APEC 6700 - Regional and Community Economic Development
3 credits
Extension of microeconomic foundations of regional and urban economics to recent advances in economic growth and development, economic structure, land-use, public finance, housing, social welfare, environmental quality, and transportation.

Prerequisite/Restriction: APEC 6100.
Semester(s) Traditionally Offered: Spring
APEC 6710 - Community Planning and Impact Analysis
3 credits
Focuses on tools used by local and regional economic development specialists as they relate to planning and impact assessment. Specific topics will include I/O models, IMPLAN models, and computable CGE modeling approaches as they are used in a planning environment.

Prerequisite/Restriction: APEC 6700.
Semester(s) Traditionally Offered: Fall
APEC 6910 - Independent Research  
1-3 credits  
Directed readings. Credits from this course toward any economics graduate degree require approval of the student's advisory committee, the department graduate committee, and the department head.  
Prerequisite/Restriction: APEC 4010/ECN 4010 and ECN 5000.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

APEC 6970 - Thesis Research  
1-9 credits  
Master's level research.  
Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

APEC 6990 - Continuing Graduate Advisement  
1-9 credits  
Master's level advisement.  
Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

APEC 7130 - Microeconomic Theory I  
3 credits  
Provides a rigorous introduction to graduate-level microeconomic theory. While the specific focus is on the theoretical construct of graduate-level microeconomic models, the broad objective of the class is to lay the foundation for empirical applications in microeconomics. To meet this broad objective, the course covers theory of the firm, consumer theory, market structure, theory of public goods and externalities, and welfare economics. 
Cross-listed as: ECN 7130.  
Semester(s) Traditionally Offered: Fall

APEC 7140 - Microeconomic Theory II  
3 credits  
Extends the theoretical foundations of microeconomics with an emphasis on model building in economics. Topics include static games of complete and incomplete information, dynamic games of complete and incomplete information, imperfectly competitive markets, risk and uncertainty, public goods, general equilibrium, and information economics.  
Prerequisite/Restriction: APEC 7130/ECN 7130 and APEC 7360/ECN 7360.  
Cross-listed as: ECN 7140  
Semester(s) Traditionally Offered: Spring

APEC 7150 - Microeconomic Theory III  
3 credits  
Explores the uses of microeconomic theory in fields such as Game Theory, Industrial Organization, and Labor Economics. Study of topics such as multi-stage and repeated games, bargaining, principal-agent models of economic behavior, auctions and bidding, labor market discrimination, price discrimination and two-part tariffs, and the labor-leisure choice. Course is based on both classic and contemporary papers in each of these fields.  
Prerequisite/Restriction: APEC 7140 or ECN 7140  
Semester(s) Traditionally Offered: Fall

APEC 7230 - Macroeconomic Theory I  
3 credits  
Lays a foundation of advanced macroeconomic analysis, integrating theory, data, and computational methods. Special attention given to real-world issues, with an emphasis on how economists use macro models and data to improve business and public policy decisions. Topics covered include neoclassical and endogenous growth theories, real business cycle and new Keynesian theories of economic fluctuations, monetary theory, macroeconomic policy, and open-economy macroeconomics. 
Cross-listed as: APEC 6000 and ECN 7230/ECN 6000.  
Semester(s) Traditionally Offered: Fall

APEC 7240 - Macroeconomic Theory II  
3 credits  
Extends the foundations of APEC 7230/APEC 6000 with a
more in-depth look at the theory and computational aspects of various models of economic growth and business cycles.

Prerequisite/Restriction: APEC 7230/APEC 6000/ECN 7230/ECN 6000 and APEC 7360/ECN 7360.

Cross-listed as: ECN 7240.

Semester(s) Traditionally Offered: Spring

APEC 7310 - Econometrics I
3 credits

 Begins with a review of probability and statistics. Remainder of course is spent discussing the Classical linear regression model, least squares and maximum likelihood estimation, finite and asymptotic sample properties, inference, prediction, and nonlinear optimization.

Cross-listed as: ECN 7310

Semester(s) Traditionally Offered: Fall

APEC 7320 - Econometrics II
3 credits

Extension of APEC 7310, covering topics such as nonspherical disturbances, panel data, simultaneous equations, time series and distributed lag models, and limited and qualitative dependent variable models.

Prerequisite/Restriction: APEC 7310/ECN 7310.

Cross-listed as: ECN 7320.

Semester(s) Traditionally Offered: Spring

APEC 7330 - Econometrics III
3 credits

Provides in-depth coverage of current topics/techniques in applied econometric time series analysis, with an emphasis on econometric model development, estimation, and interpretation. Topics include difference equations, lag operators, stationary ARMA processes, modeling economic time series including trends and volatility, testing for trends and unit roots, vector autoregressions, the Kalman filter including the state space representation of a dynamic system, cointegration, and error-correction models.

Prerequisite/Restriction: APEC 7320/ECN 7320.

Semester(s) Traditionally Offered: Fall

APEC 7350 - Mathematical Economics I
3 credits

Includes linear equations, matrix algebra, multivariate calculus, static optimization, comparative static analysis, constrained optimization, and Kuhn-Tucker conditions.

Cross-listed as: ECN 7350.

Semester(s) Traditionally Offered: Fall

APEC 7360 - Mathematical Economics II
3 credits

Extends the presentation of APEC 7350 by covering applications of constrained optimization, the envelope theorem and applications, differential equations, dynamic economics, and optimal control.

Prerequisite/Restriction: APEC 7350/ECN 7350.

Semester(s) Traditionally Offered: Spring

APEC 7400 - International Trade and the Environment
3 credits

Focuses on recent developments in the theory of trade and trade policy, including: (1) imperfect competition, (2) factor movements, (3) trade flows, and (4) the effect of trade policies on environmental quality.

Prerequisite/Restriction: APEC 7140/ECN 7140 and APEC 7240/ECN 7240.

Semester(s) Traditionally Offered: Spring

APEC 7500 - Resource Economics
3 credits

Focuses on formal economic models associated with optimal exploitation of renewable and nonrenewable resources. Applications to minerals, groundwater, energy resources, soil, forests, fisheries, rangelands, watersheds, wildlife, etc.

Prerequisite/Restriction: APEC 7140/ECN 7140 and APEC 7240/ECN 7240.
APEC 7510 - Environmental Economics
3 credits

Covers the theory of environmental policy. Topics include, but are not limited to, externalities, uncertainty and the choice of policy instruments, market imperfections and the number of participants, nonconvexities in the production set, the charges and standards approach, marketable emission permits, the environment and development, international environmental issues, and ecological economics.

Prerequisite/Restriction: APEC 7500.

APEC 7950 - Department of Economics Graduate Seminar
1 credit

Exposes students to new developments in research and management in the field of economics. Features participation by students, faculty, and guest lecturers.

Repeatable for credit.
Pass/Fail only.

APEC 7970 - Dissertation Research
1-9 credits

PhD dissertation research.

Repeatable for credit.
Pass/Fail only.

APEC 7990 - Continuing Graduate Advisement
1-9 credits

PhD-level advisement.

Repeatable for credit.
Pass/Fail only.

Apprentice (USU Eastern)

APPR 2301 - Electrical Apprentice 1-A
5 credits

Designed for students enrolled in electrical apprenticeship. Teaches the theory of electricity and includes an introduction to electricity, basic CD theory, voltage, current, resistance, batteries, and magnetism. Covers principles, formulas and math for simple electrical circuits, series, parallel, combination circuits, and power problems. Includes theory and lab experiences.

Prerequisite/Restriction: Willingness to obtain apprentice license

Campus: USU Eastern only

APPR 2302 - Electrical Apprentice 1-B
5 credits

Designed for students enrolled in electrical apprenticeship. Introduces measuring instruments, magnetism, circuits, devices, National Electrical Code, blueprint reading, DC motors, low voltage circuits, DC motor control, DC generators, 3 and 4 way switches, and conduit bending.

Prerequisite/Restriction: APPR 2301 and apprentice license

Campus: USU Eastern only

APPR 2303 - Electrical Apprentice 2-A
5 credits

Designed for students enrolled in electrical apprenticeship. Covers the application of AC theory as it applies to industrial applications in the electrical field. Covers the basic construction and theory of inductance, capacitance, and resistors dealing with L.C.R. circuits as they are used in the electrical field. Emphasizes hands-on lab experience in correcting power factor in motors, comparing true power and reactive power in inductor, capacitors and resistors.

Prerequisite/Restriction: APPR 2302 and apprentice license

Campus: USU Eastern only

APPR 2304 - Electrical Apprentice 2-B
5 credits

Designed for students enrolled in electrical apprenticeship. Covers the installation, troubleshooting,
preventive maintenance and repair of AC motors, motor control, and transformers. Students will learn the proper use of tools and test equipment needed in maintaining AC motors, motor control, and transformers. Includes theory and lab experiences.

Prerequisite/Restriction: APPR 2303 and apprentice license

Campus: USU Eastern only

APPR 2310 - Electrical Apprentice 3-A
5 credits

Designed for students enrolled in electrical apprenticeship. Includes installation, trouble-shooting, preventive maintenance, and repair of AC motor controls. Covers the proper use of hand tools and test equipment, used in the maintenance of AC motor controllers. Completers should be able to work at entry level jobs maintaining AC motor control equipment in an industrial environment.

Prerequisite/Restriction: APPR 2304 and apprentice license

Campus: USU Eastern only

APPR 2320 - Electrical Apprentice 3-B
5 credits

Designed for students enrolled in electrical apprenticeship. Covers the theory of the operation of electronic devices used in industrial control systems. Students study test equipment and procedures used in the installation, maintenance, troubleshooting, and repair of electronic control circuits. The basic theory and operation of instrumentation and process control equipment is introduced. Completers should be able to work in industry in related entry level positions.

Prerequisite/Restriction: APPR 2310 and apprentice license

Campus: USU Eastern only

APPR 2410 - Electrical Apprentice 4-A
5 credits

Designed for students enrolled in electrical apprenticeship. Studies: Industrial motor control with particular attention to the National Electrical Code and Programmable Logic Controllers. (PLC). Explores the fundamental parts of a PLC system, identifying their use and how they work together to make a control system. Completers should be qualified to work in industry in related work at entry level positions.

Prerequisite/Restriction: APPR 2320 and apprentice license

Campus: USU Eastern only

APPR 2420 - Electrical Apprentice 4-B
5 credits

Final course designed for students enrolled in electrical apprenticeship. Reviews DC and AC theory, electrical circuits and circuit calculations, transformers, motors and motor control circuits. Studies the calculation of single and three phase loads, service entrance size, feeder and branch circuit capacity, wire and conduit size, and voltage drops. Includes a comprehensive study of all chapters of the National Electrical Code with an emphasis placed on the preparation for taking the Utah State Journeyman Exam. Completers should be prepared to take the Utah State Journeyman Exam, provided they have completed all Utah State requirements.

Prerequisite/Restriction: APPR 2410 and apprentice license

Campus: USU Eastern only

ARBC 1010 - Arabic First Year I
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Semester(s) Traditionally Offered: Fall
ARBC 1020 - Arabic First Year II
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: ARBC 1010 or equivalent.

Semester(s) Traditionally Offered: Fall, Spring

ARBC 2010 - Intermediate Standard Arabic Second Year I
4 credits

This course focuses on developing proficiency in the formal oral and written Arabic language, with emphasis on advanced grammar topics, oral fluency skills, non-technical prose reading and writing, and cultural awareness activities.

Prerequisite/Restriction: ARBC 1020

Semester(s) Traditionally Offered: Fall

ARBC 2020 - Intermediate Standard Arabic Second Year II
4 credits

Continuation of ARBC 2010

Prerequisite/Restriction: ARBC 2010

Semester(s) Traditionally Offered: Spring

ARBC 3030 - Introduction to Islam
3 credits

This course will focus on understanding Islam through the examination of what Muslim jurists, theologians, exegetes and traditionalists think of their own traditions. This course will focus on the core beliefs, practices, scriptures and sentiments that have defined historically Muslim communities. In addition, the course aims to examine the spiritual dimensions, the theological discourses and the legal maxims of the Muslim traditions.

Cross-listed as: RELS 3030

ARBC 4040 - Language and Culture of the Arab World
3 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs. This course is only for students with no previous background in the Arabic language.

Semester(s) Traditionally Offered: Fall

Art

ART 1010 - Exploring Art (BCA)
BCA Breadth Creative Arts
3 credits

Introduction to the visual arts, including the language, elements, and history of art.

Semester(s) Traditionally Offered: Fall

ART 1020 - Drawing I
3 credits

Introduction to the visual language of drawing, the graphic elements, various drawing media, and the creative problems involved.

Semester(s) Traditionally Offered: Fall, Spring

ART 1050 - Introduction to Photography
3 credits

Overview of photography. Operation of camera and related equipment, exposure and development of black and white and color positive film materials, and enlarging and printing of black and white negatives, with a strong emphasis on composition and photographic aesthetics.

Semester(s) Traditionally Offered: Fall

ART 1110 - Drawing I (Art Majors Only)
3 credits

Development of foundation drawing skills for art majors. Introduction to fundamental drawing principles and various drawing media through creative applications. Required for art majors.

Prerequisite/Restriction: Enrollment limited to art majors having freshman standing (30 or less earned credits) only.

Semester(s) Traditionally Offered: Fall, Spring

ART 1120 - Two-Dimensional Design
3 credits
Study and problem solving of form, space, texture, value, and color theory.

Semester(s) Traditionally Offered: Fall, Spring

ART 1130 - Three-Dimensional Design
3 credits

Fosters development of basic understanding of three-dimensional form and space relationships. Includes three-dimensional problem solving, as well as use of a range of materials.

Semester(s) Traditionally Offered: Fall, Spring

ART 1150 - Two-Dimensional Design (Art Majors Only)
3 credits

Foundation design course for art majors. Exploration of the elements and principles of two-dimensional design. Extensive use of a variety of media in creative problem solving. Required for art majors.

Prerequisite/Restriction: Enrollment limited to art majors having freshman standing (30 or less earned credits) only.

Semester(s) Traditionally Offered: Fall, Spring

ART 1160 - Three-Dimensional Design (Art Majors Only)
3 credits

Foundation design course for art majors. Exploration into the principles and vocabulary of visual organization in three dimensions. Through the manipulation of a variety of materials, students gain understanding of form and space. Required for art majors.

Prerequisite/Restriction: Enrollment limited to art majors having freshman standing (30 or less earned credits) only.

Semester(s) Traditionally Offered: Fall, Spring

ART 1430 - Basic Illustration
3 credits

Will emphasize basic drawing and painting skills in illustration problems in a variety of media and techniques. Emphasis will be placed on materials. Students will draw and paint from the model in some assignments.

Campus: USU Eastern only

ART 2110 - Drawing II
3 credits

A continuation of ART 1020 or ART 1110, with an emphasis on more complex problems and techniques.

Prerequisite/Restriction: ART 1020 or ART 1110 or permission of instructor. Enrollment limited to art majors having freshman standing (30 or less earned credits) only.

Semester(s) Traditionally Offered: Fall, Spring

ART 2200 - Painting I
3 credits

Introduction to visual language of painting. Focuses on organization of visual ideas and basic oil painting techniques. Provides experience in both direct and indirect painting methods, as well as introducing applied color concepts.

Prerequisite/Restriction: ART 1020 or ART 1110; and ART 1120 or ART 1150.

Semester(s) Traditionally Offered: Fall

ART 2220 - Watercolor Painting
3 credits

Exploration of formal, technical, and conceptual problems in water media, for students with basic painting experience. Emphasis on gaining proficiency in both transparent and opaque watercolor techniques.

Prerequisite/Restriction: ART 2200.

Semester(s) Traditionally Offered: Fall, Spring

ART 2230 - Basic Printmaking
3 credits

Introductory course to acquaint students with the broader aspects of relief, intaglio, and planographic processes.

Prerequisite/Restriction: ART 1020 or ART 1110; and ART 1120 or ART 1150.
Semester(s) Traditionally Offered: Fall

ART 2260 - Intermediate Portfolio Preparation
2 credits

Designed for sophomore students who will transfer to a four-year program or begin professional careers as artists. Course addresses photographing and assembling a digital portfolio and writing artist statements, cover letters, and resumes. Critical analysis skills will be built through a series of formal critiques. Required of all art majors.

Campus: USU Eastern only

ART 2400 - Computers and Art
3 credits

Basic course dealing with the study and use of the personal computer as a creative medium. Emphasizes hands-on software training directed toward the art of visual design and aesthetic expression. Several projects created using the computer and related peripherals. Discusses various forms of digital output and communications. Critical reviews of art projects focus on the elements and principles of visual design, as well as basic graphic design concepts.

Prerequisite/Restriction: Enrollment limited to Art majors only.

Semester(s) Traditionally Offered: Fall

ART 2500 - Advanced Photography
3 credits

A continuation of ART 2810, the advanced course will further the skills and experiences of the photographer in technical controls, lighting and exposure. A greater emphasis will be placed on aesthetics and photographic style. The instructor will use lectures, demonstrations and reviews to help the student better understand the medium. An introduction to experimental photography and image enhancement processes will be explored. The student, in conjunction with the instructor, will develop a project that will be presented in portfolio form at the end of the semester. Emphasis will be placed on the aesthetic and presentation skills acquired during the class.

Prerequisite/Restriction: ART 2810

ART 2600 - Basic Sculpture
3 credits

Introduction to additive and subtractive processes in the realization of sculptural ideas. Student involvement in carving, clay modeling, and construction projects.

Prerequisite/Restriction: ART 1130 or ART 1160.

Semester(s) Traditionally Offered: Fall, Spring

ART 2650 - Introduction to Ceramics
3 credits

Introduction to basic processes of ceramics and the operation of the USU ceramics lab. Includes handbuilding, throwing, and firing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 2660 - Intermediate Ceramics
3 credits

Includes all the descriptions in ART 2650 course with an emphasis on throwing larger forms, extruded sculptural forms and Raku firing of wheel thrown forms.

Campus: USU Eastern only

ART 2810 - Photography I
3 credits

Black and white photography, including camera operation, exposure and development, and enlarging and printing of black and white negatives, with a concern for advancing technical controls, aesthetics, and darkroom experimentation. Introduction to electronic imaging.

Semester(s) Traditionally Offered: Fall, Spring

ART 2900 - Introductory Internship/CO-OP
3 credits

Introductory level educational work experience in an internship/cooperative education position approved by the Department of Art.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ART 3000 - Secondary Art Methods I
3 credits

Focuses on developing art curricula by formulating objectives for teaching art history, art appreciation, and the making of art in the secondary schools. Required for art education majors.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ART 3050 - Japanese Calligraphy
1 credit

Study of Japanese writing system through practicing the art of calligraphy.

Cross-listed as: JAPN 3050.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 3200 - Painting II
3 credits

Continuation of concepts and techniques covered in ART 2200, emphasizing more complex formal and conceptual problems.

Prerequisite/Restriction: ART 2200.
Semester(s) Traditionally Offered: Spring

ART 3210 - Classical Mythology
3 credits

Introduces major myths of the Classical world. Explores how these myths serve as keys to understanding the documents and arts of Classical civilization.

Cross-listed as: CLAS 3210.
Semester(s) Traditionally Offered: Fall, Spring

ART 3220 - Screen Printing
3 credits

Investigation of the basic processes employed in screen printing. Includes surface preparation, image preparation, drawing techniques, registration, and printing of the screen.

ART 3230 - Lithography
3 credits

Investigation of the basic processes employed in lithography, including surface preparation, basic drawing techniques, registration, processing, and printing of the stone or plate, as well as photo, transfer, and color methods.

Prerequisite/Restriction: ART 2230.
Semester(s) Traditionally Offered: Spring

ART 3240 - Intaglio
3 credits

Investigation of the basic processes employed in intaglio, including acid (line etch, aquatint, lift grounds, soft ground) and nonacid (dry point, mezzotint, engraving) techniques, as well as transfer and color methods.

Prerequisite/Restriction: ART 2230.
Semester(s) Traditionally Offered: Spring

ART 3250 - Relief Prints
3 credits

Introduction to relief printing, including woodcut, linoleum cut, and wood engraving.

Prerequisite/Restriction: ART 2230.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ART 3270 - Color: Theory and Practice
3 credits

Explores both the theory and application of color in the visual arts. Special emphasis placed on the development of applied color skills.

Semester(s) Traditionally Offered: Summer

ART 3300 - Clinical Experience I
1 credit
First clinical practicum (30 hours minimum) in middle and secondary schools, arranged by special methods instructors in department. Required at level I.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

ART 3350 - Drawing for Illustration
3 credits

Encourages drawing with a variety of media. Students will draw from the model in class. Homework consists of filling two 100-page sketchbooks with drawings from life, memory, or photographs.

Repeatable for credit.

ART 3370 - Illustration Concepts
3 credits

Students learn to develop visual ideas for illustrations and carry an idea through the stage of roughs to a comprehensive and finished image, using both digital and traditional media.

Prerequisite/Restriction: ART 1020 or ART 1110; ART 1120 or ART 1150; and ART 2400.

Repeatable for credit.

ART 3400 - Typography
3 credits

Introductory graphic design course, dealing with concepts and principles related to the exploration of typography as an art and design element. Series of exercises designed to give students professional and philosophical look at aesthetic and functional use of type and related visual elements.

Prerequisite/Restriction: ART 1120 or ART 1150; and ART 2400.

Repeatable for credit.

ART 3420 - Communication Arts Seminar
1 credit

Lecture seminars by professional guest artists in illustration and graphic design.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ART 3610 - Intermediate Sculpture
3 credits

Further development in the materials, techniques, and traditions of sculpture. Expands on specific explorations, such as modeling, construction, and carving. Emphasizes strong relationship between concept and the technical execution of a sculptural form.

Prerequisite/Restriction: ART 2600.

Semester(s) Traditionally Offered: Fall

ART 3650 - Intermediate Ceramics: Handbuilding
3 credits

Application of traditional ceramic construction techniques to vessel and sculptural subjects.

Prerequisite/Restriction: ART 2650.

Repeatable for credit.

ART 3660 - Intermediate Ceramics: Throwing on the Potter's Wheel
3 credits

Focuses on throwing and trimming techniques using the potter's wheel. Emphasizes production of multiples.

Prerequisite/Restriction: ART 2650.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ART 3700 - Elementary Art Methods
3 credits

Focuses on developing art curricula by formulating objectives for teaching art processes, art history, and art appreciation in the elementary schools. Required preparation for a grade school teacher.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ART 3710 - Fine Art Seminar
1 credit
Lecture seminars given by professionals as part of the Art Department visiting artist program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ART 3810 - Photography II
3 credits
Advanced black and white photography emphasizing technical controls, including the zone system and introduction to the 4x5 camera. Application of technical skills to enhance creative photographic expression. Continuation of digital imaging and use of computer for sensitometry graphing.
Prerequisite/Restriction: ART 2810 or equivalent experience.
Semester(s) Traditionally Offered: Spring

ART 4000 - Secondary Art Methods II
3 credits
Focuses on developing methodologies for presenting art concepts and techniques in the secondary schools.
Prerequisite/Restriction: ART 3000.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4200 - Advanced Drawing and Painting Studio
3-6 credits
Advanced individual painting and drawing projects. Students may use a variety of painting and drawing methods to execute a series of closely related paintings and drawings that are intended to develop a focused and personal portfolio.
Prerequisite/Restriction: ART 2200.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4210 - Figure Painting
3 credits
Painting from the model, with emphasis on solving problems of the planar structure of the human form.
Prerequisite/Restriction: ART 4260.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4250 - Advanced Printmaking Studio
1-9 credits
In-depth investigation of one printmaking process with emphasis placed on both technical and aesthetic considerations.
Prerequisite/Restriction: ART 2230 and permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ART 4260 - Life Drawing
3 credits
Drawing from live models with emphasis on exploring interpretation, techniques, and compositional approach.
Prerequisite/Restriction: ART 1110 and ART 2110.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4270 - Special Topics: Drawing and Painting
3 credits
Focuses on various issues in the field of drawing and painting. Allows students to pursue production of their own creative endeavors related to the topic of the course. Course content varies from semester to semester.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4300 - Clinical Experience II
1 credit
Second clinical practicum (30 hours minimum) in middle and secondary schools, arranged by special methods instructors in department. Required at level II.
Prerequisite/Restriction: ART 3300.
ART 4370 - Illustration Studio
3 credits

Students build and enhance their portfolios through solving a series of advanced illustration problems. Emphasizes development of personal style through an examination of content, materials, and techniques. Explores both digital and traditional media.

Prerequisite/Restriction: ART 3370.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4410 - Graphic Interface Design I
3 credits

Concentrates on development of graphic design techniques and theories necessary to create successful graphical user interfaces. Students explore aesthetic and functional uses of motion, sound, interactivity, information architecture, branding, and typography as they relate to graphic interface design.

Prerequisite/Restriction: ART 4420, ART 4440.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4420 - Brand Identity Design
3 credits

Advanced studio course focusing on the visual expression of a brand. Students study the design and application of trademarks/logos, related brand strategies, positioning, and processes of research and analysis. Students complete a series of symbol design and application projects.

Prerequisite/Restriction: ART 3400.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4430 - Graphic Interface Design II
3 credits

Advanced graphic design course exploring dynamic interactivity. Students take a professional and philosophical look at the use of multimedia as it relates to business and society. Emphasizes research and the exploration of innovative ideas using interactive interface as a vehicle for communicating information.

Prerequisite/Restriction: ART 4410.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4440 - Type, Image, and Visual Continuity
3 credits

Examines the application of design theory and process to complex information organization systems. Focuses on relationships between typography, imagery, and visual continuity. Students design varied text-intensive publications and image-intensive poster projects.

Prerequisite/Restriction: ART 3400.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4450 - Portfolio Preparation
1-9 credits

Builds students’ job-seeking portfolios through lectures, critiques, and studio work. Existing projects are refined and gaps are filled in with new projects. All work must meet professional standards, with focus on quality and job-related subject matter.

Prerequisite/Restriction: ART 4410, ART 4420, ART 4440.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4460 - Advanced Computer Graphics Studio
1-9 credits

Independent research and development of advanced projects in the field of digital graphics.

Prerequisite/Restriction: ART 4440.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4470 - Special Topics in Graphic Design and Illustration
1-9 credits

Focuses on various issues in the field of visual communications design. Allows students to pursue production of digital and traditional projects related to the topic of the course. Content of this studio course varies from semester to semester.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4610 - Sculpture Projects
3 credits

Develops skills in a particular sculptural methodology. Investigates genres of public sculpture, installation, and advanced modeling, from traditional to contemporary. Stresses ideas based in a broader context of social and cultural issues.

Prerequisite/Restriction: ART 3610.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4620 - Sculpture Seminar
3 credits

Designed to focus on and challenge current assumptions in regard to contemporary issues in sculpture.

Prerequisite/Restriction: ART 4660.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4640 - Technology of Ceramic Art
3 credits

Selected topics in aesthetics and technology of ceramic art, including ceramic history, glaze chemistry and calculation, firing techniques, kiln design and construction, etc. Students enrolling for more than 3 credits arrange credit for directed studies in specific topics.

Prerequisite/Restriction: ART 3650, ART 3660.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4650 - Advanced Ceramic Studio
3-6 credits

Provides time, equipment, and facilities for advanced students to pursue directed studies leading to personal expression through ceramic media. To be repeated during at least four semesters by art majors with ceramics emphasis.

Prerequisite/Restriction: ART 3650, ART 3660.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4660 - Advanced Sculpture Studio
1-9 credits

Advanced directed study in specific technical, aesthetic, and/or conceptual issues in sculpture.

Prerequisite/Restriction: ART 4610.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 4810 - Digital Photography
3 credits

Continued exploration of digital photography, from computer to studio, with strong ties to traditional image making. Digital image processing and use of both software and hardware of digital photography. Study of ethical, artistic, and personal issues.

Prerequisite/Restriction: ART 3810.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ART 4820 - Nineteenth Century Photography Printing Processes
3 credits

Introduction to hand-made photographic emulsions invented and used in the nineteenth century. Production of gum prints, cyanotypes, photogravures, carbon prints,
and platinum prints. Explores unique visual characteristics of each process. Includes basic bookbinding.

Prerequisite/Restriction: ART 3810.

Semester(s) Traditionally Offered: Fall

ART 4830 - Independent Projects in Photography
1-9 credits

Student-initiated, independent projects in photography. Provides opportunity for students to gain technical proficiency and aesthetic creativity. Major emphasis on critiques and group discussions.

Prerequisite/Restriction: ART 3810 or permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4840 - Color Photography I
3 credits

Introduction to technical, conceptual, aesthetic, and digital explorations available with exposure and development of color positive and negative films. Investigation of color theory accompanied by production of correctly balanced color prints.

Prerequisite/Restriction: ART 3810.

Semester(s) Traditionally Offered: Fall

ART 4840 - Color Photography II
3 credits

Continuation of study with color materials including digital investigations. Explores alternative techniques and manipulative capabilities with color processes. Stresses individual pursuit of color print portfolio.

Prerequisite/Restriction: ART 4840.

Semester(s) Traditionally Offered: Spring

ART 4860 - Photographic Studio
3 credits

Exploration of the photographic studio, 4x5 view camera, the principles of applied lighting, and the communication of an idea through photography. Commercial, editorial, portrait, and digital photography directed toward professional portfolio preparation. All students required to have 4x5 camera.

Prerequisite/Restriction: ART 3810. Enrollment limited to BFA students only.

Semester(s) Traditionally Offered: Fall

ART 4870 - Photographic Portfolio
3 credits

Advanced photography class in preparation for life after graduation. Strong emphasis on work toward a personal professional portfolio (fine art and commercial) and written support documentation (resumes, cover letters, artist statement, etc.).

Prerequisite/Restriction: ART 4860. Enrollment limited to BFA students only.

Semester(s) Traditionally Offered: Spring

ART 4880 - Imaging Services
3 credits

Internship situation at a commercial photographic studio and lab facility.

Prerequisite/Restriction: ART 4810, ART 4840. Enrollment limited to BFA candidates only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4900 - Advanced Internship/Coop
1-9 credits

Internship/cooperative education work experience in art. For those students needing complexity and a more professional level of experience in the workplace.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ART 4910 - Senior BFA Exhibition
2 credits

Professional presentation and exhibition procedures. Required for all BFA candidates.

Prerequisite/Restriction: Approval of advisor.
Enrollment limited to senior standing and BFA candidates only.

Semester(s) Traditionally Offered: Spring

ART 4920 - Independent Projects
1-9 credits

Student-planned projects, executed through individual initiative and scheduled consultation with instructor.

Prerequisite/Restriction: ART 1020 or ART 1110; ART 1120 or ART 1150; and ART 1130 or ART 1160.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 4930 - Student Teaching at University Level
3 credits

Teaching methods and procedures for university-level classes, working directly with faculty in lower-division classes.

Prerequisite/Restriction: Approval of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 5500 - Student Teaching Seminar
2 credits

Capstone seminar focused upon student teaching issues, professional development, and principles of effective instruction, emphasizing a reflective methodology.

Prerequisite/Restriction: Level 1 and Level 2 completion, and student teaching placement.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

ART 5630 - Student Teaching in Secondary Schools
10 credits

Thirteen-week culminating practicum in which students assume full-time teaching responsibilities under direction of cooperating teachers in major and minor fields.

Prerequisite/Restriction: Level 1 and Level 2 completion, and student teaching placement.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6200 - Graduate Drawing and Painting Studio
1-9 credits

Emphasizes individual attainment of personal conviction or direction in painting.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6250 - Graduate Printmaking Studio
1-9 credits

Intensive individual production in advanced printmaking techniques.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6370 - Graduate Illustration Studio
3-9 credits

Advertising, Editorial, Fashion. Techniques in advertising illustration meeting the needs of client and his or her audience.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6400 - Graduate Graphic Design Studio
3-9 credits

Graphic design problems leading to understanding of major concepts in this area.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6640 - Technology of Ceramic Art
3 credits

Selected topics in aesthetics and technology of ceramic
art, including ceramic history, glaze chemistry and
calculation, firing techniques, kiln design and
construction, etc.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6650 - Graduate Ceramic Studio
3-9 credits

Arranged to provide time, equipment, and facilities for
graduate students to pursue directed studies. Tutorial
format with group critiques.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6660 - Graduate Sculpture Studio
3-9 credits

Advanced individual problems in various media and
technique.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6710 - Graduate Greek and Roman Art
3 credits

Origin and development of the art and architecture of
Crete, Mycenae, Greece, and the Roman world.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Spring

ART 6800 - Graduate Photography Studio
3-9 credits

Designed to cover several phases of photography, with
emphasis on composing what we see in an artistic
manner. Allows graduate students to further emphasize
their thesis project area of study.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6900 - Critical Theory and Contemporary Issues
3 credits

Deals with general topic of professional practice,
including art criticism and how contemporary work
relates to current social issues.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ART 6910 - Graduate Interdisciplinary Critique
3 credits

Focuses on current work of critique participants. Brings
disciplinary analysis to specific problem.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ART 6920 - Graduate Independent Projects in Art
1-9 credits

Advanced problems in emphasis, medium, and idiom of
student's choice. Student plans project and executes it
through individual initiative and scheduled consultation
with the instructor.

Prerequisite/Restriction: Permission of instructor and
graduate status.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6930 - Professional Practices
3 credits

Designed to familiarize graduate students with practical
experiences shared by all studio disciplines, including
researching opportunities, financing, and practicing a
post-graduate career in the studio. Explores preparation
of a portfolio, writing materials, and documentation of
studio works for individualized application strategies.
Details extensive research into employment possibilities,
such as teaching, gallery and museum positions, and
artist-in-residencies.
Prerequisite/Restriction: Graduate status with good standing.

Semester(s) Traditionally Offered: Fall

ART 6940 - Graduate Internship/Coop
1-9 credits

Internship/cooperative education work experience in art. Designed to allow graduate students to receive more complex and professional workplace experience.

Prerequisite/Restriction: Graduate status.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6970 - Research and Thesis
3 credits

Prerequisite/Restriction: Candidacy status.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ART 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Art History

ARTH 1270 - Native American Arts and Crafts
3 credits

Introduces prehistoric, historic, and contemporary Native American art forms and the underlying philosophical belief systems that gave rise to them. Goal is to provide basic principles for understanding and evaluating the artistic expression of Native Americans. Organized around geographical regions and cultural types.

Campus: USU Eastern only

ARTH 2710 - Survey of Western Art: Prehistoric to Medieval (BHU)
BHU Breadth Humanities
3 credits

Prehistoric art through the end of the Gothic era.

Semester(s) Traditionally Offered: Fall

ARTH 2720 - Survey of Western Art: Renaissance to Post-Modern (BHU)
BHU Breadth Humanities
3 credits

Renaissance through modern.

Semester(s) Traditionally Offered: Spring

ARTH 3110 - Ancient Near East (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Survey of history and civilization of ancient Mesopotamia, Egypt, and Israel, from prehistory to 500 B.C. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Cross-listed as: HIST 3110.

Semester(s) Traditionally Offered: Spring

ARTH 3820 - History of Early Photography
3 credits

Reviews early history of photography, beginning before the 1839 public announcement by Daguerre and continuing through the early twentieth century. Explores social change, invention, and the fulfillment of the artist’s desire to represent reality.

Semester(s) Traditionally Offered: Spring

ARTH 3830 - History of Contemporary Photography
3 credits

Reviews history of contemporary photography, beginning with the modernist movements of the 1920s and progressing through the aesthetic, technical, and communicative changes, up to today’s contemporary uses of the medium. Examines photography’s relationship to the historical changes in society, through its evolution as an art form, a commercial venue, and a visual record.
ARTH 4210 - Celtic Europe
3 credits

History of Celtic peoples in British Isles, Scandinavia, and continental Europe, from Neolithic times to the Norman Conquest in 1066. Computer intensive.

Cross-listed as: HIST 4210.

Semester(s) Traditionally Offered: Spring

ARTH 4510 - Islamic Visual Cultures (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Explores the emergence and development of Islamic visual cultures in Asia and around the Mediterranean between 622 and 1250.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 6510.

Semester(s) Traditionally Offered: Fall

ARTH 4610 - Greek and Roman Art (CI)
CI Communications Intensive
3 credits

Origin and development of art and architecture of Crete, Mycenae, Greece, and the Roman world.

Cross-listed as: ARTH 6610.

ARTH 4620 - Byzantine Art (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Focuses on the art and architecture of the Byzantine empire from late antiquity to the fifteenth century. In addition to including study of the visual arts, course incorporates readings in the history of religion and gender studies.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 6620.

Semester(s) Traditionally Offered: Spring

ARTH 4630 - Medieval Art (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Covers art and architecture in Europe between 450 and 1450, with an emphasis on cultural diversity and artistic variety. Study of the visual arts is complemented by readings in history and literature.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 6630.

Semester(s) Traditionally Offered: Fall

ARTH 4720 - Renaissance Art (CI)
CI Communications Intensive
3 credits

Development of European art and architecture from the thirteenth to the sixteenth century.

ARTH 4730 - Baroque and Rococo Art
3 credits

Development of painting, sculpture, and architecture in Europe from the late sixteenth through the eighteenth centuries.

ARTH 4740 - Nineteenth Century Art
3 credits

Painting and sculpture from Neoclassicism to Symbolism. Prerequisites: ARTH 2720 or consent of instructor, graduate status.

Prerequisite/Restriction: ARTH 2720.

ARTH 4750 - Twentieth Century Art
3 credits

History of painting, sculpture, and architecture from post-impressionists to the present.

Prerequisite/Restriction: ARTH 4610.

ARTH 4760 - American Art
3 credits

History of painting, sculpture, and architecture in America from colonial times to the present.
Semester(s) Traditionally Offered: Spring
ARTH 4790 - Art History Seminar and Special Problems
1-6 credits

Capstone course for art history emphasis area. Focuses on special topics in the discipline of art history. Allows students to develop advanced research projects related to the topic of the course. Covers critical theory and methods of art history research and writing.

Prerequisite/Restriction: Completion of at least one art history course at the 3000 level or above; or permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring
ARTH 4800 - Directed Reading and Research in Art History
1-3 credits

Directed reading, writing, and research in art history.

Prerequisite/Restriction: Permission of instructor.
Semester(s) Traditionally Offered: Fall, Spring
ARTH 4810 - Museum Internship
1-3 credits

Through this course, advanced art history students may arrange for credit in conjunction with a local museum. Supervisor at museum oversees student’s work. A faculty member in Art History oversees the written component, including portfolio, documentation, and research paper, depending on number of credits student is enrolled for.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring
ARTH 5710 - Gender Issues in Art
3 credits

Discussion of major issues and debates regarding gender in the visual arts. Topics include: revising the canon, representing gender, and theories of gender and spectatorship. Readings are discussed and applied to visual works of art.

Semester(s) Traditionally Offered: Spring
ARTH 5720 - Central European Art
3 credits

Discussion-based seminar covering the traditionally neglected theme of art in Central Europe. Emphasizes modern art, with the theme of national identity as a constant concern.

Semester(s) Traditionally Offered: Fall
ARTH 5730 - The Art Museum
3 credits

The history of museums and display practice has become a significant field in studies of contemporary art and art history. Topics covered include: cabinets of curiosity and historical origins, art museums and their publics, blockbusters, revisionism, architecture, museums, and memory.

ARTH 5740 - Art and Religion: Topics in Sacred Art
3 credits

Discussion-based course investigating relationships between religion and the arts. May focus on any period of history or region of the world, depending on scholarly interests of instructor.

Cross-listed as: RELS 5740.

Semester(s) Traditionally Offered: Spring alternate years
ARTH 6510 - Islamic Visual Cultures
3 credits

Explores the emergence and development of Islamic visual cultures in Asia and around the Mediterranean between 622 and 1250.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 4510.

Semester(s) Traditionally Offered: Spring
ARTH 6610 - Greek and Roman Art
3 credits

Origin and development of art and architecture of Crete,
Mycenae, Greece, and the Roman world.

Cross-listed as: ARTH 4610.

ARTH 6620 - Byzantine Art
3 credits

Focuses on the art and architecture of the Byzantine empire from late antiquity to the fifteenth century. In addition to including study of the visual arts, course incorporates readings in the history of religion and gender studies.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 4620.

Semester(s) Traditionally Offered: Fall

ARTH 6630 - Medieval Art (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Covers art and architecture in Europe between 450 and 1450, with an emphasis on cultural diversity and artistic variety. Study of the visual arts is complemented by readings in history and literature.

Prerequisite/Restriction: ARTH 2710 (recommended).

Cross-listed as: ARTH 4630.

Semester(s) Traditionally Offered: Spring

ARTH 6720 - Graduate Renaissance Art
3 credits

Development of European art and architecture from the thirteenth to the sixteenth centuries.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Fall

ARTH 6730 - Graduate Baroque and Rococo Art
3 credits

Development of art and architecture in Europe from the sixteenth to the eighteenth centuries.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Spring

ARTH 6740 - Graduate Nineteenth Century Art
3 credits

Painting and sculpture from Neoclassicism to Symbolism.

Prerequisite/Restriction: ARTH 2720 or permission of instructor and graduate status.

Semester(s) Traditionally Offered: Fall

ARTH 6750 - Graduate Twentieth Century Art
3 credits

History of painting, sculpture, and architecture from the post-impressionists to the present.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Spring

ARTH 6760 - Graduate American Art
3 credits

History of painting, sculpture, and architecture from the post-impressionists to the present.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Fall

ARTH 6770 - Graduate Gender Issues in Art
3 credits

Discussion of major issues and debates regarding gender in the visual arts. Topics include: revising the canon, representing gender, and theories of gender and spectatorship. Readings are discussed and applied to visual works of art.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Spring

ARTH 6790 - Art History Seminar and Special Problems
1-6 credits

Focuses on special topics in the discipline of art history. Allows students to develop advanced research projects related to the topic of the course. Covers critical theory and methods of art history research and writing.
Prerequisite/Restriction: Graduate status and permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ARTH 6900 - Graduate Seminar: Issues in Contemporary Art
3 credits

Sessions devoted to select issues prevalent in contemporary art, including the body, the real, text, gender, display, and conceptualism. Requires intensive verbal and written participation.

Semester(s) Traditionally Offered: Spring

Automotive Technology (USU Eastern)

AUTO 1000 - Introduction to Transportation Technology I
4 credits

First course in automotive or diesel technology. Students will gain needed skills in shop safety and other basic skills that will prepare students for specific automotive or diesel courses. Covers: using manual and information systems, precision measurement, tires and wheels, bearings, headlamp adjustment, oils and fluids, cleaning methods, gaskets and sealants, cooling systems and belts and hoses. This course can be articulated with high school automotive courses.

Cross-listed as: DSME 1000

Campus: USU Eastern only

AUTO 1010 - Introduction to Transportation Technology II
5 credits

Continuation of AUTO 1000. Students will continue to learn how to service, troubleshoot and repair modern automobiles.

Prerequisite/Restriction: AUTO 1000

Campus: USU Eastern only

AUTO 1100 - Engine Repair Theory
3 credits

Will study engine types, construction, operating principles, and performance. Related physics and mathematics are emphasized, detailed examination is made of lubricating systems, cooling systems, timing valves and bearings, as applied to gas and diesel-powered units.

Corequisite: AUTO 1105

Campus: USU Eastern only

AUTO 1105 - Engine Repair Lab
3 credits

Offers shop practice in engine disassembly and inspection, valve and seat reconditioning, and installation, checking tolerance, fitting parts, and engine reassembling. Students will complete all P-1 and P-2 NATEF tasks for the area of study.

Corequisite: AUTO 1100

Campus: USU Eastern only

AUTO 1200 - Automatic Transmission/Transaxle Theory
3 credits

Covers the principles of the automatic transmission system. Including gearsets, apply devices, power flow, hydraulic systems, torque converter, shift controls (manual, hydraulic and electronic) problem solving, repair procedures, and maintenance procedures. Physics and math will be included as part of system operation.

Prerequisite/Restriction: AUTO 1000

Corequisite: AUTO 1205

Campus: USU Eastern only

AUTO 1205 - Automatic Transmission/Transaxle Lab
2 credits

Students will complete checks necessary to analyze and diagnose automatic transmission systems. Lab assignments include major and minor repair procedures including disassembly, verifying clearances and specifications and reassembly to manufacturer specifications. Students will have the opportunity to complete all P-1 and P-2 NATEF tasks for this area of study. Completion of all tasks will require students to plan and use the time available wisely.
AUTO 1300 - Manual Drive Train and Axle Theory
3 credits

Studies the theory of manual transmission, trans axles, drive shafts, axle shafts, and differential assemblies. A study of four wheel drive and clutch components as used in manual drive trains will also be included.

Corequisite: AUTO 1305

AUTO 1305 - Manual Drive Train and Axle Lab
2 credits

Students will complete the removal, tear down, assembly, and installation procedure on a standard transmission, trans axle, differential assembly and clutch assembly. They will diagnose the need of required replacement parts on all manual drive train components. They will also complete all P-1 and P-2 NATEF requirements for this area of study.

Corequisite: AUTO 1300

AUTO 1400 - Suspension and Steering Theory
3 credits

Will study the theory of SRS Systems Manual, power steering systems, rack and pinion systems, McPherson Strut Suspension Systems, and short and long arm suspension systems. Will also study two and four wheel alignment procedures and steering geometry as well as tire wear problems. Students will also learn the theory behind tire and wheel vibrations. Where applicable, related math and physics will be taught.

Corequisite: AUTO 1405

AUTO 1405 - Suspension and Steering Lab
3 credits

Students will complete as many as four wheel alignment procedures and wheel balances as time permits, as well as all P-1 and P-2 NATEF tasks for this area of study.

Corequisite: AUTO 1400

AUTO 1500 - Brakes - Theory
3 credits

Covers the principles of the automotive braking system. Includes the study of ABS, manual and power brake system, covers disc brakes, and drum brakes as well as power assist units. Where applicable, related math and physics will be taught.

Corequisite: AUTO 1505

AUTO 1505 - Brakes - Lab
2 credits

Students will complete necessary pressure checks to diagnose and analyze brake problems and will complete major and minor brake work, which will include turning drums and rotors on a brake lathe. Students will complete all P-1 and P-2 NATEF tasks for this area of study.

Corequisite: AUTO 1500

AUTO 1550 - Professional Vocational Leadership (VICA)
1 credit

Supports and facilitates the goals and objectives of Vocational Industrial Clubs of America (VICA). Students will gain skills in the following areas: personal development, service, team building and leadership, workplace skills, and interview skills. Students may participate in regional, state and national competitions.

Repeatable for credit

AUTO 1600 - Electrical and Electronics I Theory
3 credits

Complete study of the automobile electrical system,
which includes battery performance and testing, starting system diagnosis and repair, charging system diagnosis and repair. Proper use of a multimeter including Hz, dwell, ms on time, duty cycle, min/max. Coursework also includes proper use of wiring diagram and electrical troubleshooting procedures.

Corequisite: AUTO 1605

Campus: USU Eastern only

AUTO 1605 - Electrical and Electronics I Lab
3 credits

Students will complete all hands on testing of components using diagnostic routines and troubleshooting procedures. Use of diagrams, meters, test procedures, and NATEF tasks will be required.

Corequisite: AUTO 1600

Campus: USU Eastern only

AUTO 1600 - Engine Performance I Theory
3 credits

Coursework will include fuel systems, ignition systems, air intake and exhaust systems. Will also cover basic engine diagnostics and test procedures.

Corequisite: AUTO 1805

Campus: USU Eastern only

AUTO 1805 - Engine Performance I Lab
3 credits

Students will run test procedures to diagnose basic engine problems. Lab requirements include fuel delivery systems, early fuel injection and ignition systems, and basic waveform diagnostics. Skill sets and procedures will include NATEF tasks as well as instructor assignments.

Corequisite: AUTO 1800

Campus: USU Eastern only

AUTO 1800 - Engine Performance I Theory
3 credits

Students will study the theory of heat transfer, pressure, and change of state necessary for heating and systems to operate. Will also cover vacuum and electronic controls, actuators and sensors. Emphasis will be placed on proper use of equipment, safety issues as well as diagnosis and repair.

Prerequisite/Restriction: AUTO 1000

Corequisite: AUTO 2705

Campus: USU Eastern only

AUTO 2705 - Heating and Air Conditioning Lab
2 credits

The use of equipment and job skills will be performed. Students will follow the national NATEF task list as well as instructor written tasks. Students will service heating and air conditioning systems. Procedures will cover diagnostic and test procedures, and removal and replacement of heater core, evaporators, condensers, pumps, valves and switches used in domestic and import vehicles.

Corequisite: AUTO 2700
AUTO 2800 - Engine Performance II Theory
3 credits
Includes the use of scanners, computer diagnostics, and proper use of the lab scope diagnostics for diagnostics.
Corequisite: AUTO 2805

AUTO 2805 - Engine Performance II Lab
2 credits
Will cover OBDII as well as IM240 test procedures. Students will learn about computer monitors, how to access and use available information in the PCM. Scanner use will include road trip and snapshot features. Lab scope use will require testing of both inputs and outputs and learning how to use the information available.
Corequisite: AUTO 2800

AUTO 2977 - Cooperative Education
1-3 credits
Provides supervised on-the-job experience for students in most aspects of automobile repair businesses. The student establishes learning objectives, hours to be worked, and a credit agreement with the instructor/coordinator at the beginning of the semester. Student and instructor/coordinator will meet periodically to review progress.
Prerequisite/Restriction: Permission of instructor

AUTO 2988 - Special Problems
1-3 credits
Individual work approved by the department instructor. Time and credit to be arranged.

AV 1100 - The Aviation Profession
1 credit
Covers attributes of aviation professional, career planning, and certification process.
Semester(s) Traditionally Offered: Fall, Spring

AV 1130 - Flight Principles
2 credits
Basic flight theory and physics of flight. Aircraft control systems related to flight. Ground handling and servicing of aircraft. Special lab fee.
Semester(s) Traditionally Offered: Fall

AV 1140 - Aircraft Components and Principles
2 credits
Materials and hardware, as well as nondestructive inspection applicable to aircraft. Plumbing methods, maintenance publications, and aircraft weight and balance control.
Semester(s) Traditionally Offered: Fall

AV 1170 - Aircraft Structures
3 credits
Accepted methods and repair for metal structures. Organic finishes and application techniques with laboratory applications and practical experience.
Semester(s) Traditionally Offered: Fall

AV 1240 - Aircraft Maintenance
3 credits
Maintenance, repair, alteration, and inspection of aircraft. Assembly and rigging of control systems with laboratory application of maintenance assembly and rigging procedures.
Prerequisite/Restriction: AV 1130, AV 1140.
AV 2100 - Aircraft Reciprocating Powerplants and Accessories
3 credits

Theory of operation, maintenance, and repair of reciprocating engines, propellers, exhaust systems, ignition systems, and fuel systems with laboratory applications of principles and components studied.

Corequisite: AV 2110.

Semester(s) Traditionally Offered: Fall
AV 2110 - Aircraft Reciprocating Powerplants and Accessories Lab
3 credits

Laboratory application of principles studied in AV 2100.

Corequisite: AV 2100.

Semester(s) Traditionally Offered: Fall
AV 2140 - Aircraft Turbine Powerplants and Maintenance Operations
3 credits

Theory of turbine powerplants, including turbine engine and components operation, hot section inspection, and servicing. Aircraft engine 100-hour inspections and maintenance, with laboratory applications of principles and components studied.

Corequisite: AV 2150.

Semester(s) Traditionally Offered: Spring
AV 2150 - Aircraft Turbine Powerplant Maintenance Operations Lab
3 credits

Theory of turbine powerplants, including turbine engine and components operation, hot section inspection, and servicing. Aircraft engine 100-hour inspections and maintenance, with laboratory applications of principles and components studied.

Corequisite: AV 2140.

AV 2170 - Aircraft Systems
2 credits

Theory and operation of aerospace environmental systems, communication, navigation and guidance systems, fuel and propellant systems, fire detection, and warning.

Semester(s) Traditionally Offered: Spring
AV 2180 - Aircraft Hydraulic and Pneumatic Systems
2 credits

Theory and operation of aircraft hydraulic, landing gear, and brake systems.

Semester(s) Traditionally Offered: Fall
AV 2190 - Aircraft Systems Lab
1 credit

Laboratory application of principles and components studied in AV 2170.

Corequisite: AV 2170.

Semester(s) Traditionally Offered: Spring
AV 2200 - Aircraft Hydraulics and Pneumatics Systems Lab
1 credit

Laboratory application of principles and components studied in AV 2180.

Corequisite: AV 2180.

Semester(s) Traditionally Offered: Fall
AV 2250 - Internship
1-4 credits

Planned supervised work experience in industry.

Prerequisite/Restriction: Approval of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
AV 2330 - Private Pilot Ground School
4 credits

Instructions in principles of flight, aircraft and engine operation, weather, navigation, radio aids to navigation, radio communications, and federal air regulations. Preparation for FAA Private Pilot written exam.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2350 - Private Pilot Certification
1 credit

FAA approved flight training program meeting all requirements for, and in the issuance of, the Private Pilot Airplane License.

Prerequisite/Restriction: AV 2330 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2420 - FAA Regulations, Records, and Certification
2 credits

Maintenance forms, records, and regulations releasing aircraft to airworthy status. Certification of maintenance technicians is also included.

Semester(s) Traditionally Offered: Spring

AV 2430 - Aircraft Electrical Systems and Components
2 credits

Aircraft electrical power generating systems. Theory of generation, alternators, regulation, and control systems with laboratory application of principles and systems studied.

Prerequisite/Restriction: ETE 2300.

Semester(s) Traditionally Offered: Spring

AV 2440 - Aircraft Electrical Systems Laboratory
2 credits

Laboratory application of principles and systems studied in AV 2430.

Prerequisite/Restriction: ETE 2300.

Corequisite: AV 2430.

AV 2510 - Intermediate Flight
1 credit

FAA approved flight training program that fulfills the cross country requirements for commercial and instrument ratings.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2520 - Instrument Pilot Ground School
4 credits

Ground school approved by FAA under Part 141 of the Federal Aviation Regulations. Designed to prepare students to pass the FAA oral and written examinations required for becoming instrument rated pilots.

Prerequisite/Restriction: AV 2330.

Semester(s) Traditionally Offered: Fall

AV 2540 - Instrument Pilot Certification I
1 credit

FAA approved flight training program introducing requirements for issuance of the Instrument Pilot Airplane Rating.

Prerequisite/Restriction: AV 2350, AV 2510; and AV 2520 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2550 - Instrument Pilot Certification II
1 credit

Continuation of AV 2540. Completes all requirements for issuance of the instrument pilot airplane rating.

Prerequisite/Restriction: AV 2540.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2620 - Commercial Pilot Ground School
2 credits

Commercial flight operations including performance,
cross country planning, advanced systems operations, complex airplanes, and flight maneuvers.

Prerequisite/Restriction: AV 2350, AV 2520, AV 2540, and AV 2550.

Semester(s) Traditionally Offered: Fall, Spring

AV 2660 - Commercial Pilot Certification
1 credit

Flight instruction to meet FAA requirements and completion of tests for certification.

Prerequisite/Restriction: AV 2540, AV 2550; and AV 2620 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2720 - CFI and CFII Ground School
3 credits

Designed to prepare students to pass the FAA oral and written examinations required for becoming certified flight and instrument instructors. Combines Certified Flight Instructor and Certified Flight Instructor-Instrument into one course.

Prerequisite/Restriction: AV 2620, AV 2660.

Semester(s) Traditionally Offered: Fall, Spring

AV 2740 - CFI Certification
1 credit

FAA-approved flight training program meeting all requirements for the issuance of the Certified Flight Instructor Airplane Rating.

Prerequisite/Restriction: AV 2620, AV 2660; and AV 2720 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2860 - CFII Certification
1 credit

FAA approved flight training program meeting all the requirements for, and issuance of, the Certified Flight Instructor, Airplane Instrument Rating.

Prerequisite/Restriction: AV 2620, AV 2660, AV 2720, and AV 2740.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 2880 - Multi-Engine Certification
1 credit

Flight training program designed to satisfy all requirements necessary to qualify a student for the FAA Multi-Engine Airplane Rating practical test.

Prerequisite/Restriction: AV 2660.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 3010 - National Airspace, Air Traffic Control, and Airport Administration
3 credits

Study of air traffic control system, airspace usage, and facilities. Airport planning, development, and management and their importance to the achievement of a successful airport operation. Management of publicly owned and operated airports, ranging in size from general aviation to the large air carrier hubs.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall

AV 3120 - Aviation Law
3 credits

Law as it affects aviation industry. Rights and responsibilities of individual organizations and the aviation community. Regulation and liability pertaining to design, manufacturing, operation, and maintenance of aircraft.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall

AV 3140 - Advanced Avionics Systems and Flight Simulation
3 credits

Advanced instrument simulation training.

Prerequisite/Restriction: AV 1100, AV 2540, and passing
scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 3280 - Advanced Turbine Engines
2 credits

Advanced study of turbo-jet propulsion. Comparative examination of jet, fan, turbo-prop, and turbo-shaft engines.

Prerequisite/Restriction: AV 1100, AV 2150, and passing scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall

AV 3410 - FCC License
1 credit

Prepares students to obtain the FCC General Radio Telephone Operator’s License. Covers electronic fundamentals through microwave radar and FCC rules and regulations.

Prerequisite/Restriction: ETE 3400.

Semester(s) Traditionally Offered: Spring

AV 3610 - AeroTechnology Design I
1 credit

Students select and plan a senior project. Requires written proposal, including technical description of the project and management plans.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Spring

AV 4200 - Composite Manufacturing Processes and Repair
3 credits

Composite manufacturing processes, composite materials survey, tooling design and fabrication, autoclave processes, vacuum bag techniques, filament winding processes, equipment requirements, materials cutting and storage, and composite materials testing.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.

Cross-listed as: AV 6200.

Semester(s) Traditionally Offered: Spring

AV 4250 - Internship
1-6 credits

Planned supervised work experience in industry.

Prerequisite/Restriction: Approval of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

AV 4280 - Airline Management
3 credits

Study of airline operations and their organizational structure. Examines functions of airline dispatcher, operations specialists, managers, and cockpit flight crew. Discussion of advanced flight planning, aircraft performance and loading considerations, and impact of weather on flight operations and routing priorities.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall

AV 4300 - Airline Marketing
3 credits

Introduces marketing thought, basic marketing principles and their application to airline business and operations, strategic planning, and decision-making.

Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. AV 4280 is highly recommended.

Semester(s) Traditionally Offered: Spring

AV 4480 - Certified Flight Instructor Practicum
2 credits

Under supervision of ground school instructor, students gain practical experience teaching ground school subjects.
Prerequisite/Restriction: AV 2740.

**AV 4490 - Human Factors in Aviation Safety**  
3 credits  
Examines major causative agent in aircraft accidents: the human being. Emphasizes psychological and physiological factors enhancing accident probability. Includes detailed analysis of ergonomics (human engineering) and its influence on safety.  
Prerequisite/Restriction: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Spring  

**AV 4610 - AeroTechnology Design II (CI)**  
CI Communications Intensive  
3 credits  
Execution and completion of a team or individual project. Requires design reviews and written reports.  
Prerequisite/Restriction: AV 1100, AV 3610, and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Fall  

**AV 4620 - AeroTechnology Design III (CI)**  
CI Communications Intensive  
3 credits  
Preparation and presentation of a team or individual project. Writing and speaking skills emphasized through technical reports and presentations.  
Prerequisite/Restriction: AV 1100, AV 4610, and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Spring  

**AV 4660 - Flight Senior Project (CI)**  
CI Communications Intensive  
3 credits  
Students select, plan, and execute an approved senior project. Writing and speaking skills emphasized through technical reports and presentations.  
Prerequisite/Restriction: AV 1100, AV 5400, and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Fall, Spring  

**AV 5400 - Regional Jet Ground School I**  
4 credits  
Introduction to a typical commercial jet aircraft in use by Regional Airlines. Course includes the following: Aircraft Systems, Standard Operating Procedures, and Flight Planning and Performance. Introduction to Airline Flight Operations in preparation for entry-level pilot positions with a regional airline.  
Prerequisite/Restriction: AV 1100, AV 2550, and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Spring  

**AV 5410 - Regional Jet Ground School II**  
4 credits  
Continuation of AV 5400.  
Prerequisite/Restriction: AV 1100, AV 2550, and passing scores on the Computer and Information Literacy (CIL) exams.  
Semester(s) Traditionally Offered: Fall  

**AV 5420 - Advanced Regional Jet Simulation**  
3 credits  
Flight training introduction to a typical commercial jet aircraft simulator in use by regional airlines. Intended for Professional Pilot aviation students actively pursuing a career in the airline industry.  
Prerequisite/Restriction: AV 1100, AV 5410, and passing scores on the Computer and Information Literacy (CIL) exam.  
Semester(s) Traditionally Offered: Spring  

**AV 6200 - Composite Manufacturing Processes and Repair**  
3 credits  
Composite manufacturing processes, composite
Cross-listed as: AV 4200.

Semester(s) Traditionally Offered: Spring

BENG 1880 - Engineering Quantification of Biological Processes
3 credits

Introduction to engineering practice of biological modeling and quantification of biological processes. Introduction to transport of heat and mass; bioenergetics, thermodynamics, and enzyme kinetics; metabolism; mechanical work processes; and modeling of biological systems. Recommended that students take BENG 1880 after taking calculus and biology.

Semester(s) Traditionally Offered: Spring

BENG 1890 - Introduction to Undergraduate Research Methods
1 credit

Introduction to research in biological engineering. Provides preview of research facilities and faculty programs within the Biological and Irrigation Engineering Department at USU. Teaches specific skills for searching scientific literature, database compilation, design of controlled experiments, lab tours, data analysis, and data presentation.

Semester(s) Traditionally Offered: Fall

BENG 2330 - Engineering Properties of Biological Materials
3 credits

Relationships between composition, structure, and properties of biological materials. Definition, measurement, and use of mechanical, thermal, electromagnetic, chemical, and biological properties in computation and design.

Prerequisite/Restriction: BIOL 1610, BENG 1880, CHEM 1210, CHEM 1215.

Semester(s) Traditionally Offered: Fall

BENG 2400 - Biological and Environmental Thermodynamics
3 credits


Prerequisite/Restriction: MATH 1220.

Semester(s) Traditionally Offered: Spring

BENG 3000 - Instrumentation for Biological Systems
3 credits

Fundamentals of measurement systems used in bioprocess, biomedical, agricultural, biological, and environmental applications. Selection and use of sensors, data acquisition systems, and elementary controls.

Prerequisite/Restriction: ENGR 2210 or ETE 2300.

Semester(s) Traditionally Offered: Spring

BENG 3200 - Introduction to Unit Operations in Biological Engineering
3 credits

Introduction to the fundamental unit operations required to process biological materials in bioprocessing, biomedical, and food engineering applications. Integration of biology and chemistry into biological engineering using basic concepts in heat, mass, and energy conservation and transport.

Prerequisite/Restriction: BENG 2330, CHEM 2300.

Semester(s) Traditionally Offered: Fall

BENG 3670 - Transport Phenomena in Biological and Environmental Systems
3 credits

Core course in both biological and environmental engineering. Students develop a detailed understanding of the principles, concepts, modes, and methods of calculating heat and mass transfer. Emphasis given to
contaminant and nutrient flux, along with their state transformations, in order for the biological or environmental engineer to evaluate options for production, clean-up, and control of bio-environmental systems.

Prerequisite/Restriction: Minimum grade of C- in BENG 2400 or MAE 2300 and CEE 3500 or MAE 3420

Cross-listed as: CEE 3670

Semester(s) Traditionally Offered: Spring

BENG 3870 - Biological Engineering Design I
1 credit

Students select and plan a senior design project. A project proposal, including a technical description of the project and management plans, is required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 4250 - Cooperative Practice
3 credits

Planned work experience in industry or government. Detailed program must be approved prior to registration. Written report required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 4880 - Biological Engineering Design II (CI)
CI Communications Intensive
3 credits

Execution and completion of a comprehensive senior design project. Design reviews and written reports are required.

Prerequisite/Restriction: BENG 3870.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 4890 - Biological Engineering Design III (CI)
CI Communications Intensive
3 credits

Preparation and presentation of the senior design project. The presentation will involve a professional standard report and an evaluation and critique by Biological Engineering students and faculty.

Prerequisite/Restriction: BENG 4880.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 4930 - Special Studies
1-4 credits

Independent or group study of biological and irrigation engineering subjects not covered in regular course offerings.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 5020 - Biological Systems Modeling and Controls
3 credits

Development of mathematical models to describe biological systems. Emphasizes use of analogic techniques for development and numerical methods for solution. Systems to be considered include biotransport, population biology, and cellular engineering.

Prerequisite/Restriction: MATH 2250.

Semester(s) Traditionally Offered: Fall

BENG 5600 - Downstream Processes in Biological Engineering
3 credits

Purification of proteins and other soluble/insoluble products from biochemical and/or chemical process streams. Emphasizes physical-chemical separation processes based on density, size, solubility, molecular interactions, etc.

Cross-listed as: BENG 6600

BENG 5610 - Food and Bioprocess Engineering
3 credits

Standardization and compounding of biomaterials and food products; preservation processing using heat, refrigeration, concentration, and dehydration. Basic unit operations in the bioprocessing industry.

Prerequisite/Restriction: BENG 3200.

Cross-listed as: BENG 6610 and NDFS 5610/NDFS 6610.

Semester(s) Traditionally Offered: Fall
BENG 5620 - Metabolic Engineering I
3 credits

Presents fundamental knowledge of cellular metabolic pathways, basic principles of metabolic engineering, metabolic flux analysis, regulation of metabolic pathways, metabolic engineering applications, and biosynthesis of primary/secondary metabolites. Students given opportunities to conduct experiments, as well as opportunities for hands-on gene cloning and work with genetic engineering techniques.

Cross-listed as: BENG 6620.

Semester(s) Traditionally Offered: Spring

BENG 5630 - Synthetic Biological Engineering
3 credits

Covers aspects of synthetic biological engineering, including overview of molecular biology and molecular cloning techniques, including PCR and analysis of nucleic acids and proteins. Introduces bioinformatics and practical use of these programs for biological design. Emphasizes principles of genetic engineering and use of standard biological parts and cellular engineering applications.

Cross-listed as: BENG 6630.

Semester(s) Traditionally Offered: Spring

BENG 5640 - Biofuels
3 credits

Biofuel potential as energy source, emphasis on biofuel impacts on the global environment and economy, and the role of biofuel towards sustainability. Evaluate factors driving biofuel policies and research. General discussion about fossil fuel, renewable energy forms, and availability of biomass feed stocks and their forms. Evaluate biofuel production from solid waste and wastewater systems.

Prerequisite/Restriction: Senior or Graduate student status, or permission of instructor

Cross-listed as: BENG 6640

Semester(s) Traditionally Offered: Fall

BENG 5650 - Biofuels Systems Design
3 credits

This course is designed to provide biofuels system design experience for students with an understanding of Biofuels—including but not limited to biodiesel, bioethanol and biogas. The students will have the opportunity to work with professional engineers and learn how to plan, and design production systems.

Prerequisite/Restriction: BENG 5640 or BENG 6640 or permission of instructor

Cross-listed as: BENG 6650

Semester(s) Traditionally Offered: Spring

BENG 5660 - Environmental Quality Analysis
3 credits

Familiarizes students with various methods used for analysis of chemical parameters in environmental samples (water, soil, and air). Provides students with skills enabling them to make proper selection/evaluation of analytical procedures and evaluate data generated.

Prerequisite/Restriction: CHEM 1210

Cross-listed as: BENG 6660, CEE 5610, CEE 6610

Semester(s) Traditionally Offered: Fall

BENG 5680 - Soil-based Waste Management
2 credits

Engineering management of wastes present in the vadose zone, including extraction, containment, and biological, chemical, and physical destruction technologies for sustainable agriculture and environmental quality. Aspects include engineering characterization, problem definition, treatment, and monitoring. Analysis and design emphasized through problems, examinations, and report writing.

Prerequisite/Restriction: Admission to Professional Engineering Program.

Cross-listed as: BENG 6680 and CEE 5680/CEE 6680.

Semester(s) Traditionally Offered: Spring
BENG 5810 - Biochemical Engineering
3 credits
Fundamentals of bioreactor design and bioengineering to produce biological commodities. Emphasizes mathematical models of microbial and enzymatic processes in environmental and industrial biotechnology.

Prerequisite/Restriction: BENG 3200 and BENG 3670/CEE 3670; or BENG 3670/CEE 3670, CEE 3610/PUBH 3610, and CEE 3640.

Cross-listed as: BENG 6810 and CEE 5810/CEE 6810.

Semester(s) Traditionally Offered: Fall

BENG 5830 - Management and Utilization of Biological Solids and Wastewater
3 credits
Focuses on production, management, and disposal of biosolids and wastewater generated in food processing and wastewater treatment. Emphasizes beneficial use of biosolids and wastewater for agricultural production, forest enhancement, and land reclamation.

Prerequisite/Restriction: BENG 3200, BENG 3670/CEE 3670, CEE 3610/PUBH 3610, CEE 3640.

Cross-listed as: BENG 6830 and CEE 5830/CEE 6830.

Semester(s) Traditionally Offered: Fall

BENG 5840 - Introduction to Biophotonics
3 credits
Engineering aspects of interactions of light with living systems. Design, testing, construction, and simulation for medical, bioprocess communication, data storage, and instrumentation applications. To receive graduate-level credit, students must complete a 10-page extra paper project addressing state-of-the-art research being conducted on a new biophotonics instrument, component, or device. Engineering aspects of the research development must be addressed (i.e., design; cost, including capital and O&M; reliability; and performance). Use and referencing of the current research literature is required.

Cross-listed as: BENG 6840.

BENG 5850 - Biomaterials Engineering
3 credits
Explores identification and modification of properties of natural and artificial biomaterials. Design of applications for by-product recovery and recycling, environmental, food processing, and biomedical industries. Commercialization of biomaterial feed stocks, biotechnology output, and bioprocessing by-products into traditional and alternative products.

Prerequisite/Restriction: BENG 2330.

Cross-listed as: BENG 6850.

Semester(s) Traditionally Offered: Fall

BENG 5890 - Tissue Engineering
3 credits
Introduction to fundamentals of tissue engineering. Investigation of engineering design strategies for artificial organs, as well as treatments for disease disorders of nerves, blood vessels, bones, cartilage, skin, and liver. Exploration of the use of stem cell gene therapy in tissue engineering.

Prerequisite/Restriction: BENG 2330 or permission of instructor.

Cross-listed as: BENG 6890.

Semester(s) Traditionally Offered: Spring

BENG 5910 - Introduction to Biosensors
3 credits
Principles of biologically based sensing elements and interfacing techniques. Design and analysis methods of biosensing and transducing components in bio-interface. Applications of biosensors and bioelectronics in biomedical, bioprocessing, and biomechanical engineering.

Prerequisite/Restriction: BENG 2330 or permission of instructor.

Cross-listed as: BENG 6910.
BENG 5930 - Special Studies
1-4 credits

Independent or group study of biological and irrigation engineering subjects not covered in regular course offerings.

Repeatable for credit.

BENG 6600 - Downstream Processes in Biological Engineering
3 credits

Purification of proteins and other soluble/insoluble products from biochemical and/or chemical process streams. Emphasizes physical-chemical separation processes based on density, size, solubility, molecular interactions, etc.

Cross-listed as: BENG 5600.

BENG 6610 - Food and Bioprocess Engineering
3 credits

Standardization and compounding of biomaterials and food products; preservation processing using heat, refrigeration, concentration, and dehydration. Basic unit operations in the bioprocessing industry.

Prerequisite/Restriction: BENG 3200.

Cross-listed as: BENG 5610 and NDFS 6610/NDFS 5610.

BENG 6620 - Metabolic Engineering I
3 credits

Presents fundamental knowledge of cellular metabolic pathways, basic principles of metabolic engineering, metabolic flux analysis, regulation of metabolic pathways, metabolic engineering applications, and biosynthesis of primary/secondary metabolites. Students given opportunities to conduct experiments, as well as opportunities for hands-on gene cloning and work with genetic engineering techniques.

Cross-listed as: BENG 5620.

BENG 6630 - Synthetic Biological Engineering
3 credits

Covers aspects of synthetic biological engineering, including overview of molecular biology and molecular cloning techniques, including PCR and analysis of nucleic acids and proteins. Introduces bioinformatics and practical use of these programs for biological design. Emphasizes principles of genetic engineering and use of standard biological parts and cellular engineering applications.

Cross-listed as: BENG 5630.

BENG 6640 - Biofuels
3 credits

Biofuel potential as energy source, emphasis on biofuel impacts on the global environment and economy, and the role of biofuel towards sustainability. Evaluate factors driving biofuel policies and research. General discussion about fossil fuel, renewable energy forms, and availability of biomass feed stocks and their forms. Evaluate biofuel production from solid waste and wastewater systems.

Prerequisite/Restriction: Senior or Graduate student status, or permission of instructor

Cross-listed as: BENG 5640

BENG 6650 - Biofuels Systems Design
3 credits

This course is designed to provide biofuels system design experience for students with an understanding of Biofuels-including but not limited to biodiesel, bioethanol and biogas. The students will have the opportunity to work with professional engineers and learn how to plan, and design production systems.

Prerequisite/Restriction: BENG 5640 or BENG 6640 or permission of instructor
BENG 6660 - Environmental Quality Analysis
3 credits

Familiarizes students with various methods used for analysis of chemical parameters in environmental samples (water, soil, and air). Provides students with skills enabling them to make proper selection/evaluation of analytical procedure and evaluate data generated.

Prerequisite/Restriction: CHEM 1210

Cross-listed as: BENG 5660, CEE 5610, CEE 6610

BENG 6680 - Soil-based Waste Management
2 credits

Engineering management of wastes present in the vadose zone, including extraction, containment, and biological, chemical, and physical destruction technologies for sustainable agriculture and environmental quality. Aspects include engineering characterization, problem definition, treatment, and monitoring. Analysis and design emphasized through problems, examinations, and report writing.

Prerequisite/Restriction: Admission to Professional Engineering Program.

Cross-listed as: BENG 5680 and CEE 6680/CEE 5680.

BENG 6810 - Biochemical Engineering
3 credits

Fundamentals of bioreactor design and bioengineering to produce biological commodities. Emphasizes mathematical models of microbial and enzymatic processes in environmental and industrial biotechnology.

Prerequisite/Restriction: BENG 3200 and BENG 3670/CEE 3670; or BENG 3670/CEE 3670, CEE 3610/PUBH 3610, and CEE 3640.

Cross-listed as: BENG 5810 and CEE 6810/CEE 5810.

BENG 6830 - Management and Utilization of Biological Solids and Wastewater
3 credits

Focuses on production, management, and disposal of biosolids and wastewater generated in food processing and wastewater treatment. Emphasizes beneficial use of biosolids and wastewater for agricultural production, forest enhancement, and land reclamation.

Prerequisite/Restriction: BENG 3200, BENG 3670/CEE 3670, CEE 3610/PUBH 3610, CEE 3640.

Cross-listed as: BENG 5830 and CEE 6830/CEE 5830.

BENG 6840 - Introduction to Biophotonics
3 credits

Engineering aspects of interactions of light with living systems. Design, testing, construction, and simulation for medical, bioprocess communication, data storage, and instrumentation applications. To receive graduate-level credit, students must complete a 10-page extra paper project addressing state-of-the-art research being conducted on a new biophotonics instrument, component, or device. Engineering aspects of the research development must be addressed (i.e., design; cost, including capital and O&M; reliability; and performance). Use and referencing of the current research literature is required.

Cross-listed as: BENG 5840.

BENG 6850 - Biomaterials Engineering
3 credits

Explores identification and modification of properties of natural and artificial biomaterials. Design of applications for by-product recovery and recycling, environmental, food processing, and biomedical industries. Commercialization of biomaterial feed stocks, biotechnology output, and bioprocessing by-products into traditional and alternative products.

Prerequisite/Restriction: BENG 2330.
Cross-listed as: BENG 5850.

Semester(s) Traditionally Offered: Fall

BENG 6860 - Research Orientation  
1 credit

Promotes familiarization with departmental and graduate school rules, procedures, and research.

Cross-listed as: BENG 7860.

Semester(s) Traditionally Offered: Fall

BENG 6870 - Research Planning  
1 credit

Tools and techniques for writing research proposals and giving presentations.

Cross-listed as: BENG 7870.

Semester(s) Traditionally Offered: Fall

BENG 6890 - Tissue Engineering  
3 credits

Introduction to fundamentals of tissue engineering.  
Investigation of engineering design strategies for artificial organs, as well as treatments for disease disorders of nerves, blood vessels, bones, cartilage, skin, and liver. Exploration of the use of stem cell gene therapy in tissue engineering.

Prerequisite/Restriction: Prerequisite: BENG 2330 or permission of instructor.

Cross-listed as: BENG 5890.

Semester(s) Traditionally Offered: Spring

BENG 6910 - Introduction to Biosensors  
credits

Principles of biologically based sensing elements and interfacing techniques. Design and analysis methods of biosensing and transducing components in bio-interface. Applications of biosensors and bioelectronics in biomedical, bioprocessing, and biomechanical engineering.

Prerequisite/Restriction: PhD enrollment.

Semester(s) Traditionally Offered: Spring

BENG 7600 - Advanced Research Topics  
3 credits

Study of advanced biological and engineering topics. Analysis of project scale water management issues, software development, crop modeling, advanced drainage systems, remote sensing, groundwater systems, and other topics taken from the research interests of the faculty.

Prerequisite/Restriction: PhD enrollment.

Semester(s) Traditionally Offered: Spring

BENG 7860 - Research Orientation  
1 credit

Promotes familiarization with departmental and graduate school rules, procedures, and research.
Cross-listed as: BENG 6860.

Semester(s) Traditionally Offered: Fall

BENG 7870 - Research Planning
1 credit

Tools and techniques for writing research proposals and giving presentations.

Cross-listed as: BENG 6870.

Semester(s) Traditionally Offered: Spring

BENG 7960 - Supervised Teaching
1-3 credits

Faculty members mentor PhD students in teaching and in understanding principles of pedagogy, including: (1) planning/organizing lectures and other teaching activities, (2) conducting teaching/instruction activities, (3) involvement in grading student work, and (4) assessment of activities by faculty mentor.

Semester(s) Traditionally Offered: Fall, Spring

BENG 7970 - Dissertation Research
1-10 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BENG 7990 - Continuing Graduate Advisement for PhD Students
1-9 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Biology

BIOL 1010 - Biology and the Citizen (BLS)
BLS Breadth Life Sciences
3 credits

Principles and methods of biology and how they impact the daily life and environment of the individual.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 1013 - Biology and the Citizen Lab
1 credit

Mixed virtual and actual laboratory experiences covering introductory topics in general biology for the non-science major. Designed to complement BIOL 1010 with emphasis on the scientific method. Includes actual experiences with living organisms, use of the microscope, field excursions and introduction to techniques used in the study of life.

Campus: USU Eastern only

Page: 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 .. Forward 10 -> 55

BIOL 1020 - Biological Discovery: A Lab Course
1 credit

Field and laboratory investigative exercises. Emphasizes observation, hypothesis formulation and testing, data analysis, and writing.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 1030 - Medical College Admissions Test (MCAT) Preparation
1 credit

Classroom instruction, tutorials, and readings to review material expected to be covered on the MCAT. Several Saturday practice exams are scheduled.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

BIOL 1040 - Dental Admissions Test (DAT) Preparation
1 credit

Classroom instruction, tutorials, and readings to review material expected to be covered on the DAT. Several Saturday practice exams are scheduled.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

BIOL 1300 - Of Maggots, Mites, and Men (BLS)
BLS Breadth Life Sciences
3 credits
Examines the natural history, evolution, and behavior of insects and spiders, as well as their impact on human individuals and societies.

Semester(s) Traditionally Offered: Fall

BIOL 1410 - General Botany (BLS)
BLS Breadth Life Sciences
3 credits

Principles of flowering plant and conifer biology, including molecular and cell biology, genetics, anatomy, physiology, diversity, systematics and ecology.

Campus: USU Eastern only

BIOL 1415 - General Botany Lab
1 credit

Lab course to accompany General Botany (BIOL 1410). Emphasizes application of scientific method in exploration of plant anatomy, physiology, diversity, and systematics through both observational and investigative laboratories.

Campus: USU Eastern only

BIOL 1500 - Anatomy and Physiology (BLS)
BLS Breadth Life Sciences
3 credits

Structure and function of major human organ systems. Not intended for Biology majors or for preparation for allied-health professions.

Campus: USU Eastern only

BIOL 1610 - Biology I
4 credits

Principles of cell biology, energetics, and genetics; plant structure, function, and development. Three lectures and one lab. To receive University Studies Breadth Life Sciences (BLS) credit, students must complete both BIOL 1610 and either BIOL 1620 or BIOL 3300. The BIOL 1610 and BIOL 3300 option for BLS credit is available only to students majoring in Biological Engineering or Environmental Engineering. The BIOL 1610 and BIOL 3060 option for BLS credit is available only to students in the Bioinformatics Emphasis of the Computer Science Major.

Semester(s) Traditionally Offered: Fall

BIOL 1620 - Biology II (BLS)
BLS Breadth Life Sciences
4 credits

Animal structure, function, and development; principles of evolution, ecology, and behavior. Three lectures and one lab.

Prerequisite/Restriction: BIOL 1610.

Semester(s) Traditionally Offered: Spring

BIOL 1750 - Topics in Biology
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 1800 - Herbarium Studies
1-2 credits

Provides classroom and practical experience in developing and maintaining an herbarium and extending its reach to the community. Students taking this course for one credit will complete classroom and laboratory work, while those earning two credits will in addition complete an herbarium research or service project.

Semester(s) Traditionally Offered: Fall

BIOL 2030 - Genetics
3 credits

Study of the mechanisms of inheritance and variation in microorganism, animals and plants. Emphasis will be given to classical genetics, DNA technologies, and the genetics populations and evolution. Recommended for science majors and preprofessional students in the health professions.

Prerequisite/Restriction: BIOL 1610 and CHEM 1010 and Intermediate Algebra competency

Corequisite: BIOL 2035

Campus: USU Eastern only

Semester(s) Traditionally Offered: Spring
BIOL 2035 - Genetics Lab
1 credit

Strictly a laboratory course with focus on conducting experiments in classical genetics, population genetics, and biotechnology. Students will complete a series of experiments and individual projects designed to acquaint them with the techniques employed in genetics research. Instructional methods employed will involve student use of the scientific method to design and conduct research experiments in genetics and DNA technologies. Laboratory design will allow students to progress from instructor directed and assisted experiment at the beginning of the semester to scientific problem solving using student designed experiments as students progress in their independence and problem solving skills.

Corequisite: BIOL 2030

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BIOL 2060 - Elementary Microbiology
4 credits

Biology and role of microorganisms in the world around us, with emphasis on their contributions to human disease. Not intended for biology majors.

Semester(s) Traditionally Offered: Fall

BIOL 2220 - General Ecology
3 credits

Study of the interrelationships among organisms and their environments, addressing where and how organisms live. Adaptation, population growth, species interactions, biodiversity, and ecosystem function are explored for a wide variety of organisms and ecosystems.

Prerequisite/Restriction: BIOL 1610 and BIOL 1620.

Cross-listed as: NR 2220

BIOL 2300 - Mushroom Identification
1 credit

Lecture course covering taxonomy, ecology, and importance of macro and micro fungi.

Cross-listed as: WILD 2300.

Semester(s) Traditionally Offered: Fall

BIOL 2310 - Mushroom Identification Lab
1-2 credits

Lab course acquainting students with basic fungal taxonomic groups. Students collect, preserve, and identify fungi they collect. Edible fungi prepared and eaten.

Cross-listed as: WILD 2310.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

BIOL 2320 - Human Anatomy
4 credits

Study of the human body, with emphasis on the structure of each of the body's essential organ systems. Three lectures, one lab. As preparation for this course, it is highly recommended that students have a background in basic biology and/or human biology.

Semester(s) Traditionally Offered: Spring, Summer

BIOL 2410 - Plants and Fungi in the Field
2 credits

Introduction to identification of green plants and macrofungi. Quantitative methods for field studies.

Prerequisite/Restriction: BIOL 1610.

Semester(s) Traditionally Offered: Summer

BIOL 2420 - Human Physiology
4 credits

Functioning of the human body, with emphasis upon major organ systems. Medical and athletic examples used to illustrate important concepts. Three lectures, one lab. As preparation for this course, it is highly recommended that students have a background in basic biology and/or human biology.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 2520 - Pathophysiology
3 credits
Promotes an understanding of disease and dysfunctional variations of normal health across the body.

Prerequisite/Restriction: BIOL 2320 and BIOL 2420, each with a minimum grade of C.

Campus: Course offered only at select branch campuses, not at the Logan campus.
Semester(s) Traditionally Offered: Fall, Spring

BIOL 2700 - Predental Orientation and Observation
3 credits

Introduces predental students to the dental curriculum and characteristics of the dental profession. Each student assigned to a practicing dentist for part of the course.

Prerequisite/Restriction: Permission of advisor.

Semester(s) Traditionally Offered: Spring

BIOL 2800 - Science Excursion
1 credit

Extended field trips to study the biology, geology, geography, and historical aspects of areas in Utah. Human-powered transportation is required for many trips. Included attendance of one or more pre- or post-trip lecture. Students with physical disabilities should contact the instructor before enrolling.

Campus: USU Eastern only

BIOL 2977 - Cooperative Education
1-3 credits

Life science majors may gain “hands-on” experience working with life science professionals in industry, business, or government. The work supervisor and life science instructor determine/approve the student’s curriculum and credit hours earned.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

BIOL 2988 - Special Problems
1-3 credits

Enables an individual to probe/study a biological topic of specific interest. The topic must be approved by a supervising instructor. Time and credit to be arranged.

Campus: USU Eastern only

BIOL 3000 - Discovering Utah’s Biodiversity (DSC)
DSC Depth Life and Physical Sciences
3 credits

Lecture and field course designed to identify and study local organisms and their role in ecosystems. Topics include ecology, local geology, adaptations to the local environment, and human impacts. Major components include writing, as well as the collection and presentation of data.

Prerequisite/Restriction: Completion of a University Studies Breadth Life Sciences (BLS) course.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 3010 - Evolution (DSC)
DSC/CI Depth Life and Physical Sciences
3 credits

Origins and evidence for the theory of biological evolution, and its significance for society and science.

Prerequisite/Restriction: University Studies Breadth Life Sciences (BLS) course.

Semester(s) Traditionally Offered: Spring

BIOL 3030 - Genetics and Society (DSC)
DSC Depth Life and Physical Sciences
3 credits

Course for nonscience majors. Addresses ethical, political, and social implications of advances in genetics and basic genetic principles, as well as contemporary issues in human genetics.

Prerequisite/Restriction: University Studies Breadth Life Sciences (BLS) course. Not open to biology majors or to those with credit in BIOL 3060.

Semester(s) Traditionally Offered: Spring

BIOL 3040 - Plants and Civilization (DSC)
DSC Depth Life and Physical Sciences
3 credits

Examines the importance of plants as food, shelter,
clothing, medicine, and drugs. Social and historical role of plants in aesthetics, religion, energy, biotechnology, human exploration, and migration.

Prerequisite/Restriction: University Studies Breadth Life Sciences (BLS) course.

Semester(s) Traditionally Offered: Fall

BIOL 3060 - Principles of Genetics (QI)
QI Quantitative Intensive
4 credits

Introduction to transmission, population, and molecular aspects of modern genetics.

Prerequisite/Restriction: BIOL 1610; CHEM 1110 or CHEM 1210. The BIOL 1610 and 3060 option for BLS credit is available only to students in the Bioinformatics Emphasis of the Computer Science Major.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 3065 - Genetics Laboratory
2 credits

Experimental approach to genetics using bacteria, fungi, plants, insects, and humans. Students will be introduced to several computer and laboratory techniques, and will design many of the experiments.

Prerequisite/Restriction: BIOL 3060 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, odd years

BIOL 3100 - Bioethics (CI)
CI Communications Intensive
3 credits

Discussion of current controversial ethical issues in medicine, animal rights, and environmental conservation.

Semester(s) Traditionally Offered: Spring

BIOL 3220 - Field Ecology (QI)
QI Quantitative Intensive
2 credits

Field trips and exercises to study ecological patterns and processes in terrestrial and aquatic habitats. Emphasis on hypothesis testing and collection and analysis of data from the field.

Prerequisite/Restriction: BIOL 2220 (may be taken concurrently); MATH 1100 or MATH 1210. Recommended: Course in statistics.

Semester(s) Traditionally Offered: Fall

BIOL 3300 - General Microbiology
4 credits

Biology, ecology, and diversity of microorganisms. Emphasis placed on bacteria, viruses, fungi, and protists, and their role in the environment. Two lectures, two labs.

Prerequisite/Restriction: BIOL 1610 (with a grade of C- or better); CHEM 1120 or CHEM 2300 or CHEM 2310 (may be taken concurrently). To receive University Studies Breadth Life Sciences (BLS) credit, students must complete both BIOL 1610 and BIOL 3300. The BIOL 1610 and BIOL 3300 option for BLS credit is available only to students majoring in Biological Engineering or Environmental Engineering.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 3500 - Plagues, Pests, and People (DSC)
DSC Depth Life and Physical Sciences
3 credits

Examines the biology and diversity of medically important insects and their associated diseases. Emphasizes the basic principles and concepts in medical, veterinary, and forensic entomology, as well as the historical impact of insect-borne diseases.

Prerequisite/Restriction: University Studies Breadth Life Sciences (BLS) course.

Semester(s) Traditionally Offered: Spring

BIOL 3760 - Independent Study
1-3 credits

Directed individual or group study. Not counted as Biology degree elective or toward the Biology, Biomath, or Public Health minors.

Prerequisite/Restriction: BIOL 1620.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
BIOL 4000 - Human Dissection
1 credit

Exposure and dissection of the human body, with an emphasis on bones, joints, muscles, and internal organs. One evening lab per week.

Prerequisite/Restriction: BIOL 2320.

Semester(s) Traditionally Offered: Fall

BIOL 4060 - Exploring Animal Behavior (CI)
CI Communications Intensive
3 credits

In-depth investigation into current topics. Students will generate hypotheses; design and complete experiments in field and lab; and prepare a written lab report, book review, and poster for public presentation. Two lectures, one lab.

Prerequisite/Restriction: BIOL 1620, BIOL 2220.

Semester(s) Traditionally Offered: Fall

BIOL 4230 - Applied Mathematics in Biology (QI)
QI Quantitative Intensive
3 credits

Formulation, analysis, and experimental tests of mathematical models in biology. Combines mathematics, computing, experimental design, and statistical analysis while applying the scientific method to biological systems. Lectures, recitations, and a laboratory.

Prerequisite/Restriction: Prerequisites: C- or better in BIOL 1620 and MATH 2250; or permission of instructor. Programming recommended.

Cross-listed as: MATH 4230.

Semester(s) Traditionally Offered: Spring

BIOL 4250 - Internship/Co-op
1-2 credits

Internship/cooperative work experience in biology or prehealth biology to allow student to gain a professional level of experience. Advisor's signature required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 4400 - Plant Physiology (QI)
QI Quantitative Intensive
4 credits

Introduction to plant metabolism, water relations, and growth.

Prerequisite/Restriction: BIOL 1620; MATH 1050 or higher.

Semester(s) Traditionally Offered: Spring

BIOL 4410 - Plant Structure
3 credits

Morphology, anatomy, and development of seed plants, with an emphasis on angiosperms. Two lectures and one lab.

Prerequisite/Restriction: BIOL 1610.

Semester(s) Traditionally Offered: Spring

BIOL 4421 - Plant Taxonomy I
2 credits

Laboratory course developing understanding of vascular plant structures by showing students how they are used in plant classification and identification, how they affect a plant’s adaptive ability, and how they differ among major plant groups. Students learn how to use identification keys and document vegetation studies. For 6000-level (graduate) credit, additional reading, recitation, writing, or lab work is required.

Prerequisite/Restriction: BIOL 1610.

Cross-listed as: BIOL 6421.

Semester(s) Traditionally Offered: Spring

BIOL 4422 - Plant Taxonomy II
1 credit

In this field and laboratory course, students develop ability to recognize the most common plant families in Western North America, to use principles of phylogenetic analysis in plant biology, and to understand how plant classification systems have changed over time. As an integral part of the course, students prepare a pre-semester, summer plant field collection. For 6000-level (graduate) credit, additional work is required.
Prerequisite/Restriction: BIOL 4421 and permission of instructor.

Cross-listed as: BIOL 6422.

Semester(s) Traditionally Offered: Fall

BIOL 4430 - Introduction to Plant Pathology
4 credits

Combined lecture-lab course emphasizing concepts in plant pathology. Symptoms and disease-causing organisms are described. Methods of control, the nature of epidemics, and disease prediction.

Prerequisite/Restriction: BIOL 1610.

Semester(s) Traditionally Offered: Spring

BIOL 4500 - Applied Entomology
3 credits

Fundamentals of insect biology, emphasizing species of economic importance. Principles and tactics of pest management. Laboratory includes survey of beneficial and harmful insects affecting humans and agriculture.

Prerequisite/Restriction: BIOL 1610 and BIOL 1620.

Semester(s) Traditionally Offered: Spring

BIOL 4600 - Advanced Human Physiology
5 credits

Advanced study of the functions of the human body, emphasizing major organ systems. Four lectures and one lab.

Prerequisite/Restriction: BIOL 1620 or BIOL 2320; or permission of instructor.

Semester(s) Traditionally Offered: Spring

BIOL 4710 - Teaching Internship
1 credit

Advanced undergraduates function as teaching interns under supervision of a faculty member. Only 1 credit may be counted toward Biology degree electives.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 4750 - Topics in Biology
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 5010 - Biogeography
3 credits

Distributions of plants and animals, including invertebrates, from terrestrial, freshwater, and marine systems, discussed from historical and ecological perspectives. Explores ecological patterns of body size, color, species density, home range, etc., as well as their causes.

Prerequisite/Restriction: BIOL 1620.

Cross-listed as: BIOL 6010.

Semester(s) Traditionally Offered: Spring

BIOL 5020 - Modeling Biological Systems (QI)
QI Quantitative Intensive
3 credits

Basic techniques of mathematical and computer simulation applied to a wide variety of biological systems: ecology, physiology, agroecosystems, and cell biology. Model formulation, validation, sensitivity and stability analysis, stochastic systems. Prerequ.

Prerequisite/Restriction: MATH 1220, STAT 3000, programming experience.

Cross-listed as: BIOL 6020.

Semester(s) Traditionally Offered: Fall

BIOL 5030 - Individual-Based Models in Ecology and Evolution
3 credits

Examines the nature, application, and student development of computer simulation models that follow the demographic fates and spatial movement of individual organisms in the context of ecological and evolutionary questions.
Prerequisite/Restriction: Programming experience (preferably in C), upper-division courses in statistics and ecology or evolution, and BIOL 5020/BIOL 6020 (recommended).

Cross-listed as: BIOL 6030.

Semester(s) Traditionally Offered: Spring

BIOL 5100 - Neurobiology
3 credits

Physiology, organization, and development of nervous systems. Examples taken from vertebrate and invertebrate systems. Special emphasis placed on cellular and molecular substrates of electrical excitability.

Prerequisite/Restriction: BIOL 1620; BIOL 2420; BIOL 5600, or BIOL 5620; CHEM 1220; and PHYS 2120 or PHYS 2220.

Cross-listed as: BIOL 6100.

Semester(s) Traditionally Offered: Fall

BIOL 5150 - Immunology
3 credits

Immune response in health and disease. Experimental approach to investigating immune function and abnormalities.

Prerequisite/Restriction: CHEM 1220; BIOL 3060; and BIOL 3300 or BIOL 5210.

Semester(s) Traditionally Offered: Spring

BIOL 5160 - Methods in Biotechnology: Cell Culture
3 credits

Techniques and fundamental knowledge for culturing mammalian and insect cells. Students will learn maintenance, growing, genetic engineering of cells, cytotoxicity, hybridoma creation, cloning, etc. Extensive laboratory experience is provided.

Cross-listed as: ADVS 5160 and NDFS 5160 and PSC 5160.

Semester(s) Traditionally Offered: Spring

BIOL 5190 - Molecular Genetics
3 credits

Molecular aspects of genetics, including DNA replication, structure, rearrangement, transposition, recombination, repair, genetic engineering, and gene expression. For 6000-level (graduate) credit, additional reading, recitation, and/or writing is required.

Prerequisite/Restriction: BIOL 3060; and CHEM 3700 or CHEM 5700.

Cross-listed as: BIOL 6190.

Semester(s) Traditionally Offered: Spring

BIOL 5210 - Cell Biology
3 credits

Examines the mechanisms of cell structure and function at the molecular level.

Prerequisite/Restriction: BIOL 1620; BIOL 3060; CHEM 2300 or CHEM 2320; CHEM 3700 or CHEM 5700 highly recommended.

Semester(s) Traditionally Offered: Fall

BIOL 5220 - Endocrine Aspects of Nutrition
2 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: CHEM 3700 or permission of instructor.

Cross-listed as: BIOL 6220 and ADVS 5220/ADVS 6220 and NDFS 5220/NDFS 6220.

Semester(s) Traditionally Offered: Fall

BIOL 5230 - Developmental Biology
3 credits

Examines the mechanisms of biological development using classical embryological and modern molecular and cellular approaches.
Prerequisite/Restriction: BIOL 3060 and BIOL 5210; CHEM 3700 and CHEM 5700 strongly recommended.

Semester(s) Traditionally Offered: Spring

BIOL 5250 - Evolutionary Biology (CI)
CI Communications Intensive
3 credits

Current topics in organic evolution from molecular to macroevolutionary scales.

Prerequisite/Restriction: BIOL 3060 or WILD 4880 or permission of instructor; BIOL 2220/NR 2220 recommended.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 5260 - Methods in Biotechnology: Molecular Cloning
3 credits

Laboratory-oriented course designed to teach molecular biology techniques such as DNA cloning, genetic probes, polymerase chain reaction, and DNA sequencing.

Prerequisite/Restriction: CHEM 3700 or CHEM 5710; or BIOL 3060; or permission of instructor.

Cross-listed as: ADVS 5260 and NDFS 5260 and PSC 5260.

Semester(s) Traditionally Offered: Fall

BIOL 5280 - Animal Molecular Biology
3 credits

Laboratory-based course designed to present the theory and provide an in-depth laboratory experience in RNA detection, differential gene expression analysis, real-time RT-PCR, protein detection and purification, 2-D gel electrophoresis, and microarrays.

Prerequisite/Restriction: ADVS 5260 or permission of instructor.

Cross-listed as: BIOL 6280 and ADVS 5280/ADVS 6280.

Semester(s) Traditionally Offered: Spring

BIOL 5300 - Microbial Physiology (QI)
QI Quantitative Intensive
4 credits

Lectures, discussions, and laboratory investigations concerning the physiology, structure, and metabolism of prokaryotic and eukaryotic microbes.

Prerequisite/Restriction: BIOL 3300, MATH 1210.

Semester(s) Traditionally Offered: Spring

BIOL 5310 - Soil Microbiology
3 credits

Ecology and diversity of microorganisms in soils. Emphasis on factors controlling microbial activity and the role of microorganisms in organic matter decomposition and nutrient cycling.

Prerequisite/Restriction: BIOL 1610, BIOL 1620; CHEM 2300 or CHEM 2310; PSC 3000.

Cross-listed as: PSC 5310.

Semester(s) Traditionally Offered: Fall

BIOL 5320 - Soil Microbiology Laboratory
2 credits

Techniques for measuring microbial activity and diversity in soils. Includes use of molecular and isotope methods.

Prerequisite/Restriction: Concurrent or prior enrollment in BIOL 5310/PSC 5310.

Cross-listed as: PSC 5320.

Semester(s) Traditionally Offered: Fall

BIOL 5330 - Virology
3 credits


Prerequisite/Restriction: BIOL 3060 and BIOL 3300.

Semester(s) Traditionally Offered: Spring
BIOL 5380 - Evolutionary Genetics  
4 credits  
Examines theoretical and applied aspects of genes in natural and artificial populations. Topics include molecular evolution, population, and quantitative genetics, with emphasis on the intersection of genetics with evolution, ecology, and conservation biology.  
Prerequisite/Restriction: BIOL 3060 or permission of instructor.  
Cross-listed as: BIOL 6380.  
Semester(s) Traditionally Offered: Fall  

BIOL 5400 - Environmental Toxicology  
3 credits  
Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.  
Cross-listed as: BIOL 6400 and ADVS 5400/ADVS 6400 and PUBH 5400/PUBH 6400.  
Semester(s) Traditionally Offered: Spring  

BIOL 5420 - Forest and Shade Tree Pathology (CI)  
CI Communications Intensive  
3 credits  
Nature, cause, and management of forest diseases.  
Cross-listed as: PSC 5420 and WILD 5420.  
Semester(s) Traditionally Offered: Fall  

BIOL 5440 - Plant Molecular, Cellular, and Developmental Biology I  
3 credits  
Examines background and recent advances. Students analyze and discuss structure, genome, molecular, development, and photosynthesis topics from a research perspective.  
Prerequisite/Restriction: BIOL 3060, BIOL 5210; CHEM 3700 or CHEM 5710.  
Cross-listed as: WATS 5550.  
Semester(s) Traditionally Offered: Spring  

BIOL 5450 - Plant Molecular, Cellular, and Developmental Biology II  
3 credits  
Examines background and recent advances. Students analyze and discuss cell wall, growth regulator, and environmental response topics from a research perspective.  
Prerequisite/Restriction: BIOL 3060, BIOL 5210; CHEM 3700 or CHEM 5710.  
Cross-listed as: BIOL 6450 and PSC 5450/PSC 6450.  
Semester(s) Traditionally Offered: Spring  

BIOL 5530 - Insect Systematics and Evolution  
3 credits  
Evolution, biology, and classification of insects, including basic external morphology. Emphasizes role of phylogeny in systematics and importance of systematics in comparative biology.  
Prerequisite/Restriction: BIOL 1620.  

BIOL 5550 - Freshwater Invertebrates  
3 credits  
Ecology, collection, and systematics of freshwater aquatic invertebrates. Focuses on insects, but also covers crustaceans, molluscs, and annelids. Several weekend field trips and a collection are required.  
Prerequisite/Restriction: One year of general biology or zoology, or permission of instructor.  
Cross-listed as: WATS 5550.  
Semester(s) Traditionally Offered: Fall  

BIOL 5560 - Ornithology  
3 credits  
Surveys evolution, systematics, physiology, anatomy, ecology, behavior, and identification of birds. Includes
lectures, laboratory and field exercises, field trips, and an independent project. Attendance required at one Saturday and one Friday-Sunday field trip.

Prerequisite/Restriction: BIOL 1620.

Semester(s) Traditionally Offered: Spring

BIOL 5570 - Herpetology
3 credits

Evolution, adaptations, distribution, natural history, behavior, and identification of amphibians and reptiles of the world, with special emphasis on North American species. Two lectures and one lab.

Prerequisite/Restriction: BIOL 1620.

Semester(s) Traditionally Offered: Fall

BIOL 5580 - Mammalogy
3 credits

Evolution, adaptations, distribution, natural history, behavior, and identification of mammals of the world, with special emphasis on North American species. Two lectures and one lab.

Prerequisite/Restriction: BIOL 1620.

Semester(s) Traditionally Offered: Fall

BIOL 5590 - Animal Community Ecology
4 credits

Concepts and controversies in modern community ecology emphasizing aquatic and terrestrial animals. Covers the community concept, diversity and stability, null models, relative importance of competition and predation, food webs, disturbance, metapopulations, biogeography, and new directions.

Prerequisite/Restriction: BIOL 2220, STAT 3000.

Cross-listed as: BIOL 6590.

Semester(s) Traditionally Offered: Fall

BIOL 5600 - Comparative Animal Physiology
3 credits

Principles and mechanisms of physiology in vertebrate and invertebrate animals. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 1620 and one of CHEM 1110, CHEM 1120, and CHEM 1220; or permission of instructor.

Cross-listed as: BIOL 6600.

Semester(s) Traditionally Offered: Fall

BIOL 5610 - Animal Physiology Laboratory (QI)
QI Quantitative Intensive
2 credits

Laboratory exercises designed to explore principles of animal physiology, using computer simulations, tissue models, and animal preparations. Emphasis placed on hypothesis design and data interpretation.

Prerequisite/Restriction: BIOL 2420, BIOL 5600, or BIOL 5620 (any prerequisite may be taken concurrently).

Semester(s) Traditionally Offered: Fall

BIOL 5620 - Medical Physiology
3 credits

Cardiovascular, respiratory, endocrine, gastrointestinal, excretory, and nervous system function in the mammalian body. Emphasis on molecular mechanisms. Examples from mammalian diseases used to illustrate key concepts.

Prerequisite/Restriction: BIOL 1620; BIOL 2420 or BIOL 5600; CHEM 1120 or CHEM 3700 (may be taken concurrently) or CHEM 5710.

Semester(s) Traditionally Offered: Fall

BIOL 5630 - Endocrinology
3 credits

Molecular, cellular and physiological aspects of the endocrine system in vertebrates, presented with a species comparative approach. Clinical aspects and diseases associated with dysfunction of the endocrine system.

Prerequisite/Restriction: BIOL 1620
BIOL 5690 - Medical Histology
3 credits
Microscopic anatomy and physiology of normal domestic animal's cells, tissues, organs, and system.
Prerequisite/Restriction: ADVS 2200 or BIOL 1620; or permission of instructor.
Cross-listed as: BIOL 6690 and ADVS 5690/ADVS 6690.

BIOL 5700 - General Pathology (CI)
CI Communications Intensive
3 credits
Introduction to the principles of gross, microscopic, and physiological changes associated with diseases of domestic animals.
Prerequisite/Restriction: BIOL 5690/BIOL 6690 or ADVS 5690/ADVS 6690.
Cross-listed as: BIOL 6700 and ADVS 5700/ADVS 6700.

BIOL 5800 - Undergraduate Research
1-3 credits
Faculty-directed research in biology. Maximum of 3 credits of BIOL 5800 are acceptable toward Biology degree elective requirements.
Prerequisite/Restriction: BIOL 1620 and permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 5810 - Bachelor's Thesis
3 credits
Preparation of a written thesis, based upon individual investigation, under the supervision of faculty.
Prerequisite/Restriction: 3 credits of BIOL 5800 (or concurrent enrollment) and permission of instructor.

BIOL 6010 - Biogeography
3 credits
Distributions of plants and animals, including invertebrates, from terrestrial, freshwater, and marine systems, discussed from historical and ecological perspectives. Explores ecological patterns of body size, color, species density, home range, etc., as well as their causes.
Prerequisite/Restriction: BIOL 1620.
Cross-listed as: BIOL 5010.

BIOL 6020 - Modeling Biological Systems
3 credits
Basic techniques of mathematical and computer simulation applied to a wide variety of biological systems: ecology, physiology, agroecosystems, and cell biology. Model formulation, validation, sensitivity and stability analysis, stochastic systems.
Prerequisite/Restriction: MATH 1220, STAT 3000, programming experience.
Cross-listed as: BIOL 5020.

BIOL 6030 - Individual-Based Models in Ecology and Evolution
3 credits
Examines the nature, application, and student development of computer simulation models that follow the demographic fates and spatial movement of
individual organisms in the context of ecological and evolutionary questions.

Prerequisite/Restriction: Recommended prior to enrollment: Programming experience (preferably in C), upper-division courses in statistics and ecology or evolution, and BIOL 6020/BIOL 5020.

Cross-listed as: BIOL 5030.

Semester(s) Traditionally Offered: Spring

BIOL 6100 - Neurobiology
3 credits

Physiology, organization, and development of nervous systems. Examples taken from vertebrate and invertebrate systems. Special emphasis placed on cellular and molecular substrates of electrical excitability. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 1620; BIOL 2420, BIOL 5600, or BIOL 5620; CHEM 1220; and PHYS 2120 or PHYS 2220.

Cross-listed as: BIOL 5100.

Semester(s) Traditionally Offered: Fall

BIOL 6190 - Molecular Genetics
3 credits

Molecular aspects of genetics, including DNA replication, structure, rearrangement, transposition, recombination, repair, genetic engineering, and gene expression. For 6000-level (graduate) credit, additional reading, recitation, and/or writing is required.

Prerequisite/Restriction: BIOL 3060; and CHEM 3700 or CHEM 5700.

Cross-listed as: BIOL 5190.

Semester(s) Traditionally Offered: Spring

BIOL 6200 - Biogeochemistry of Terrestrial Ecosystems
3 credits

Inputs, outputs, and cycling patterns of major nutrients. Emphasizes mechanisms for transformations, factors influencing process rates, and the impacts of management and global change on nutrient cycles and air and water quality.

Prerequisite/Restriction: BIOL 1620, PSC 3000, CHEM 2300 or CHEM 2310, or permission of instructor.

Cross-listed as: PSC 6200 and WILD 6200.

Semester(s) Traditionally Offered: Fall

BIOL 6210 - Advanced Cell Biology
3 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: BIOL 3060 and BIOL 5210.

Semester(s) Traditionally Offered: Spring

BIOL 6220 - Endocrine Aspects of Nutrition
2 credits

Study of how interactions between vertebrate physiology and behavior shape vertebrate biology in an ecological context. Course takes a case studies approach to current research topics and involves in-class discussions, an oral presentation and writing.

Prerequisite/Restriction: Graduate status in Biology or life sciences-related area, or permission of instructor

Semester(s) Traditionally Offered: Fall
BIOL 6250 - Graduate Internship
1-6 credits

Work experience, for which the student is paid, tied to academics in a graduate student's field of study.

Prerequisite/Restriction: Permission of department head prior to enrollment.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 6260 - Behavioral Ecology
3 credits

Focuses on current topics, emphasizing critical reading and thinking skills. Includes lectures, student presentations, and discussions of primary literature.

Semester(s) Traditionally Offered: Spring

BIOL 6280 - Animal Molecular Biology
3 credits

Laboratory-based course designed to present the theory and provide an in-depth laboratory experience in RNA detection, differential gene expression analysis, real-time RT-PCR, protein detection and purification, 2-D gel electrophoresis, and microarrays.

Prerequisite/Restriction: ADVS 5260 or permission of instructor.

Cross-listed as: BIOL 5280 and ADVS 6280/ADVS 5280.

Semester(s) Traditionally Offered: Spring

BIOL 6380 - Evolutionary Genetics
4 credits

Examines theoretical and applied aspects of genes in natural and artificial populations. Topics include molecular evolution, population, and quantitative genetics, with emphasis on the intersection of genetics with evolution, ecology, and conservation biology.

Prerequisite/Restriction: BIOL 3060 or permission of instructor.

Cross-listed as: BIOL 5380.

Semester(s) Traditionally Offered: Fall

BIOL 6400 - Environmental Toxicology
3 credits

Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.

Cross-listed as: BIOL 5400 and ADVS 6400/ADVS 5400 and PUBH 6400/PUBH 5400.

Semester(s) Traditionally Offered: Spring

BIOL 6421 - Plant Taxonomy I
2 credits

Laboratory course developing understanding of vascular plant structures by showing students how they are used in plant classification and identification, how they affect a plant's adaptive ability, and how they differ among major plant groups. Students learn how to use identification keys and document vegetation studies. For 6000-level (graduate) credit, additional reading, recitation, writing, or lab work is required.

Prerequisite/Restriction: BIOL 1610.

Cross-listed as: BIOL 4421.

Semester(s) Traditionally Offered: Spring

BIOL 6422 - Plant Taxonomy II
1 credit

In this field and laboratory course, students develop ability to recognize the most common plant families in Western North America, to use principles of phylogenetic analysis in plant biology, and to understand how plant classification systems have changed over time. As an integral part of the course, students prepare a pre-semester, summer plant field collection. For 6000-level (graduate) credit, additional work is required.

Prerequisite/Restriction: BIOL 4421 and permission of
BIOL 6440 - Plant Molecular, Cellular and Developmental Biology I
3 credits

Examines background and recent advances. Students analyze and discuss structure, genome, molecular, development, and photosynthesis topics from a research perspective. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 3060, BIOL 5210; CHEM 3700 or CHEM 5710.

Cross-listed as: BIOL 5440 and PSC 6440/PSC 5440.

Semester(s) Traditionally Offered: Spring

BIOL 6450 - Plant Molecular, Cellular and Developmental Biology II
3 credits

Examines background and recent advances. Students analyze and discuss cell wall, growth regulator, and environmental response topics from a research perspective. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 3060, BIOL 5210, CHEM 3700 or CHEM 5710.

Cross-listed as: BIOL 5450 and PSC 6450/PSC 5450.

BIOL 6510 - Insect-Plant Interactions
2 credits

Ecology, evolution, and physiology of the interactions between insects and plants, including herbivory, defenses/compensations of plants to insect attack, pollination, and other mutualisms.

Semester(s) Traditionally Offered: Fall

BIOL 6520 - Ecological Vertebrate Physiology
3 credits

Physiological responses and adaptations of vertebrates to physical, chemical, and biological environments. Bioenergetics at the species level. Three lectures.

Prerequisite/Restriction: One course in physiology and one course in ecology.

Semester(s) Traditionally Offered: Fall

BIOL 6590 - Animal Community Ecology
4 credits

Concepts and controversies in modern community ecology emphasizing aquatic and terrestrial animals. Covers the community concept, diversity and stability, null models, relative importance of competition and predation, food webs, disturbance, metapopulations, biogeography, and new directions. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 2220, STAT 3000.

Cross-listed as: BIOL 5590.

Semester(s) Traditionally Offered: Fall

BIOL 6600 - Comparative Animal Physiology
3 credits

Principles and mechanisms of physiology in vertebrate and invertebrate animals. For graduate (6000-level) credit, additional reading, recitation, and/or writing will be required.

Prerequisite/Restriction: BIOL 1620 and one of CHEM 1110, CHEM 1120, and CHEM 1220; or permission of instructor.

Cross-listed as: BIOL 5600.

Semester(s) Traditionally Offered: Fall

BIOL 6630 - Endocrinology
3 credits

Molecular, cellular and physiological aspects of the endocrine system in vertebrates, presented with a species comparative approach. Clinical aspects and diseases associated with dysfunction of the endocrine system.
Prerequisite/Restriction: BIOL 1620

Cross-listed as: ADVS 5630, ADVS 6630, BIOL 5630

Semester(s) Traditionally Offered: Spring, Odd Years

BIOL 6690 - Medical Histology
3 credits

Microscopic anatomy and physiology of normal domestic animal’s cells, tissues, organs, and system.

Prerequisite/Restriction: ADVS 2200 or BIOL 1620; or permission of instructor.

Cross-listed as: BIOL 5690 and ADVS 6690/ADVS 5690.

Semester(s) Traditionally Offered: Fall

BIOL 6700 - General Pathology
3 credits

Introduction to the principles of gross, microscopic, and physiological changes associated with diseases of domestic animals.

Prerequisite/Restriction: BIOL 6690/BIOL 5690/ADVS 6690/ADVS 5690.

Cross-listed as: BIOL 5700 and ADVS 6700/ADVS 5700.

Semester(s) Traditionally Offered: Spring

BIOL 6740 - Cellular Communication by Small Molecules and Proteins
3 credits

Using post-translational modifications, small molecules, and protein motifs in cellular communication. Variances in the communication systems related to disease state and/or cell stress and therapeutic strategies to manipulate the communication systems.

Prerequisite/Restriction: CHEM 5700 or CHEM 6700 or permission of instructor.

Cross-listed as: CHEM 6740.

Semester(s) Traditionally Offered: Spring

BIOL 6750 - Topics in Biology
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 6800 - Biology Seminar
1 credit

Format for general graduate-level seminar topics.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

BIOL 6820 - Plant Biology/Pathology Seminar
1 credit

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 6830 - Entomology Seminar
1 credit

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 6840 - Zoology Seminar
1 credit

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

BIOL 6850 - Microbiology Seminar
1 credit

Cross-listed as: BIOL 5850.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 6870 - Ecology Seminar
1 credit

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures.
Cross-listed as: ENVS 6870, PSC 6870, WATS 6870, and WILD 6870.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

BIOL 6910 - Special Problems
1-3 credits

Individual or group study under faculty guidance.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 6960 - Graduate General Ecology
General concepts, history, and issues in all major areas of the science of ecology including: environmental biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic environments.

Cross-listed as: ENVS 6960, PSC 6960, WATS 6960, and WILD 6960.

Semester(s) Traditionally Offered: Fall

BIOL 6970 - Thesis Research
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 6990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 7750 - Topics in Biology
1-3 credits

Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 7970 - Dissertation Research
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

BIOL 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Building Construction and Construction Management (USU Eastern)

BCCM 1010 - Building Construction Safety
1 credit

A study of OSHA and common safety rules for use of hand tools, power tools, ladders, scaffolds, etc. Also covers concepts of waste disposal and maintaining a clean working environment.

Campus: USU Eastern only

BCCM 1150 - Basic Print Reading
2 credits

For anyone who needs to learn how to interpret and understand the drawings used in the construction industry. Prints provide a common set of information for all parties involved in the design and construction of a building. Theory of projection architectural symbols, materials, and construction methods are covered. Information taken from plot plans, foundation plans, floor plans, elevation drawings, details, and specifications will be stressed.

Campus: USU Eastern only

BCCM 2010 - Framing and Concrete Theory
3 credits

Theory of framing layout techniques, including floors, stairways, and roofs in typical residential construction. Principles and methods of concrete construction including forming, placement, finishing, and testing of concrete footings, walls, and slabs in residential and commercial construction.

Campus: USU Eastern only
BCCM 2030 - Framing Lab
3 credits
Application of techniques in floor, wall, roof, and stair layout and framing. These techniques are taught through foundation to roof on-site construction of a full-size project home.
Campus: USU Eastern only

BCCM 2080 - Concrete Construction Lab
3 credits
Experience in forming, placing, finishing, and placing of concrete in actual construction settings including footings, walls, and slabs.
Campus: USU Eastern only

BCCM 2090 - Concrete II
3 credits
Campus: USU Eastern only

BCCM 2100 - Finish Interior and Exterior Theory
3 credits
Covers the study of materials, energy and heat loss, and methods used in interior construction. Includes instruction on insulation, drywall, interior finish, handrails, moldings, and cabinets.
Campus: USU Eastern only

BCCM 2125 - Basic Cabinet Making and Millwork
3 credits
Students will become familiar with the advanced set-ups and operations of the tools and machines used in cabinetmaking and millwork. Students will explore several different types of construction methods and styles, e.g. frace frame, European, casework, raised panel door, decorative use of molding and trim, and stains and finishes. Students will be introduced to the role of cabinetmaking in the world today, as well as participating in the design, construction, and finish of their own project.
Campus: USU Eastern only

BCCM 2130 - Finish Lab
3 credits
Application of insulation, wallboard, interior finish, handrails, moldings, and cabinets by on-site construction.
Campus: USU Eastern only

BCCM 2170 - Exterior Construction Lab
3 credits
Practice and application of methods and materials of exterior construction.
Campus: USU Eastern only

BCCM 2200 - Construction Management
3 credits
Covers the theory of project organization, contracts, change orders, records, and project supervision.
Campus: USU Eastern only

BCCM 2230 - Construction Management Lab I
3 credits
Practice and application of construction management techniques through organization and supervision of layout and framing in an on-site construction setting.
Campus: USU Eastern only

BCCM 2240 - Construction Estimating
3 credits
Principles of construction estimating including take-offs, labor costs, equipment costs, overhead expenses and markups. Limited exposure to computer applications in construction estimating may also be taught.
Campus: USU Eastern only

BCCM 2250 - Construction Management Lab II
3 credits
Practice and application of construction management techniques through organization and supervision of interior construction.
Campus: USU Eastern only

BCCM 2270 - Building Codes and Inspections
2 credits
Covers the nature and use of building codes and zoning ordinances. Also covers inspection procedures used to enforce building codes and ordinances.

Campus: USU Eastern only

**BCCM 2500 - Specialty Construction Lab**
2 credits

Practice and application methods and materials in exterior construction for second year building construction students.

Campus: USU Eastern only

**BCCM 2600 - Contractor Preparation**
2 credits

Review of the construction industry, business ownership, company organization, bidding procedures, contracts, bonds and insurance, labor laws, lien laws, and cost management.

Campus: USU Eastern only

**BCCM 2977 - Cooperative Education**
1-3 credit

Provides supervised on-the-job experience for students in most aspects of building construction and construction management. The student establishes learning objectives, hours to be worked, and a credit agreement with the instructor at the beginning of the semester.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

**BCCM 2988 - Special Problems**
1-3 credits

Individual work approved by instructor. May prepare for State Examinations. Time and credit to be arranged.

Campus: USU Eastern only

**BUS 1000 - Business by Design**
3 credits

Intended to foster lively dialogue around the foundational theories and practices designed to serve the mission, vision, and purpose of highly effective organizations. Organizing frame for the course primarily based on historical and contemporary readings in business and the social sciences. As students are exposed to theory and practice and encouraged to read broadly, course fosters a commitment to lifelong learning.

Semester(s) Traditionally Offered: Fall

**BUS 2000 - Foundations for International Summer Programs**
3 credits

Provides context for each of the Huntsman School's summer programs and provides a basis for understanding differences in the business and economic environments of program countries. Topics covered include political, historical, economic, and cultural factors that shape the social and business environment of the countries to be visited; relations between program countries; and relations between program countries and the United States.

Prerequisite/Restriction: Admission to Huntsman School Summer Program.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

**BUS 2100 - Business, Science, and Global Society**
3 credits

Explores the interface of business and science, particularly the application of principles of life science to addressing contemporary challenges of global society. Examines scientific bases of issues related to growing and evolving communities, as well as how business can play a role in enacting positive change.

Semester(s) Traditionally Offered: Summer

**BUS 2250 - Introductory Internship**
1-9 credits

Introductory-level experience in a career-related position approved by the Cooperative Education Office. One credit for every 75 hours of internship experience, with a maximum of 9 credits. A maximum of 12 credits of BUS 2250 and BUS 4250 combined can be counted toward the minimum degree requirements for the Huntsman School of Business.
Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BUS 3010 - Intermediate Accounting I
3 credits

Study at the intermediate level in accounting theory and practice relating to financial reporting of assets.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; grade of B- or better in ACCT 2010; completion of entrance exam (www.huntsman.usu.edu/acct/)

BUS 3020 - Intermediate Accounting II
3 credits

Study at the intermediate level in accounting theory and practice relating to financial reporting of liabilities and equities.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; BUS 3010.

BUS 3100 - Survey of Management Information Systems (DSS)
DSS Depth Social Sciences
3 credits

Survey of business uses of information technology, emphasizing vocabulary, concepts, career emphases, and systems components. Includes general systems theory and business functional information subsystems (e.g., accounting, management, finance, and marketing).

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; OSS 1400 or equivalent.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BUS 3110 - Management Fundamentals (DSS)
DSS Depth Social Sciences
3 credits

Study of the role of management, leadership theory, defining goals, organizing work, and managing performance.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher.

BUS 3150 - Discussion With Business Leaders
1 credit

Introduces current business trends, issues, and problems. This is accomplished through readings and discussions, as well as by required attendance at Dean's Convocation, Partner's in Business, and other appropriate business seminars.

Repeatable for credit
Pass/Fail only

Semester(s) Traditionally Offered: Fall, Spring

BUS 3310 - Managerial Cost Accounting
3 credits

Intermediate level of accounting and interpretation of accounting information for internal decision-making and control.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; ACCT 2020; completion of entrance exam (www.huntsman.usu.edu/acct/)

BUS 3330 - Essentials of Database Systems
3 credits

Includes essential theory of database systems in areas such as E/R design, relational design, the SQL language, and distributed databases.

Prerequisite/Restriction: MIS 2100, completion of at least 40 credits, and cumulative GPA of 2.5 or higher.

BUS 3400 - Finance Fundamentals (QI)
QI Quantitative Intensive
3 credits

Study of basic financial management principles, methods, and policies for business.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; ACCT 2010; MATH 1050; choose one statistics course from STAT 1040, STAT 2300, STAT 3000, or PSY 2800.

BUS 3410 - Federal Income Tax I
3 credits

Study of tax law and procedures for individuals, with an introduction to corporations and other entities.
Prerequisite/Restriction: Cumulative GPA of 2.5 or higher.

BUS 3500 - Marketing Principles
3 credits

Study of basic marketing principles, functions, concepts, and terminology.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher.

BUS 3510 - Business Programming
3 credits

Includes basics of business systems development using programming languages supporting the Windows environment.

Prerequisite/Restriction: MIS 2100, completion of at least 40 credits, and cumulative GPA of 2.5 or higher.

BUS 3610 - Introduction to Entrepreneurship
3 credits

Introduction to entrepreneurship and the initial developmental processes of new ventures. Helps students become familiar with entrepreneurship, its role in the economy, and its viability as a career path. Focuses on identifying and analyzing potential business opportunities.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

BUS 3620 - Developing Entrepreneurial Competencies
3 credits

Focuses on the development of persuasion, delegation, organizational, leadership, and other practical competencies for individuals who launch businesses and/or play a significant role in their growth.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

BUS 3700 - Operations Management Fundamentals
3 credits

Study of basic concepts and tools relating to managing the operations of a business.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; MATH 1100 or MATH 1210; STAT 2300 or STAT 3000.

BUS 3710 - Interpersonal and Team Skills
3 credits

Focuses on the role of teams and interpersonal relationships in emerging organizations. Designed to help individuals and teams learn the skills needed for organizational effectiveness. Uses examples and exercises relevant to emerging organizations.

BUS 3820 - International Ventures
3 credits

Explores international culture and content of entrepreneurship, the impact of globalization on emerging businesses, and the pressures and complexities of operating in global markets, including the processes of managing multicultural resources.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

BUS 4010 - Selected Topics in Finance
3 credits

Selected topics in finance pursued in depth. Topics may vary.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; BUS 3400.

BUS 4020 - Selected Topics in Marketing
3 credits

Selected topics in marketing pursued in depth. Topics may vary.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; BUS 3500.

BUS 4030 - Selected Topics in Management
3 credits

Selected topics in management pursued in depth. Topics may vary.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.
Repeatable for credit.

BUS 4040 - Selected Topics in Human Resources
3 credits

Selected topics in human resources pursued in depth. Topics may vary.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

BUS 4050 - Selected Topics in Information Systems
3 credits

Selected topics in information systems pursued in depth. Topics may vary.

Prerequisite/Restriction: BUS 3330, completion of at least 40 credits, and cumulative GPA of 2.5 or higher.

BUS 4200 - Advanced Accounting
3 credits

Explores accounting principles and theory relating to business combinations, nonprofit organizations, and governmental accounting.

Prerequisite/Restriction: Cumulative GPA of 3.0 or higher; grade of B or better in BUS 3010; admittance to a USU major; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Summer alternate years

BUS 4250 - Advanced Internship
1-9 credits

Advanced or middle-level internship experience in a career-related position approved by the Cooperative Education Office. One credit for every 75 hours of internship experience, with a maximum of 9 credits.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

BUS 4410 - Taxation of Business Entities
3 credits

Examines federal taxation of partnerships, S-corporations, estates and trusts, and other special entities.

Prerequisite/Restriction: Cumulative GPA of 3.0 or higher, grade of B or better in BUS 3010; BUS 3410; admittance to a USU major; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall alternate years

BUS 4500 - Accounting Systems
3 credits

Studies concepts underlying the accounting systems' computerized support of business processes. Covers accounting systems development, internal controls, security, and systems auditing.

Prerequisite/Restriction: Cumulative GPA of 3.0 or higher; grade of B or better in BUS 3010; admittance to a USU major; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall alternate years

BUS 4510 - Auditing Principles
3 credits

Teaches fundamental principles and techniques of financial statement auditing. Also addresses internal controls, professional ethics, legal environment, auditing standards, and fraud detection.

Prerequisite/Restriction: Cumulative GPA of 3.0 or higher; grade of B or better in BUS 3010; admittance to a USU major; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Spring alternate years

BUS 4530 - Fundamentals of Marketing Research
3 credits

Examines the marketing research process. Develops skills in research using secondary data, primary qualitative data, and primary quantitative data. Helps students make sound business decisions based on analysis of research data.

Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall
BUS 4580 - New Venture Finance
3 credits
Focuses on developing practical experience with generating feasible financial projections, financial modeling, scenario analysis, and entrepreneurial funding (venture capital, angel investing, debt financing, bootstrapping, etc.).
Prerequisite/Restriction: BUS 3400; ACCT 2010, ACCT 2020; cumulative GPA of 2.5 or higher; and completion of at least 40 credits.
Semester(s) Traditionally Offered: Spring

BUS 4620 - Advanced Business Planning
3 credits
Theoretical and practical aspects of starting or buying a business. Includes development of a business plan, conducting due diligence for buying a business, valuation, and related topics.
Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.
Semester(s) Traditionally Offered: Fall

BUS 4710 - Entrepreneurship Project
3 credits
Students plan and complete advanced entrepreneurship projects that may include developing their own business, a significant consulting project with a start-up or growth business, or other approved project.
Prerequisite/Restriction: Cumulative GPA of 2.5 or higher and completion of at least 40 credits.

BUS 4880 - Business Strategy (CI)
CI Communications Intensive
3 credits
Capstone course dealing with the processes of operating a business venture. Emphasizes market entry, finance, operations, managing growth, business ethics, and social responsibility. Addresses entrepreneurial issues and global strategies.
Prerequisite/Restriction: Cumulative GPA of 2.5 or higher; BUS 3110, BUS 3400, BUS 3500, BUS 3700.
For all students wanting a greater understanding of business. It is an examination of the role of business and commerce through history and how it shapes modern society. Students will study both classical and current theories of management, human relations and motivation, ethics and social responsibility. Emphasis will also be placed on factors needed for organizations to become and remain competitive in the global marketplace.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 1021 - Personal Finance
3 credits

Designed for all students. Introduction to personal financial planning throughout all stages of life. Emphasis is placed on planning for, acquiring, protecting and investing wealth to meet personal financial objectives.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 1050 - Business Mathematics (MA)
MA Mathematics
3 credits

Required for students working towards a Certificate of Completion or an Associate of Applied Science in Business Administration. Examines common business practices and their associated math procedures. Designed to provide a solid preparation and foundation for students who are going on to course work or careers in accounting, management, marketing, finance, and small business or for individuals who wish to become better informed consumers. Topics include: discounts, markups/markdowns, payroll, promissory notes, time value of money, consumer and business credit, interpretation of financial statements, inventory, depreciation, and an introduction to business statistics.

Prerequisite/Restriction: MATH 0950 or higher

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 1091 - Business Presentations
3 credits

Designed to help students develop skills in the art of expressing themselves by visually presenting business topics or proposals to individuals or groups. A variety of business presentations are given using microcomputer presentation software.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring Summer on demand only

BUSN 1310 - Introduction to Business Management
2 credits

covers an overview of management functions and roles and will specifically examine organizational and strategic planning, organizational design, the staffing process, and control systems. Course is required for students working towards an Associate of Science in Business Administration.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

BUSN 1400 - Introduction to Hospitality Management
3 credits

Recommended elective for students working towards an Associate of Applied Science in Business Administration with an emphasis in Hospitality. Provides a basic understanding of businesses in the hospitality field. Explores management functions and responsibilities from a hospitality perspective. Introduces students to career opportunities in hospitality management.

Campus: USU Eastern only

BUSN 1500 - Business Leadership Club
1 credit

Course is the business department’s vehicle for student practical involvement and leadership development. In addition to campus and community service projects, students may join the national business organizations PBL and/or DEX where they can network and participate in state and national leadership building activities.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 2050 - Business Law
4 credits
Introduces the student to the fundamental yet dynamic nature of the legal environment among businesses, government and consumers. These relationships include questions of constitutional law, legal reasoning, ethics and procedures. Torts, crimes, contracts, property (real, personal and intellectual), physical environment, employment, agency, commercial transactions and bankruptcy are but a few issues facing national and international business.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 2160 - Introduction to Business Finance
3 credits

Introductory course in business finance. Course topics will include the financial sector, financial analysis, budgeting, the time value of money, sources of financing, the cost of capital, and basic securities.

Prerequisite/Restriction: A basic understanding of algebra. It is strongly recommended that this course be taken after the student as completed ACTG 2010.

Campus: USU Eastern only
Semester(s) Traditionally Offered: On demand only

BUSN 2200 - Business Communications
3 credits

Course is required for students working towards an Associate of Applied Science in Business Administration. Designed to give students the knowledge and opportunity to write clear, concise, and correct business correspondence. Focuses on the most common forms of business writing: sales letters, memos, proposals, research reports and resumes. The proper format of business writing is presented and stressed and emphasis is also placed on editing and proofreading in order to produce “mistake-free” correspondence.

Prerequisite/Restriction: An introductory English composition course (ENGL 1010) and a word-processing course. Transfer students are required to earn a “B” or better to transfer this course.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 2201 - Marketing Concepts
3 credits

An overview of the marketing function emphasizing concepts and terminology. Covers the components of the marketing mix, opportunities available in marketing, and the relationship between marketing and the world of business.

Campus: USU Eastern only

BUSN 2202 - International Marketing
3 credits

For the student who desires to investigate the challenges of doing business in an increasingly global environment. Lectures and in-class discussions place special emphasis on the cultural and social diversity of international markets, marketing strategies of global firms, and the challenges of international pricing, distribution, advertising and product development.

Prerequisite/Restriction: BUSN 2201

Campus: USU Eastern only

BUSN 2211 - Introduction to Advertising
2 credits

Introduces students to the basic techniques used in advertising. Teaches the use of marketing information and research to develop effective advertising campaigns for different media. Other topics include basic design skills, advertising terminology, examples of effective advertising and simple market research.

Prerequisite/Restriction: An introductory course in marketing, such as BUSN 2201, is recommended.

Campus: USU Eastern only

BUSN 2241 - Retail Merchandising
2 credits

An overview of the retailing process, the environment within which it operates, and the institutions and functions that are performed by retailers.

Campus: USU Eastern only

BUSN 2251 - Consumer Behavior
3 credits

Designed to apply psychological, sociological, economic
and anthropological influences to the purchasing and the consumption of goods and services by the ultimate consumer.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BUSN 2320 - Small Business Management - CTE (HR)
HR Human Relations
3 credits

Examines the many aspects of establishing and/or managing a small business. In addition to the basic underpinnings of a small business, the course focuses on human resource management, ethics, business communications, financial management and managing the growth and expansion.

BUSN 2321 - Small Business Management
2 credits

Focuses on the unique aspects of establishing and operating a small business. Enables students interested in entrepreneurship to develop the necessary skills and tools for success. Topics will include small business practices, family businesses, franchising and formation of small businesses.

Campus: USU Eastern only

BUSN 2390 - Organizational Behavior (HR)
HR Human Relations
3 credits

Comprehensive study of human behavior in the workplace. Focuses on the application of psychological theories of attribution, learning, motivation, and group processes to enhance productivity, quality, and job satisfaction.

Prerequisite/Restriction: Introductory writing course

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BUSN 2451 - Travel and Tourism
2 credits

Designed to help students understand the underlying principle and practices of domestic and international tourism. Examines how these dimensions effect travel services, marketing strategies, planning, development, research and policy making in the area of hospitality management.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BUSN 2590 - Business Ethics and Social Responsibility
2 credits

Explores theories of business responsibility from a multidisciplinary and managerial perspective. Presents current theories of business ethics and examines how they apply to a number of case studies. Topics include ethical and social responsibility issues with regard to consumer product safety, advertising, affirmative action, sexual harassment, employee rights, whistle-blowing, conflicts of interest, and worker safety.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BUSN 2600 - Business Consulting
1-3 credits

Designed for the business student to provide consulting opportunity and experience as well as exposure to the practical realities of the business world. Under the supervision of a faculty member, students will work with small businesses in the area to either provide or assist in the delivery of consulting, training or business counseling services.

Campus: USU Eastern only
Semester(s) Traditionally Offered: On demand only

BUSN 2700 - Business Forum
1 credit

Designed to increase the student’s success during and after the college experience. Focuses on developing a portfolio to include a resume, samples of outstanding college work, and letters of recommendation. Includes a very basic overall review of the major business subjects (accounting, business law, economics, marketing, management, and finance) and their relationship with
each other.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BUSN 2977 - Cooperative Education
1-3 credits

Provides for supervised on-the-job training in general business functions. Learning objectives, hours worked and credit agreements are approved by instructor.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

BUSN 2988 - Special Problems
1-3 credits

Provides an opportunity for business students to study or research a special area of interest approved by an instructor. Time and credit is to be arranged.

Campus: USU Eastern only

BUSN 2999 - Workshop
1-3 credits

Designed to meet the changing needs of the Business or Non-Business student in today's world. In a workshop or seminar-type format, opportunity is provided to cover a broad range of topics and issues. Emphasis will be placed upon the most current thinking in business practice and technology.

Campus: USU Eastern only

Business Computer Information Systems (USU Eastern)

BCIS 0990 - Computer Basics
2 credits

Designed for students with little or no previous computer experience to give them a practical knowledge in using a computer, with emphasis on home use. Concepts covered include keyboard and mouse use, learning the purpose of computer devices, changing computer settings, file management, using the Internet and e-mail, basic word processing, and digital media management.

Campus: USU Eastern only

BCIS 1000 - Introduction to Computer Science
3 credits

Strictly a lecture class with NO hands-on experience. Class is a survey of computers that covers hardware, software, computer history, computer crime, operating systems, programming languages, and computer networks. A research paper will be required.

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 1010 - Computer Literacy
3 credits

Course uses the Microsoft Office program to teach students basic word processing, data processing, spreadsheet, graphics, Internet, Windows, and E-mail skills in a business setting. Following the completion of the course, students will be able to use the Microsoft Office program for personal and business use. Business majors refer to BCIS 2010.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BCIS 1200 - Microcomputer Operating Systems
2 credits

Course uses the current version of Microsoft Windows. Covers the history of microcomputer operating systems, legacy DOS commands (redirection, pipes, filters, hierarchical directories and folders, special utilities, and the creation of batch files), a comparison of GUI operating systems with their strengths and weaknesses, Windows configuration files, setup, memory resource management, optimization, multitasking, Windows management and accessory programs.

Prerequisite/Restriction: Previous computer experience suggested.

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 1300 - Introduction to HTML and Web Page Design
3 credits

Focuses on the design and construction of Internet Web Pages. Web Page development using HTML and Web page editing software is discussed. All students will have hands-on experience creating and publishing their own
Web pages.

Prerequisite/Restriction: BCIS 1010 or equivalent

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BCIS 1310 - Digital Image Basics
2 credits

Covers digital camera basics, downloading images, applying some basic touch-up and enhancements using popular software, options for printing your pictures, creating cards, scrapbooks, calendars, screen projects to display on a computer or on a DVD for television, and converting and compressing digital images into appropriate file formats to store and archive correctly.

Campus: USU Eastern only

BCIS 1340 - Digital Audio-Video Production
3 credits

Fundamental theories and practice in computer-based audio and video production, including recording, editing, digitizing audio and video segments utilizing current programs such as Adobe Premiere, Quicktime and various Internet streaming technologies. Includes lectures, demonstrations, and a project during which each student will set up, shoot, edit, and digitize a high-quality video project for computer-based multimedia.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BCIS 1350 - Flash Basics and Interactive Web Design
3 credits

Introduction to the Macromedia Flash multimedia authoring environment. Students will have hands-on experience developing streaming web-based multimedia presentations and websites incorporating animation, sound and graphics. Students will use the Flash scripting language, ActionScript, to add interactivity and functionality to their Flash projects.

Prerequisite/Restriction: BCIS 1300 or experience in creating web pages.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall
BCIS 1410 - Spreadsheet I (Excel)
2 credits

Introduction to spreadsheet operations. Several predefined spreadsheet functions will be introduced. Creating charts, graphs, and other graphic elements will be covered. Transfer students are required to earn a “B” or better to transfer this course.

Prerequisite/Restriction: Limited typewriting and math skills (MATH 0990)

BCIS 1411 - Spreadsheet II (Excel)
2 credits

Continuation of the BCIS 1410 class. Covers databases, database functions, tables, graphics, styles, macros, application development, and basic programming techniques.

Prerequisite/Restriction: BCIS 1410

BCIS 1900 - Elementary Typewriting and Keyboarding
1 credit

Designed for students with little or no previous keyboarding experience. Emphasizes fundamental keyboarding skills as well as technique. Touch keyboarding covering the letter, figure and symbol keys.

BCIS 1901 - Intermediate Keyboarding
2 credits

Designed for students who have had previous keyboarding and computer experience. Designed to significantly improve typing speed and accuracy. Covers how to produce several types of reports, memos, letters, outlines and tables required by specific business offices.

BCIS 1910 - Speedwriting for Notetaking
4 credits

Teaches students how to increase their writing speed, using an alphabetic shorthand system and a variety of dictation and transcription exercises. Designed for secretarial majors and for students who want to improve their note taking abilities. Helps students increase their punctuation, spelling and word usage skills.

Prerequisite/Restriction: A word processing class (e.g., BCIS 1400 or BCIS 1405) or prior experience with a word processing program.

BCIS 2010 - Business Computer Applications
CIL Computer and Information Literacy
3 credits

Designed for business majors and uses the Microsoft Office program. Covers basic word processing, data processing, spreadsheet, graphics, Internet, Windows, and E-mail skills in a business setting. Following the completion of the course, students will be able to use the Microsoft Office program for personal and business use. Transfer students are required to make a “B” or better to transfer this credit.

BCIS 2210 - UNIX Operating System
3 credits

Covers the UNIX operating system from the user’s standpoint and cover some basic systems administration. Includes shells, directories, file operations, permissions, processes, background execution, tools, utilities, editors, basic shell programming, and network/remote operations.

Prerequisite/Restriction: Previous computer experience suggested.
BCIS 2300 - Advanced HTML and Java Script
2 credits

Web page authoring course designed to give students the knowledge to design advanced web pages. Graphics, content, layout, and aesthetics will be stressed. Extensive Java scripting and Active X will be used to enhance web page functionality and appearance. Web based forms, data collection and dynamic web pages will also be covered.

Prerequisite/Restriction: Computer literacy requirement, BCIS 1300 or instructor approval.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BCIS 2330 - Business Data Communications and Networking
3 credits

Places emphasis on business data communications in a LAN and WAN networking environment. Includes network protocols, cable technology, telecommunications standards, security issues, and general telecommunications management issues.

Prerequisite/Restriction: Computer literacy requirement.

Campus: USU Eastern only

BCIS 2340 - Introduction to Multimedia Authoring
3 credits

Uses a popular authoring software package to create an interactive multimedia presentation. Gives students a good start in multimedia development. Introduces students to Macromedia's Authorware software program. Since the Authorware program is very complex, only the essential functions of the program will be used as a basis for this course. Students will have the opportunity to develop a basic self-directed design module that will include the major components of the software covered during class time. Utilizing Authorware, this course will provide the designer with the core foundations for the development of computed based instruction.

Prerequisite/Restriction: BCIS 1340

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 2345 - Multimedia Authoring
2 credits

Focuses on multimedia authoring using the capabilities of Macromedia Director. Covers authoring tools, scripting, Lingo, and other basics. Primary emphasis is hands-on experience with beginning levels of Director. Students work through textbook lessons and create their own multimedia projects.

Corequisite: BCIS 2346

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 2346 - Multimedia Authoring Lab
2 credits

Focuses on the production of interactive multimedia projects using the capabilities of Macromedia Director. A hands-on experience that includes design, audience analysis, project management and delivery. Students work in teams during the term on a single instructional project of their choice.

Corequisite: BCIS 2345

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 2420 - Database I (Access)
2 credits

Uses the current version of Microsoft Access for Windows. Introduces data processing techniques including creating, editing and querying a database. Students will also learn how to create custom forms and reports, and how to design custom advanced queries and use World Wide Web and Hyperlink Fields. Transfer students are required to earn a “B” or better to transfer this course.

Prerequisite/Restriction: BCIS 1010, BCIS 2010 or equivalent.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

BCIS 2421 - Database II (Access)
2 credits

Uses the current version of Microsoft Access and its
Visual Basic Environment. Students will create customized menus and programs that could be used as stand-alone data processing applications. Designed for the serious data processing student or for the student who wants to learn Visual Basic Programming. Visual Basic topics covered are variables, modules, functions, subroutines, IF statements, FOR and WHILE loops, SELECT statements, class registry, and error handling.

Prerequisite/Restriction: Computer literacy requirement and BCIS 2420, or instructor permission.

Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 2422 - Oracle/InterDev
3 credits

Uses Oracle, from the world’s leading database company, to develop database objects that are accessible through the Internet as part of an E-commerce business. Students learn the basics of developing forms, reports, and integrated database applications. The SQL language will be introduced and used to create tables, insert data into tables, and display data from a search.

Prerequisite/Restriction: BCIS 2420 and some knowledge with programming languages.

Campus: USU Eastern only

BCIS 2430 - Desktop Publishing
2 credits

Introduces students to the concepts of desktop publishing using Microsoft Publisher. Concepts covered include such topics as creating business cards, letterheads, flyers, brochures and booklets.

Prerequisite/Restriction: BCIS 1405

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BCIS 2441 - Graphics for the Web
3 credits

Designed to teach web site design techniques using Photoshop, Image Ready and other popular web graphic design software. Students will create graphics for web sites which includes icons, graphics, background images, bullets, buttons, fonts and banners.

Prerequisite/Restriction: BCIS 1300 is recommended

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

BCIS 2500 - Electronic Commerce
3 credits

Complete introduction to the world of e-commerce, with balanced coverage of both technical and business topics. Students will learn theoretical as well as practical e-commerce applications including hands-on construction of an e-commerce web page.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BCIS 2550 - Fundamentals of Fortran
3 credits

Introduction to programming using the high-level language FORTRAN 90. Emphasis will be on structured problem solving and algorithm development using control structures, arrays, functions, and subroutines. It is recommended that Engineering students take this class during the Sophomore year.

Prerequisite/Restriction: MATH 1210 and MATH 1100

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BCIS 2610 - Administering Windows® Professional
3 credits

Designed to teach fundamental installation, implementation, and configuration management tasks in Microsoft Windows® Professional. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: Previous experience and familiarity with Windows suggested.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

BCIS 2611 - Administering Windows® Server
3 credits
Designed to teach fundamental installation, configuration, and administrative management tasks in Microsoft Windows® Server. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: BCIS 2610

Campus: USU Eastern only

BCIS 2612 - Administering Windows® Network Infrastructure
3 credits

Designed to teach Windows® Network Administration in the areas of Domain Naming Service (DNS), Dynamic Host Control Protocol (DHCP), Remote Access, Network Protocols, Windows Internet Naming Service (WINS), Internet Protocol (IP) routing, Address Translation, and Troubleshooting. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: BCIS 2611

Campus: USU Eastern only

BCIS 2613 - Implementing Windows® Directory Services Infrastructure
3 credits

Designed to teach Windows® Directory Services Infrastructure. Includes the following areas: Active Directory, Active Directory DNS, Change and Configuration Management, and Active Directory Security. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: BCIS 2611

Campus: USU Eastern only

BCIS 2614 - Designing Windows® Directory Services Infrastructure
3 credits

Designed to teach the design of Windows® Directory Services Infrastructure. Includes doing extensive analysis of business and technical requirements to design appropriate Directory Service Architectures and Service Locations. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: BCIS 2611 and BCIS 2613

Campus: USU Eastern only

BCIS 2615 - Designing Security for a Windows® Network
3 credits

Designed to teach the designing of security for a Windows® Network. Includes doing extensive analysis of business, technical, and security requirements to design appropriate security for local and wide area networks that use Windows®. Intended for students interested in achieving Microsoft Certified Professional status. Students also earn core credit toward Microsoft Certified Systems Engineer certification.

Prerequisite/Restriction: BCIS 2611 and BCIS 2613

Campus: USU Eastern only

Semester(s) Traditionally Offered: On Demand only

BCIS 2616 - Managing a Microsoft Windows® Network Environment
3 credits

Course is designed to prepare students for the challenges they will face as a networking professional responsible for administering and supporting Windows network skills that are in high demand in today's business environment. Students learn how to administer and support a Windows network and prepare for the Microsoft Certified Professional Exam 70-218, a core requirement for MCSA certification and an elective for MCSE. Covers how to: set up client and server computers; manage data storage, shared resources, and permissions; configure network infrastructure, including TCP/IP, DHCP, and name resolution services; install Internet Information Services; create user and group objects, and administer Active Directory services; use group policies to manage desktops and network security; troubleshoot remote access and VPN connections; and monitor server health and performance.

Prerequisite/Restriction: BCIS 2611 and BCIS 2613
BCIS 2630 - Foundations of Novell Networking
3 credits

Covers how to accomplish fundamental network management tasks on a NetWare network. Intended for students interested in gaining their Certified Novell Administrator (CNA) and Certified Novell Engineer (CNE) certifications. (Course 560)

Prerequisite/Restriction: Basic understanding of personal computers, operating systems and network technology and a working knowledge of the Windows operating system or Windows NT Workstation and experience with DOS suggested.

BCIS 2650 - Information Security Fundamentals
2 credits

Introduction to the various technical and administrative aspects of Information Security and Assurance. Provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system, with appropriate intrusion detection and reporting features. Purpose of this course is to provide the student with an overview of the field of Information Security and Assurance. Students will be exposed to the spectrum of Security activities, methods, methodologies, and procedures. Covers inspection and protection of information assets, detection of and reaction to threats to information assets, and examination of pre-managerial responses and an overview of the Information Security Planning and Staffing functions.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology suggested.

BCIS 2651 - Computer Security Fundamentals
3 credits

Takes an in depth look at operating system security concepts and techniques. Examines theoretical concepts that make the world of security unique. Adopts a practical hands-on approach when examining operating system security techniques. Along with examining different security strategies, this course will explore the advancement of security implementation, as well as timeless problem solving strategies.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology.
Campus: USU Eastern only
Semester(s) Traditionally Offered: On Demand only

BCIS 2652 - Advanced Network Security
3 credits

Takes an in depth look at network security concepts and techniques. Examines theoretical concepts that make the world of security unique. Adopts a practical, hands-on approach when examining networking security techniques. Along with examining different network strategies, this course will explore the advancement of network implementation as well as timeless problem solving strategies.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology suggested.

Campus: USU Eastern only

BCIS 2653 - Network Intrusion Detection and Control
2 credits

Takes an in depth look at network defense concepts and techniques. Examines theoretical concepts that make the world of networking unique. Adopts a practical hands-on approach when examining network defense techniques. Along with examining different network defense strategies, this course will explore the advancement of network implementation, as well as timeless problem solving strategies.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology suggested.

Campus: USU Eastern only

BCIS 2654 - Disaster Recovery
3 credits

Provides a thorough, step-by-step process for learning the fundamentals of disaster recovery planning. Disaster recovery planning is the process of assessing risks that an organization faces, developing, documenting, implementing, testing, and maintaining procedures that help the organization quickly return to normal operations and minimize losses after a disaster. Enables individuals to become disaster recovery planning team leaders and members.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology suggested.

Campus: USU Eastern only

BCIS 2655 - Computer Forensics
2 credits

Presents methods to properly conduct a computer forensics investigation, beginning with a discussion of ethics.

Prerequisite/Restriction: Experience using personal computers, their operating systems, and network technology suggested.

Campus: USU Eastern only

BCIS 2920 - Legal/Medical Practicum
2 credits

Designed for students who have had previous keyboarding and computer experience. Primarily designed for secretarial majors who want to become more familiar with the specialized forms and terminology used in medical and legal offices. Covers some of the advanced features of WordPerfect (e.g., mail merge and macros) to automate the completion of the forms.

Prerequisite/Restriction: BCIS 1901 or permission of the instructor, BCIS 1400 or BCIS 1405.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

BCIS 2930 - Office Procedures and Human Relations (HR)
HR Human Relations
3 credits

Provides instruction and application of skills and knowledge needed in an office setting. Skills in human relations will be stressed through a series of group and individual activities.

Prerequisite/Restriction: BCIS 1405, BCIS 1406, BCIS 2420 or BCIS 1010 or BCIS 2010

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring
BCIS 2977 - Cooperative Education
1-3 credits
Provides supervised on-the-job training in BCIS areas. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objective, hours to be worked, and credit agreements.
Prerequisite/Restriction: Permission of instructor
Campus: USU Eastern only

BCIS 2988 - Special Problems
1-3 credits
Individual work approved by the instructor. Time and credit to be arranged.
Campus: USU Eastern only

BCIS 2999 - Workshop
1-3 credits
Designed to meet the changing needs of the student in Business Computer Information Systems.
Campus: USU Eastern only

BHIS 1010 - Medical Coding Theory I
3 credits
Provides students with the building blocks of basic medical coding. Such understanding will facilitate the learning of medical coding principles encountered during more advanced career preparation. Covers medical coding compliance and documentation issues and provides a foundational understanding of the guidelines and procedures for ICD-9-CM, CPT and HCPCS coding. Quizzes and exams simulate national certification exams and are important in both learning how to code quickly and accurately and in preparing for national certification.
Prerequisite/Restriction: NURS 1008 and BIOL 1500 or instructor permission
Corequisite: BHIS 1015
Campus: USU Eastern only

BHIS 1015 - Medical Coding Applications I
1 credit
The applications experience allows the medical coding student the opportunity to integrate theoretical knowledge with practical medical coding situations and scenarios. The student is expected to demonstrate increased knowledge, develop high proficiency levels and apply medical coding skills. With the help of experienced, certified medical coders, the student will practice coding provider-based scenarios in the areas of specialty covered in Medical Coding Theory 1.
Prerequisite/Restriction: BIOL 1500 and NURS 1008 or instructor permission
Corequisite: BHIS 1010
Campus: USU Eastern only

BHIS 1020 - Medical Coding Theory II
3 credits
Continuation of Medical Coding Theory I. At the completion of the course, the student will be eligible to take the Certified Professional Coder (CPC) national certification exam from the American Academy of Professional Coders (AAPC).
Prerequisite/Restriction: BHIS 1010 and BHIS 1015
Corequisite: BHIS 1025
Campus: USU Eastern only

BHIS 1025 - Medical Coding Applications II
1 credit
The applications experience allows the medical coding student the opportunity to continue to grow by integrating theoretical knowledge with practical medical coding situations and scenarios. The student is expected to continue to demonstrate increased knowledge in medical coding and continue to develop higher proficiency levels. With the help of experienced, certified medical coders, the student will focus on skill refinement while working with large numbers of provider-based scenarios.
Prerequisite/Restriction: BHIS 1010 and BHIS 1015
Corequisite: BHIS 1020
Campus: USU Eastern only
BHIS 2010 - Advanced E/M Coding
3 credits
Offers the opportunity to achieve coding mastery and is the first part of the more advanced career preparation in medical coding. The course will emphasize Evaluation and Management (E/M) coding, which is so critical to much of the coding industry. In addition to instruction on appropriate documentation, the formatting of chart notes, and E/M coding guidelines and procedures, students will work repeatedly with actual medical charts, refining their skills and honing their knowledge in this area of specialty.

Prerequisite/Restriction: BHIS 1010 and BHIS 1015 and BHIS 1020 and BHIS 1025 or instructor permission

Corequisite: BHIS 2015
Campus: USU Eastern only
BHIS 2015 - Virtual Medical Coding for E/M
1 credit
Virtual Medical Coding I introduces the student to the virtual world of coding. A web-based medical coding application will be presented and discussed. Authentic medical records are analyzed and coded. Throughout the course students are provided the opportunity to further master Evaluation and Management (E/M) coding as they actually work in a real-world, web-based, virtual environment.

Prerequisite/Restriction: BHIS 1010 and BHIS 1015 and BHIS 1020 and BHIS 1025 or instructor permission

Corequisite: BHIS 2025
Campus: USU Eastern only
BHIS 2025 - Virtual Medical Coding for Advanced Topics
1 credit
Virtual Medical Coding II transitions the medical coding student into a remote-site medical coding setting. It provides the opportunity to further refine knowledge and skills in those areas emphasized as part of Advanced Topics in Medical Coding. The student will code authentic medical charts while working with a seasoned, certified medical coder in a simulated, work-replicated virtual environment.

Prerequisite/Restriction: BHIS 1010 and BHIS 1015 and BHIS 1020 and BHIS 1025 and BHIS 2010 and BHIS 2015 or instructor permission

Corequisite: BHIS 2020
Campus: USU Eastern only
BHIS 2030 - Advanced ICD-9-CM Coding II
1 credit
Provides an in-depth review of ICD-9-CM coding guidelines and procedures with an emphasis on the diseases and conditions covered in the reference manual. A deeper understanding of the anatomy and pathophysiology involved will enhance the proficiency in ICD-9-CM coding and the ability to differentiate diagnosis/condition codes and coding levels associated with specific diseases and various aspects of the disease process. The first half of ICD-9-CM for Physicians—Volumes 1 & 2 will be covered in the course.

Prerequisite/Restriction: BHIS 1010 and BHIS 1015 and Hierarchical Condition Coding-HCC, Emergency Department, etc.) The specialty areas will be determined at the beginning of each course based upon market demand and industry need. Both theoretical and practical issues will be discussed. Students will work with authentic medical charts.
BHIS 1020 and BHIS 1025 or instructor permission

Campus: USU Eastern only

BHIS 2035 - Advanced ICD-9-CM Coding II
1 credit

Continuation of Advanced ICD-9-CM Coding I. The second half of the reference manual ICD-9-CM for Physicians—Volumes 1 & 2 will be covered. Students will continue their review of ICD-9-CM coding guidelines and procedures and the anatomy and pathophysiology involved for the concluding chapters of the ICD-9-CM manual. Will refine coding skills as they learn to differentiate ICD-9-CM diagnosis and/or condition codes and coding levels.

Prerequisite/Restriction: BHIS 2030

Campus: USU Eastern only

BHIS 2040 - Medical Coding Health Care Specialties
1 credit

Provides an opportunity for students to achieve mastery in a medical coding area of specialty. Students may choose from a variety of specialty specific categories, such as Cardiology, Orthopedic Surgery, Family Practice, Hematology and Oncology, etc. Both theoretical and practical issues are presented and discussed. A review of ICD-9-CM coding guidelines and E/M coding procedures as they relate to the topic covered will be provided. Authentic medical charts will be coded and discussed. The course is designed to prepare students for national certification in the area of specialty studied.

Prerequisite/Restriction: Permission of instructor

Repeatable for credit
Campus: USU Eastern only

BHIS 2999 - Workshop
1-3 credits

A course designed to meet the changing needs of the student and work professional in medical coding.

Prerequisite/Restriction: Permission of instructor

Repeatable for credit
Campus: USU Eastern only

Caine College of the Arts

CCA 1150 - Arts Project
0.5 credits

Elective course available to all students who wish to extend the exploration of the fine and cultural arts beyond the classroom. Students attend a minimum number of cultural programs and submit written evaluation reports. Class includes lecture, lab and/or field trips.

Campus: USU Eastern only

CCA 1250 - Interdisciplinary Workshop
1-5 credits

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 2250 - Introductory Internship/Co-op
1-5 credits

Introductory-level educational work experience in an internship or cooperative education position approved by the college.

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 3050 - The Arts in Cultural Context
3 credits

Interdisciplinary study of a work, figure, or theme in the
arts. Topics vary.

Semester(s) Traditionally Offered: Fall, Spring

CCA 4250 - Advanced Internship/Co-op
1-15 credits

Internship or cooperative education position of a more professional level, with increased complexity, approved by the college.

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 4910 - Study Abroad
1-20 credits

A semester study abroad experience through a student exchange program.

Prerequisite/Restriction: Approval from the Study Abroad Office.

Graded SP (Satisfactory Progress) only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 5250 - Interdisciplinary Workshop
1-5 credits

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 6250 - Graduate Internship/Co-op
1-15 credits

Internship or cooperative education position approved by the department and/or the college.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

CCA 6910 - Study Abroad
1-12 credits

A semester study abroad experience through a student exchange program.

Prerequisite/Restriction: Approval from the Study Abroad Office

Semester(s) Traditionally Offered: Fall, Spring, Summer

Chemistry

CHEM 1010 - Introduction to Chemistry (BPS)
BPS Breadth Physical Sciences
3 credits

For non-science majors. Includes basic chemical concepts and a survey of the various branches of chemistry. Heavy emphasis on everyday applications to problems involving environmental pollution, radioactivity, energy sources, and human health.

Corequisite: CHEM 1015

Semester(s) Traditionally Offered: Fall, Spring

CHEM 1015 - Introduction to Chemistry Laboratory
1 credit

Offered to students concurrently enrolled in CHEM 1010. Offers hands-on experience obtaining data in support of topics taught in CHEM 1010. Such concepts are laboratory safety, density, use of various laboratory equipment, mole reactions, titrations, acid and base measurements, ester formation, saponification reaction and gain a familiarity with the metric system. Students should gain an appreciation of the skills needed to get accurate data and learn chemical manipulations necessary for their chosen field. The lab is optional.

Corequisite: CHEM 1010

Campus: USU Eastern only

CHEM 1110 - General Chemistry I (BPS)
BPS Breadth Physical Sciences
4 credits

For non-science majors. This course is designed for students whose major does not require the more mathematically intensive CHEM 1210 or CHEM 1220 courses. First of a two-semester sequence. Progression is made from the basic tenets of general chemistry through an introduction to organic chemistry, with topics being presented in order of practical importance and sophistication.

Prerequisite/Restriction: Math ACT score of at least 23, or MATH 1050 or higher; or corequisite of MATH 1050.

Semester(s) Traditionally Offered: Fall, Spring
CHEM 1115 - General Chemistry I Laboratory
1 credit

Experiments are chosen to illustrate and clarify concepts taught in the lecture portion of CHEM 1110. Hands-on experience with the techniques of chemistry such as using crucibles, vernier calipers, funnels, semipermeable membranes to study osmosis and diffusion, an indicator derived from red cabbage to study acid/base properties of solutions and so forth. Upon completion of the laboratory experience, students will have a better idea of laboratory manipulations needed to acquire the data they use in the nursing profession.

Corequisite: CHEM 1110

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

CHEM 1120 - General Chemistry II (BPS)
BPS Breadth Physical Sciences
4 credits

Continuation of CHEM 1110; the second half of a two-semester sequence. Additional coverage of organic chemistry is presented along with an introduction to biochemistry.

Prerequisite/Restriction: CHEM 1110

Semester(s) Traditionally Offered: Spring

CHEM 1125 - General Chemistry II Laboratory
1 credit

Laboratory course designed for non-science majors who are enrolled in CHEM 1120. Laboratory experiments involve basic aspects of general chemistry, organic chemistry and biochemistry.

Prerequisite/Restriction: CHEM 1110 and CHEM 1120 (may be taken concurrently)

Semester(s) Traditionally Offered: Fall, Spring

CHEM 1210 - Principles of Chemistry I
4 credits

First of a two-semester sequence, covering fundamentals of chemistry. Designed for science and engineering students.

Prerequisite/Restriction: Math ACT score of at least 25, or MATH 1050 or higher; or corequisite of MATH 1050. High school chemistry recommended.

Semester(s) Traditionally Offered: Fall, Spring

CHEM 1215 - Chemical Principles Laboratory I
1 credit

Laboratory course designed to be taken concurrently with CHEM 1210. The laboratory class offers hands-on experience related to the topics taught in the lecture sequence.

Prerequisite/Restriction: CHEM 1210 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring

CHEM 1220 - Principles of Chemistry II (BPS)
BPS Breadth Physical Sciences
4 credits

Continuation of CHEM 1210; the second half of a two-semester sequence, covering the fundamentals of chemistry. Designed for science and engineering students.

Prerequisite/Restriction: CHEM 1210

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 1225 - Chemical Principles Laboratory II
1 credit

Continuation of CHEM 1215. Normally taken concurrently with CHEM 1220. The laboratory class offers hands-on experience related to topics taught in the lecture sequence.

Prerequisite/Restriction: CHEM 1215

Semester(s) Traditionally Offered: Fall, Spring

CHEM 1990 - Introduction to the Chemistry and Biochemistry Professions
1 credit

Seminar-format course designed to expose students to exciting areas of chemistry and biochemistry. Includes seminars on topical issues presented by faculty and
invited guests. Discussion of career options.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

CHEM 2300 - Principles of Organic Chemistry
3 credits

Shape, bonding, nomenclature, stereochemistry, physical properties, and reactivity of organic molecules is covered for a range of molecules, beginning with simple alkanes and finishing with some of the more complex abiotic and biotic organic molecules known today.

Prerequisite/Restriction: CHEM 1210

Semester(s) Traditionally Offered: Fall

CHEM 2310 - Organic Chemistry I
4 credits

First of a two semester sequence covering the physical properties, nomenclature, stereochemistry, mechanisms, chemical reactivity, and spectroscopy of organic compounds, including the biological roles and importance of organic compounds. The CHEM 2310/ CHEM 2320 sequence constitutes a more in-depth examination of the topics covered in CHEM 2300. Students should consult with their advisor to determine which Organic Chemistry course is required for their major.

Prerequisite/Restriction: CHEM 1220

Semester(s) Traditionally Offered: Fall

CHEM 2315 - Organic Chemistry Laboratory I
1 credit

Laboratory course designed to accompany CHEM 2310. The laboratory class offers hands-on experience related to topics taught in the lecture sequence.

Prerequisite/Restriction: CHEM 1210 and CHEM 1215

Semester(s) Traditionally Offered: Fall

CHEM 2320 - Organic Chemistry II
4 credits

Continuation of CHEM 2310. The second half of a two semester sequence covering the physical properties, nomenclature, stereochemistry, mechanisms, chemical reactivity, and spectroscopy of organic compounds, including the biological roles and importance of organic compounds. Upon completion, students will be prepared to understand the chemical aspects of biochemistry as they relate to how organic biomolecules react and interact in biological systems.

Prerequisite/Restriction: CHEM 2310 or CHEM 2300 and permission of instructor.

Semester(s) Traditionally Offered: Spring

CHEM 2325 - Organic Chemistry Laboratory II
1 credit

Continuation of CHEM 2315. Normally taken concurrently with CHEM 2320. The laboratory class offers hands-on experience related to topics taught in the lecture sequence.

Prerequisite/Restriction: CHEM 2315

Semester(s) Traditionally Offered: Spring

CHEM 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in chemistry lab assistant and similar positions. Students meet with the instructor / coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, credit agreements.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

CHEM 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only
CHEM 3000 - Quantitative Analysis (QI)
QI Quantitative Intensive
3 credits

Basic theory and laboratory practice in analytical chemistry, including introduction to multiple equilibria and chemical separation methods.

Prerequisite/Restriction: CHEM 1215, CHEM 1225, MATH 1050 or higher.

Semester(s) Traditionally Offered: Fall

CHEM 3005 - Quantitative Analysis Laboratory
1 credit

One three-hour laboratory per week. Must be taken concurrently with CHEM 3000.

Prerequisite/Restriction: CHEM 1215, CHEM 1225, MATH 1050 or higher.

Semester(s) Traditionally Offered: Fall

CHEM 3060 - Physical Chemistry (QI)
QI Quantitative Intensive
3 credits


Prerequisite/Restriction: CHEM 1220, MATH 2210, PHYS 2220.

Semester(s) Traditionally Offered: Fall

CHEM 3070 - Physical Chemistry (QI)
QI Quantitative Intensive
3 credits


Prerequisite/Restriction: CHEM 3060.

Semester(s) Traditionally Offered: Spring

CHEM 3080 - Physical Chemistry Laboratory I (CI)
CI Communications Intensive
1 credit

Experimental work to accompany CHEM 3060.

Prerequisite/Restriction: CHEM 3060.

Semester(s) Traditionally Offered: Fall

CHEM 3090 - Physical Chemistry Laboratory II (CI)
CI Communications Intensive
1 credit

Continuation of CHEM 3080. Experimental work to accompany CHEM 3070.

Corequisite: CHEM 3070.

Semester(s) Traditionally Offered: Spring

CHEM 3510 - Intermediate Inorganic Chemistry
2 credits

Survey of basic structure, bonding, and reactivity across the periodic table.

Prerequisite/Restriction: CHEM 1220, CHEM 2310, and CHEM 2315.

Semester(s) Traditionally Offered: Spring

CHEM 3520 - Inorganic Chemistry Laboratory
1 credit

Covers basic aspects of inorganic synthesis and compound characterization.

Corequisite: CHEM 3510.

Semester(s) Traditionally Offered: Spring

CHEM 3650 - Environmental Chemistry (DSC)
DSC Depth Life and Physical Sciences
3 credits

Survey of issues and chemical nature of environmental problems, including air, soil, and water pollution.

Prerequisite/Restriction: CHEM 1010 or CHEM 1120 or CHEM 1220.
Semester(s) Traditionally Offered: Spring

CHEM 3700 - Introductory Biochemistry
3 credits

Brief survey of the chemistry of biologically important compounds and their role in microbial, animal, and plant metabolism.

Prerequisite/Restriction: CHEM 2300 or CHEM 2310.

Semester(s) Traditionally Offered: Spring

CHEM 3710 - Introductory Biochemistry Laboratory
1 credit

Laboratory course designed to accompany CHEM 3700.

Corequisite: CHEM 3700.

Semester(s) Traditionally Offered: Spring

CHEM 3750 - Chemistry Special Topics
1-3 credits

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 4250 - Cooperative Experience
1-2 credits

Planned work outside the University. Specific experience must receive prior approval for credit to be earned. Consult advisor or department head for details.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 4800 - Research Problems (CI)
CI Communications Intensive
1-3 credits

Directed undergraduate research.

Prerequisite/Restriction: Permission of department

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 4890 - Undergraduate Biochemistry Seminar (CI)
CI Communications Intensive
2 credits

Presentation of scientific seminars, critiquing of and participation in departmental seminars, scientific literature searching, accessing and using scientific databases, career preparation and development. To be taken during senior year of biochemistry major.

Semester(s) Traditionally Offered: Fall, Spring

CHEM 4990 - Undergraduate Seminar (CI)
CI Communications Intensive
2 credits

Writing and speaking skills necessary for presenting scientific information.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

CHEM 5070 - Biophysical Chemistry
3 credits

Biological applications and theories of physical chemistry. Equilibrium, thermodynamics, chemical kinetics, transport properties, and spectroscopy.

Prerequisite/Restriction: CHEM 1220; MATH 1220; and PHYS 2120 or PHYS 2220.

Semester(s) Traditionally Offered: Fall

CHEM 5520 - Advanced Inorganic Chemistry
2 credits

Advanced treatment of the structure/bonding/reactivity relationships across the periodic table.

Prerequisite/Restriction: CHEM 3070, CHEM 3510.

Semester(s) Traditionally Offered: Fall

CHEM 5530 - Advanced Synthesis Laboratory
2 credits

Laboratory course in advanced synthetic techniques, including vacuum lines, inert atmosphere, Schlenk manipulations, liquid ammonia solvent, and tube furnace reactions.

Prerequisite/Restriction: CHEM 2325, CHEM 3070, CHEM 3520.

Semester(s) Traditionally Offered: Spring
CHEM 5640 - Instrumental Analysis
3 credits


Prerequisite/Restriction: CHEM 3005, CHEM 3080.

Semester(s) Traditionally Offered: Spring

CHEM 5650 - Instrumental Analysis Laboratory
2 credits

Laboratory course to accompany CHEM 5640. Two three-hour labs per week.

Prerequisite/Restriction: CHEM 3005, CHEM 3080.

Semester(s) Traditionally Offered: Spring

CHEM 5670 - Intermediate Environmental Chemistry
3 credits

Survey of chemical processes and pollutants in the environment. Sampling and analysis of pollutants to determine chemical fate.

Prerequisite/Restriction: CHEM 3000 and CHEM 3005; CHEM 3070 recommended.

Semester(s) Traditionally Offered: Spring

CHEM 5680 - Environmental Chemistry Laboratory
2 credits

Laboratory course to accompany CHEM 5670. Field sampling and laboratory analysis of air, water, and soil samples. Method building and hypothesis testing.

Prerequisite/Restriction: CHEM 3000, CHEM 3005.

Corequisite: CHEM 5670.

Semester(s) Traditionally Offered: Spring

CHEM 5700 - General Biochemistry I
3 credits

General biochemistry for science majors, including proteins, enzymes, catalysis, bioenergetics, and catabolic metabolism.

Prerequisite/Restriction: CHEM 2320.

Semester(s) Traditionally Offered: Fall

CHEM 5710 - General Biochemistry II
3 credits

Continuation of CHEM 5700. General biochemistry for science majors, including anabolic metabolism, DNA, RNA, and protein synthesis.

Prerequisite/Restriction: CHEM 5700.

Semester(s) Traditionally Offered: Spring

CHEM 5720 - General Biochemistry Laboratory
3 credits

Prerequisite/Restriction: CHEM 5710 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring

CHEM 6010 - Quantum Chemistry
3 credits

Quantum mechanics applied to chemical problems. Theory of atoms and molecules.

Prerequisite/Restriction: CHEM 3070, MATH 2250.

Semester(s) Traditionally Offered: Fall

CHEM 6020 - Molecular Spectroscopy
3 credits

Spectroscopy of atoms and molecules.

Prerequisite/Restriction: CHEM 6010.

Semester(s) Traditionally Offered: Spring

CHEM 6250 - Curricular Practical Training
1-6 credits

Work experience tied to academics, in the graduate student’s major field of study, either chemistry or biochemistry, for which the student is paid.

Prerequisite/Restriction: Permission of department head prior to enrollment.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 6300 - Advanced Modern Organic Chemistry
3 credits

Covers topics in molecular structure, reaction mechanisms of organic molecules, and physical organic chemistry.

Prerequisite/Restriction: CHEM 2320, CHEM 3070.

Semester(s) Traditionally Offered: Fall

CHEM 6500 - Reactivity and Mechanisms in Inorganic Chemistry
3 credits

Inorganic reactions and mechanisms relevant to areas of main group, transition metals, and bioinorganic and organometallic chemistry.

Prerequisite/Restriction: CHEM 5520.

Semester(s) Traditionally Offered: Spring

CHEM 6510 - Chemical Applications of Group Theory
1 credit

Introduction to symmetry point groups and theorems of group theory for application to structure, bonding, and spectroscopy. Some familiarity with linear algebra is recommended.

Prerequisite/Restriction: CHEM 3070.

Semester(s) Traditionally Offered: Fall

CHEM 6600 - Modern Chemical Analysis
3 credits

Methodology and statistical treatment of chemical data, experimental design, quality control, and chemical separations.

Prerequisite/Restriction: CHEM 5640, graduate standing, or permission of instructor.

Semester(s) Traditionally Offered: Spring

CHEM 6700 - Advanced Biochemistry I
3 credits

Advanced-level biochemistry course intended for biochemistry MS and PhD students. Covers proteins, enzyme mechanism, nucleic acid structure and function, and catabolic metabolism at a level appropriate for students preparing for the qualifying examination. This course (which is co-instructed with CHEM 5700, with additional projects for CHEM 6700) cannot be taken for credit by students who have previously taken CHEM 5700 for credit.

Semester(s) Traditionally Offered: Fall

CHEM 6710 - Advanced Biochemistry II
3 credits

Advanced-level biochemistry course intended for biochemistry MS and PhD students. Covers anabolic metabolism and bioinformation processes at a level appropriate for students preparing for the qualifying examination. This course (which is co-instructed with CHEM 5710, with additional projects for CHEM 6710) cannot be taken for credit by students who have previously taken CHEM 5710 for credit.

Semester(s) Traditionally Offered: Spring

CHEM 6720 - Advanced Biochemistry Laboratory
2 credits

To obtain advanced laboratory skills, students complete specific laboratory experiments in research laboratories of departmental faculty members.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

CHEM 6730 - Principles of Enzymology
3 credits

Mechanisms of enzyme action, emphasizing recent advances in enzymology, including theory and modern experimental approaches to elucidation of mechanism.

Prerequisite/Restriction: CHEM 5700 or CHEM 6700 or permission of instructor.

Semester(s) Traditionally Offered: Spring
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Prerequisite/Restriction</th>
<th>Semester(s) Traditionally Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 6740</td>
<td>Cellular Communication by Small Molecules and Proteins</td>
<td>3</td>
<td>Using post-translational modifications, small molecules, and protein motifs in cellular communication. Variances in the communication systems related to disease state and/or cell stress and therapeutic strategies to manipulate the communication systems.</td>
<td>CHEM 5700 or CHEM 6700 or permission of instructor.</td>
<td>Spring</td>
</tr>
<tr>
<td>CHEM 6750</td>
<td>Principles of Structural Biology</td>
<td>3</td>
<td>General principles of protein and nucleic acid structure. Approaches to understanding biological function through structural analysis.</td>
<td>CHEM 5700 or CHEM 6700 or permission of instructor.</td>
<td>Fall</td>
</tr>
<tr>
<td>CHEM 6760</td>
<td>Principles of Bioenergetics</td>
<td>3</td>
<td>Global biological energy cycles including carbon, nitrogen, and sulfur cycles; respiration; electron transfer; and energy transduction.</td>
<td>CHEM 5700 or CHEM 6700 or permission of instructor.</td>
<td>Fall</td>
</tr>
<tr>
<td>CHEM 6910</td>
<td>Special Problems in Chemistry and Biochemistry</td>
<td>1-4</td>
<td>Selected problems in chemistry and biochemistry.</td>
<td>Written permission from department head.</td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>CHEM 6970</td>
<td>Thesis Research</td>
<td>1-10</td>
<td>Research for MS degree.</td>
<td></td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>CHEM 6990</td>
<td>Continuing Graduate Advisement</td>
<td>1-9</td>
<td>Pass/Fail only.</td>
<td></td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>CHEM 7020</td>
<td>Statistical Mechanics</td>
<td>3</td>
<td>Statistical mechanics with applications to research problems of current interest.</td>
<td>CHEM 6010.</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>CHEM 7030</td>
<td>Special Topics in Physical Chemistry (Topic)</td>
<td>3</td>
<td>Covers special areas of current interest and activity in physical chemistry.</td>
<td></td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>CHEM 7300</td>
<td>Reactions and Synthesis in Modern Organic Chemistry</td>
<td>3</td>
<td>Reactions of modern organic chemistry and their application to organic synthesis.</td>
<td>CHEM 6300.</td>
<td>Spring</td>
</tr>
<tr>
<td>CHEM 7310</td>
<td>Molecular Structure/Spectroscopy of Organic Compounds</td>
<td>3</td>
<td>Modern methods of predicting and determining molecular structure of organic compounds using advanced computational and spectroscopic tools.</td>
<td></td>
<td>Fall, Spring, Summer</td>
</tr>
</tbody>
</table>
CHEM 7330 - Special Topics in Organic Chemistry (Topic) 3 credits
Cover special areas of current interest and activity in organic chemistry.
Prerequisite/Restriction: CHEM 6300.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

CHEM 7500 - Coordination Chemistry 3 credits
Theory and spectroscopy of transition metal coordination complexes.
Prerequisite/Restriction: CHEM 3070, CHEM 6500, CHEM 6510.

CHEM 7510 - Bioinorganic Chemistry 1-3 credits
Advanced systematic study of metallobiochemical structure and function.
Prerequisite/Restriction: CHEM 6500.

CHEM 7530 - Special Topics in Inorganic Chemistry (Topic) 3 credits
Topics of current interest in inorganic chemistry.
Prerequisite/Restriction: CHEM 6500.
Repeatable for credit.

CHEM 7600 - Analytical Spectroscopy 3 credits
Practical description of spectroscopy-based analysis, emphasizing instrumentation and methods.
Prerequisite/Restriction: CHEM 5640, graduate standing, or permission of instructor.
Repeatable for credit.

CHEM 7610 - Chemical Separations 3 credits
Survey of theory and practice of modern chemical separations, including extractions, chromatography, distillation, and phase separations.
Prerequisite/Restriction: CHEM 5640, graduate standing, or permission of instructor.

CHEM 7620 - Electrochemistry 3 credits
Survey of electrochemistry with emphasis on electrochemical analysis.
Prerequisite/Restriction: CHEM 5640, graduate standing, or permission of instructor.

CHEM 7640 - Special Topics in Analytical Chemistry (Topic) 1-3 credits
Topics may include electronics from the scientist's perspective, laser-based spectroscopy, mass spectrometry, and chemometrics.
Prerequisite/Restriction: CHEM 5640, graduate standing, or permission of instructor.
Repeatable for credit.

CHEM 7770 - Special Topics in Biochemistry (Topic) 1-3 credits
Topics of current interest in biochemistry.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

CHEM 7800 - Seminar 1 credit
Graduate seminar.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

CHEM 7970 - PhD Dissertation Research
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CHEM 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Chinese

CHIN 1010 - Chinese First Year I
5 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing with exposure to cultures and customs. This course is only for students with no previous background in the Chinese language.

Semester(s) Traditionally Offered: Fall

CHIN 1020 - Chinese First Year II
5 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing with exposure to cultures and customs. Native speaker instructor.

Prerequisite/Restriction: CHIN 1010 or equivalent.

Semester(s) Traditionally Offered: Spring

CHIN 1800 - Chinese I Study Abroad
1-5 credits

Intensive study in a Chinese-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the beginning level.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

CHIN 2010 - Chinese Second Year I
5 credits

Second-year overview of speaking, listening, reading, and writing with exposure to cultures and customs. Native speaker instructor.

Prerequisite/Restriction: CHIN 1020 or equivalent.

Semester(s) Traditionally Offered: Fall

CHIN 2020 - Chinese Second Year II
5 credits

Second-year overview of speaking, listening, reading, and writing with exposure to cultures and customs. Native speaker instructor.

Prerequisite/Restriction: CHIN 2010 or equivalent.

Semester(s) Traditionally Offered: Spring

CHIN 2800 - Chinese II Study Abroad
1-5 credits

Intensive study in a Chinese-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the second-year level.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

CHIN 3010 - Chinese Third Year I
4 credits

First segment of the third-year overview of speaking, listening, reading, and writing, with additional exposure to cultures and customs. Readings include excerpts from televised drama.

Prerequisite/Restriction: CHIN 2020 or equivalent.

Semester(s) Traditionally Offered: Fall

CHIN 3020 - Chinese Third Year II
4 credits

Second segment of the third-year overview of speaking, listening, reading, and writing, with additional exposure to cultures and customs. Readings include short essays, Chinese proverbs and folktales, and other literary selections.
Prerequisite/Restriction: CHIN 3010 or equivalent.

Semester(s) Traditionally Offered: Spring

CHIN 3050 - Chinese Conversation
3 credits

Development of advanced verbal communication skills. Designed to increase vocabulary and to teach students how to express and justify facts, opinions and emotions in Chinese. Designed for non-native speaking students.

Prerequisite/Restriction: CHIN 2020 or permission of instructor.

Semester(s) Traditionally Offered: Odd years

CHIN 3080 - Chinese Outreach Practicum
1-3 credits

This course provides students of Chinese at the intermediate and advanced levels with the opportunity to apply Chinese language skills in a Chinese community setting. Students will perform service that requires their language skills.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit up to a maximum of 3 credits

CHIN 3090 - Introduction to Modern Chinese Literature and Film
3 credits

Students will read selected texts by famous modern and contemporary Chinese authors, including short stories, poems, plays and selections from novels. The primary texts are Chinese, accompanied by films adapted from these texts or reflecting related themes.

Semester(s) Traditionally Offered: Spring

CHIN 3100 - Readings in Contemporary Chinese Culture (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Introduction to contemporary Chinese culture through readings from newspapers and other source materials.

Prerequisite/Restriction: CHIN 3010 or permission of instructor.

CHIN 3510 - Chinese Business Language
3 credits

Designed to develop students’ business Chinese language skills in speaking, listening, reading, and writing, as well as cultural competence. Classwork focuses on Chinese business terms, business conversation, and basic business practices, as well as the Chinese cultural environment.

Prerequisite/Restriction: CHIN 2020 or equivalent.

Semester(s) Traditionally Offered: Fall

CHIN 3800 - Chinese III Study Abroad
1-4 credits

Intensive study in a Chinese-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the third-year level.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

CHIN 3880 - Individual Readings in Chinese
1-2 credits

Individual study of selected readings in Chinese. Designed to broaden student's reading comprehension beyond the level addressed in CHIN 3020.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

CHIN 4800 - Chinese IV Study Abroad
1-4 credits

Intensive study in a Chinese-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the fourth-year level.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

CHIN 4920 - Chinese Language Tutoring
1 credit
 Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

Civil and Environmental Engineering

CEE 1880 - Civil and Environmental Engineering
Orientation and Computer Applications
1 credit

Orients students to programs of the Department of Civil and Environmental Engineering, professional and academic advising, student services, professional societies, and engineering careers. Laboratory activities emphasize problem solving using computer applications, such as spreadsheets and the HP48 Scientific Calculator.

Semester(s) Traditionally Offered: Fall, Spring

CEE 2240 - Engineering Surveying
3 credits

Experience with a wide variety of common surveying equipment, including use and operation of levels, theodolites, total station equipment, and GPS. Prior to graduation, computer applications and field exercises prepare students for civil engineering employment early in their careers.

Prerequisite/Restriction: ACT Math score of 27 or higher or credit for MATH 1050 and MATH 1060. Enrollment limited to students having majors within the College of Engineering.

Semester(s) Traditionally Offered: Fall, Summer

CEE 2870 - Introduction to Computer Programming for Civil and Environmental Engineers
2 credit

An introductory class for teaching the principles of computer programming to civil and environmental engineering students at the undergraduate level. The programming language will be Visual Basic for Applications (VBA) with Microsoft's Excel spreadsheet.

Prerequisite/Restriction: MATH 1050 or MATH 1060 or MATH 1210

Semester(s) Traditionally Offered: Fall

CEE 2890 - Environmental Engineering Sophomore Seminar
1 credit

Introduces students to the field of environmental engineering, emphasizing design, ethics, and leadership in the environmental engineering profession. Emphasizes creative thinking, organizational skills, team work, professional ethics, and social responsibility.

Prerequisite/Restriction: Sophomore standing in environmental engineering.

Semester(s) Traditionally Offered: Spring

CEE 3010 - Mechanics of Materials
2 credits

Includes principal stresses; combined loading and stresses; deflection of beams by direction integration, moment-area, and superposition; and deflection of beams and frames by energy methods and columns. Includes visual animations to demonstrate the mechanical behavior of materials.

Prerequisite/Restriction: Minimum grades of C- in ENGR 2010 and ENGR 2140.

Semester(s) Traditionally Offered: Fall

CEE 3020 - Structural Analysis
3 credits

Classification of structural types and development of loads. Analysis of trusses, beams, frames, cables, and arches (determinate and indeterminate). Calculation of deflections using superposition, geometric and energy methods. Utilization of approximate methods to analyze large structures.

Prerequisite/Restriction: ENGR 2140

Semester(s) Traditionally Offered: Spring
CEE 3030 - Uncertainty in Engineering Analysis
2 credits
Principles of probability and statistics applied specifically to problems in civil and environmental engineering, including transportation, water quality, waste treatment, hydrology, and materials.
Semester(s) Traditionally Offered: Fall, Spring

CEE 3080 - Design of Reinforced Concrete Structures
3 credits
Design of reinforced concrete structural elements, simple and continuous reinforced beams, columns, joints, and one-way slabs. Includes concrete materials laboratory.
Prerequisite/Restriction: CEE 3010 and CEE 3020 (may be taken concurrently).
Semester(s) Traditionally Offered: Spring

CEE 3210 - Introduction to Transportation Engineering
3 credits
Introduction to basic concepts of roadway geometric design, and intersection and highway capacity analysis. Other topics include: traffic flow characteristics, traffic studies, signal design, and transportation project evaluation.
Prerequisite/Restriction: CEE 3030.
Semester(s) Traditionally Offered: Spring

CEE 3430 - Engineering Hydrology
3 credits
Provides a basic understanding of engineering hydrology through the hydrologic cycle, watershed characteristics, atmospheric water, rainfall-runoff processes, infiltration and evaporation, stream flow analysis, groundwater flow, and related designs.
Prerequisite/Restriction: CEE 3500.
Semester(s) Traditionally Offered: Spring

CEE 3500 - Civil and Environmental Engineering Fluid Mechanics
3 credits
Explores fluid properties, hydrostatics, fluid dynamics similitude, energy and momentum principles, closed conduit flow, open channel flow, and flow measurement.
Prerequisite/Restriction: MATH 1220; MATH 2210 or MATH 2250; ENGR 2010, ENGR 2030.
Semester(s) Traditionally Offered: Fall, Spring

CEE 3510 - Civil and Environmental Engineering Hydraulics
3 credits
Steady flow in open channel and closed circuits, nonuniform flow in open channels, combined energy losses in pipelines, and distribution in pipe networks. Includes laboratory and computer exercises in data collection, pipe networks, and unsteady and nonuniform flow.
Prerequisite/Restriction: CEE 3500.
Semester(s) Traditionally Offered: Spring

CEE 3610 - Environmental Management
3 credits
Introduction to environmental health, emphasizing relationships among environmental quality, public health, environmental and occupational health regulations, human health risk assessment, institutions, and engineered systems in environmental health management.
Prerequisite/Restriction: CHEM 1210; BIOL 1610 or Breadth Life Sciences course; MATH 1210.
Corequisite: ENGL 3080
Cross-listed as: PUBH 3610
Semester(s) Traditionally Offered: Fall

CEE 3640 - Water and Wastewater Engineering
4 credits
Engineering analysis and design of processes for treatment of water and wastewater. Major topics include water quality evaluation; physical, chemical, and biological treatment systems; design of facilities for production of drinking water and for treatment and reclamation of municipal and industrial wastewater; and
management of residuals from water and wastewater treatment facilities.

Prerequisite/Restriction: CEE 3610/PUBH 3610 and acceptance into professional program in engineering.

Semester(s) Traditionally Offered: Spring

CEE 3670 - Transport Phenomena in Bio-Environmental Systems
3 credits

Core course in both biological and environmental engineering. Students develop a detailed understanding of the principles, concepts, modes, and methods of calculating heat and mass transfer. Emphasis given to contaminant and nutrient flux, along with their state transformations, in order for the biological or environmental engineer to evaluate options for production, clean-up, and control of bio-environmental systems.

Prerequisite/Restriction: Minimum grade of C- in BENG 2400 or MAE 2300 and CEE 3500 or MAE 3420

Cross-listed as: BENG 3670

Semester(s) Traditionally Offered: Spring

CEE 3780 - Solid and Hazardous Waste Management
3 credits

Introduction to integrated management of municipal and industrial solid waste; household, commercial, and industrial hazardous waste; and resource recovery, recycling, and sustainability principles. Three lectures augmented by computer modeling and field trip experiences related to modern solid and hazardous waste management principles.

Prerequisite/Restriction: Acceptance into professional program in engineering.

Semester(s) Traditionally Offered: Fall

CEE 3870 - Professional/Technical Writing in Civil and Environmental Engineering (CI)
CI Communications Intensive
2 credits

Gives CEE students intensive practice with oral and written communication in business and technical CEE writing.

Corequisite: CEE 3610 PUBH 3610

Cross-listed as: PUBH 3870

Semester(s) Traditionally Offered: Fall

CEE 3880 - Civil Engineering Design I
1 credit

Introduction to senior engineering students’ integrated design experience. Design project is identified and proposal for its completion during the senior year is produced. Emphasizes project scheduling, and completion of design proposal.

Prerequisite/Restriction: ENGL 3080

Semester(s) Traditionally Offered: Spring

CEE 3890 - Environmental Engineering Design I
1 credit

Introduction to senior environmental engineering students’ integrated design experience. Design project identified and proposal for its completion during the senior year is produced, under mentoring of course instructor. Emphasizes project identification, project scoping, manpower and materials budgeting, project scheduling, and completion of design proposal.

Prerequisite/Restriction: CEE 3610/PUBH 3610

Corequisite: CEE 3640, CEE 3670/BENG 3670

Semester(s) Traditionally Offered: Spring

CEE 4200 - Engineering Economics
2 credits

Applications of the mathematics of finance to engineering decision making. Should be taken during the junior year of the engineering curriculum.

Semester(s) Traditionally Offered: Fall

CEE 4300 - Engineering Soil Mechanics
4 credits

Physical and mechanical properties of soils. Topics include: classification, permeability, soil stresses and
settlement analysis, soil strength, slope stability, lateral earth pressures, introduction to foundations, numerical solutions, and computer applications.

Prerequisite/Restriction: ENGR 2140 and CEE 3500 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring

CEE 4790 - Environmental Engineering Design II (CI)
CI Communications Intensive
2 credits

Provides senior environmental engineering students with integrated design experience in two-semester sequence. Design projects proposed in CEE 3890 completed under mentoring of course instructor. Emphasizes team work, scheduling, design calculations, and completion of design report.

Prerequisite/Restriction: CEE 3890 and concurrent enrollment in environmental engineering technical elective course during fall semester.

Semester(s) Traditionally Offered: Fall

CEE 4870 - Civil Engineering Design II (CI)
CI Communications Intensive
2 credits

Provides senior engineering students with integrated design experience in two-semester sequence. Design projects proposed in Junior Design Proposal placed on team work, scheduling, design calculations, and completion of design report.

Prerequisite/Restriction: CEE 3880; senior design technical elective should be taken concurrently.

Semester(s) Traditionally Offered: Fall

CEE 4890 - Environmental Engineering Design III (CI)
CI Communications Intensive
2 credits

Provides senior environmental engineering students with integrated design experience in two-semester sequence. Completion of design projects begun in CEE 4790, with presentation, report, and defense.

Prerequisite/Restriction: CEE 4790.

Semester(s) Traditionally Offered: Spring

CEE 4930 - Independent Study
1-3 credits

Laboratory design or research project on problem selected by student. Requires review of literature, preparation of proposal describing project, completion of design or research project, and preparation of report.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 5000 - Irrigation and Drainage of Agricultural Lands
3 credits

Soil-water-plant relationships; evapotranspiration and water requirements; effective water use; irrigation scheduling; infiltration; irrigation systems planning, drainage systems and their design and the impact of irrigation on water quality

Prerequisite/Restriction: CEE 3430, CEE 3500.

Cross-listed as: CEE 6000.

Semester(s) Traditionally Offered: Fall

CEE 5001 - Field Irrigation Systems Design and Evaluation
3 credits

Evaluation, design and management of surface, sprinkle,
and drip irrigation systems including system automation and maintenance.

Prerequisite/Restriction: CEE 5000 or CEE 6000

Cross-listed as: CEE 6001

Semester(s) Traditionally Offered: Fall

CEE 5003 - Remote Sensing of Land Surfaces
4 credits

Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology.

Prerequisite/Restriction: MATH 1100 or MATH 1210; and PHYS 2110 or PHYS 2210.

Cross-listed as: CEE 6003 and PSC 5003/PSC 6003 and WATS 5003/WATS 6003.

Semester(s) Traditionally Offered: Spring

CEE 5005 - Irrigation Conveyance and Control Systems
3 credits

Design, evaluation, and operation of irrigation distribution systems. Measurement and monitoring of flows and water levels, and canal and pipeline automation. Simulation of system hydraulics.

Cross-listed as: CEE 6005.

Semester(s) Traditionally Offered: Fall

CEE 5007 - Field Evaluation of Agricultural Irrigation Systems
2 credits

Field measurements in pressurized and surface irrigation systems for performance evaluation and determination of water application uniformity and efficiency.

Cross-listed as: CEE 6007.

Semester(s) Traditionally Offered: Summer

CEE 5008 - Management of Irrigation Systems
3 credits

Organizing, administering, and financing irrigation and drainage projects. Operation and maintenance of irrigation distribution systems. Simulation of command area water demands.

Prerequisite/Restriction: CEE 5000 or CEE 6000

Cross-listed as: CEE 6008

Semester(s) Traditionally Offered: Spring

CEE 5009 - Groundwater Systems Engineering I
3 credits

Groundwater exploration; well drilling and testing; pumping plant design, operation, and testing; aquifer evaluations; siting of multiple well systems. Development of pumping strategies for water supply and environmental control systems. Introduction to conjunctive use.

Prerequisite/Restriction: CEE 5000/CEE 6000.

Cross-listed as: CEE 6009.

Semester(s) Traditionally Offered: Fall

CEE 5010 - Matrix Analysis/Finite Element
3 credits

Analysis of structures using matrix methods. Application of software based on the stiffness method to practical analysis problems. Introduction of Finite Element method based on stiffness approach and mathematical derivation of simple finite elements, along with application to practical problems.

Prerequisite/Restriction: CEE 3020.

Semester(s) Traditionally Offered: Fall

CEE 5020 - Finite Element Methods in Solid Mechanics I
3 credits

Introduction to finite element methods and their application to the analysis and design of mechanical engineering systems.

Prerequisite/Restriction: MAE 3040.

Cross-listed as: MAE 5020.
Semester(s) Traditionally Offered: Fall
CEE 5050 - Design of Wood and Masonry Structures
3 credits
Design of beams, columns, joints, walls, and diaphragms in both wood and masonry materials. Current design codes will be utilized.
Prerequisite/Restriction: CEE 3080.

Semester(s) Traditionally Offered: Spring
CEE 5060 - Mechanics of Composite Materials I
3 credits
Stress-strain relations for nonisotropic composites, such as fiber-reinforced plastic laminates, properties and their uses, strength and life determination, and methods for designing using composite materials.
Prerequisite/Restriction: MAE 3040 or CEE 3010.

Cross-listed as: MAE 5060.

Semester(s) Traditionally Offered: Fall
CEE 5070 - Structural Steel Design
3 credits
Structural steel design using load and resistance factor design (LRFD) method. Focuses on design of structural beams, columns, and connections utilizing steel design codes.
Prerequisite/Restriction: CEE 3020, CEE 3080.

Semester(s) Traditionally Offered: Fall
CEE 5080 - Numerical Methods in Elasticity
3 credits
Prerequisite/Restriction: CEE 3020.

Cross-listed as: CEE 6080.

Semester(s) Traditionally Offered: Fall
CEE 5100 - Infrastructure Evaluation and Renewal
3 credits
Evaluation of existing structural systems and techniques to improve their performance. Focuses on structures which are seismically deficient.
Prerequisite/Restriction: CEE 3080, CEE 5070.

Semester(s) Traditionally Offered: Spring
CEE 5110 - Steel Bridge Design Project
3 credits
Civil Engineering undergraduate technical elective involving design of a steel bridge. Course topics include: geotechnical, structures, and materials analysis and design. Written reports and presentations required. Hours arranged.
Prerequisite/Restriction: CEE 3870 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring
CEE 5120 - Concrete Canoe Design Project
3 credits
Civil Engineering undergraduate technical elective involving design of a concrete canoe. Course topics include: hydraulic, structures, and materials analysis and design. Written reports and presentations required. Hours arranged.
Prerequisite/Restriction: CEE 3870 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring
CEE 5190 - Geographic Information Systems for Civil Engineers
3 credits
Introduction to GIS concepts addressing data structures, spatial entities, and queries. Topics include location referencing methods, data collection techniques, current applications, and institutional and organizational issues.
Cross-listed as: CEE 6190.

Semester(s) Traditionally Offered: Spring

CEE 5220 - Traffic Engineering
3 credits

Topics covered include characteristics, measurements, and analysis of volume, speed, density, and travel time; capacity and level of service analysis; signalization and traffic control devices.

Cross-listed as: CEE 6220.

Semester(s) Traditionally Offered: Spring

CEE 5230 - Geometric Design of Highways
3 credits

Principles of highway location and planning, with full consideration of economic, environmental, and other impacts. Capacity analysis of intersections and highways, passing-lane design, and risk-cost based horizontal and vertical alignment design. Introduction to design software through coursework and term projects.

Prerequisite/Restriction: CEE 3210.

Cross-listed as: CEE 6230.

Semester(s) Traditionally Offered: Spring

CEE 5240 - Urban and Regional Transportation Planning
3 credits

Examination of travel demand forecasting, data collection, and survey data analysis techniques. Focuses on transportation-land use interactions and impact of market-based policies on travel demand. Theories and applications of traditional and advanced trip distribution, mode choice, and route assignment models.

Cross-listed as: CEE 6240.

Semester(s) Traditionally Offered: Fall

CEE 5250 - Environmental Engineering Cooperative Practice
2 credits

Applied environmental employment with primary focus of work experience related to one of the environmental engineering specialty areas.

Prerequisite/Restriction: Senior status and permission of instructor.

Cross-listed as: CEE 6350.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 5350 - Foundation Analysis and Design
3 credits

Applications of theories studied in soil mechanics. Design considerations for various foundation types, including shallow foundations, driven piles, drilled shafts, walls, soil anchorages, and mechanically-stabilized earth support systems. Field investigation techniques and computer applications.

Prerequisite/Restriction: CEE 4300.

Cross-listed as: CEE 6380.

Semester(s) Traditionally Offered: Spring

CEE 5430 - Groundwater Engineering
3 credits

Explores fundamentals of groundwater hydrology by focusing on theory related to aquifer systems and flow analysis, regional groundwater balance, well hydraulics, aquifer testing, capture zone analysis, unsaturated flow, saltwater intrusion, and basics of flow modeling.

Prerequisite/Restriction: CEE 3430 or a similar hydrology course.
Cross-listed as: CEE 6430.

Semester(s) Traditionally Offered: Fall

CEE 5450 - Hydrologic Modeling
3 credits

Case studies and hands-on experience with hydrologic models and modeling methods for: (1) Design floods and spillway evaluation; (2) Flood plain delineation; (3) Dam break and inundation modeling; (4) Reservoir yield and time series modeling; (5) Reservoir inflow forecasting and operation; and (6) Urban hydrology, detention, and sedimentation basins.

Prerequisite/Restriction: CEE 3430.

Cross-listed as: CEE 6450.

Semester(s) Traditionally Offered: Spring

CEE 5460 - Water Resources Engineering
3 credits

Engineering design course covering a wide range of topics, including: surface and groundwater hydrology, statistical analysis, water law, hydroelectric power, water supply, irrigation, flood control, wastewater, drainage, dams and reservoirs, pipelines, open channels, and planning.

Prerequisite/Restriction: CEE 3430, CEE 3500, and CEE 4200.

Cross-listed as: CEE 6460.

Semester(s) Traditionally Offered: Fall

CEE 5470 - Sedimentation Engineering
3 credits

Explores river response, sediment transport, sediment and watershed yield, flow resistance, scour and erosion, and floodplain management.

Prerequisite/Restriction: CEE 3500.

Cross-listed as: CEE 6470.

Semester(s) Traditionally Offered: Spring

CEE 5470 - Sedimentation Engineering
3 credits

Explores river response, sediment transport, sediment and watershed yield, flow resistance, scour and erosion, and floodplain management.

Prerequisite/Restriction: CEE 3500.

Cross-listed as: CEE 6470.

Semester(s) Traditionally Offered: Spring

CEE 5500 - Open Channel Hydraulics with an Emphasis on Gradually Varied Flow
3 credits

Theory and applications of steady uniform and gradually varied flow under both subcritical and supercritical flow conditions. Solutions to multiple-network canal systems by solving systems of combined ordinary differential and algebraic equations. Method for defining natural channel systems and solving steady-state flows in them.

Prerequisite/Restriction: CEE 3500, CEE 3510.

Cross-listed as: CEE 6500.

Semester(s) Traditionally Offered: Fall

CEE 5540 - Hydraulic Structures Design
3 credits

Design of a variety of hydraulic structures is explored, both in the classroom and laboratory. Integrates student-developed, original computer programs; commercially available software; field trips; and hands-on laboratory design projects to further students' understanding of hydraulic structures.

Prerequisite/Restriction: CEE 3500 and CEE 3510.

Cross-listed as: CEE 6540.

Semester(s) Traditionally Offered: Fall

CEE 5550 - Hydraulics of Closed Conduits
3 credits

Includes design and operation of piping systems; economics; feasibility and impact of pipelines; pipe, pump, and valve selection; transient and cavitation analysis; and pipeline operation and filling.

Prerequisite/Restriction: CEE 3500 and CEE 3510.

Cross-listed as: CEE 6550.

Semester(s) Traditionally Offered: Spring

CEE 5610 - Environmental Quality Analysis
3 credits

Familiarizes students with various methods used for analysis of chemical parameters in environmental
samples (water, soil, and air). Provides students with skills enabling them to make proper selection/evaluation of analytical procedure and evaluate data generated.

Prerequisite/Restriction: CHEM 1210

Cross-listed as: BENG 5660, BENG 6660, CEE 6610

Semester(s) Traditionally Offered: Fall

CEE 5620 - Aquatic Chemistry
3 credits

Provides students with understanding of principles of aquatic chemistry, emphasizing chemical equilibria, acid-base reactions, complex formation, oxidation-reduction reactions, complex formation, and dissolution chemistry.

Prerequisite/Restriction: CHEM 1210 or equivalent.

Cross-listed as: PSC 5620.

Semester(s) Traditionally Offered: Fall

CEE 5670 - Hazardous Chemicals Handling and Safety
2 credits

Provides students with necessary skills and knowledge for working safely in areas associated with hazardous chemicals. Topics covered include: regulations, exposure routes, toxicology, chemical and physical hazards, personal protective equipment, sampling, monitoring, decontamination, and emergency response procedures.

Prerequisite/Restriction: CHEM 1210.

Cross-listed as: PUBH 5670.

Semester(s) Traditionally Offered: Spring

CEE 5680 - Soil-Based Waste Management
2 credits

Engineering management of wastes present in the vadose zone, including extraction, containment, and biological, chemical, and physical destruction technologies for sustainable agriculture and environmental quality. Aspects include engineering characterization, problem definition, treatment, and monitoring. Analysis and design emphasized through problems, examinations, and report writing.

Prerequisite/Restriction: Admission to Professional Engineering Program.

Cross-listed as: CEE 6680 and BENG 5680/BENG 6680.

Semester(s) Traditionally Offered: Spring

CEE 5690 - Natural Systems Engineering
3 credits

Explores integrated nature of river basin planning and management through introduction of most commonly employed assessment modeling frameworks and tools for modeling physical, chemical, and ecological processes at the study site to watershed scales. Topics include: water resources system modeling; physical, chemical, and ecological processes modeling; impact assessment methods; and risk assessment.

Prerequisite/Restriction: CEE 3610/PUBH 3610, CEE 3500, CEE 3510, CEE 3640; or instructor's permission.

Cross-listed as: CEE 6690.
Prerequisite/Restriction: CEE 5690/CEE 6690 or permission of instructor.

Cross-listed as: CEE 6720.

CEE 5730 - Analysis and Fate of Environmental Contaminants
3 credits

Provides students with understanding of methods used in analysis of environmental samples for organic contaminants. Examines various properties and processes determining the fate of organic contaminants in the environment. Taught first half of fall semester.

Prerequisite/Restriction: Grades of C- or better in CHEM 1210 and CHEM 1215.

Cross-listed as: CEE 6730 and PUBH 5730/PUBH 6730.

Semester(s) Traditionally Offered: Fall

CEE 5750 - Air Quality Measurements
2 credits

Laboratory-based course designed to familiarize participants with federally-approved reference measurement techniques for ambient and source air pollutants. Also provides understanding of temporal and spatial pollutant behavior.

Semester(s) Traditionally Offered: Spring

CEE 5760 - Hydraulic Structures Field Course
1 credit

Week-long course, with one day of in-class lectures and four days of field trips. Introduces students to field applications of hydraulic structures design. Field trips may involve backpacking to remote areas.

Semester(s) Traditionally Offered: Fall, Summer

CEE 5790 - Accident and Emergency Management
3 credits

Introduction to fundamentals of accident, hazard, and emergency management. Topics include legislation; chemical safety fundamentals; fire, explosion, and spill fundamentals; contaminant air transport fundamentals; hazard and risk assessment; dispersion applications; and hazard and risk management applications.

Prerequisite/Restriction: CHEM 1220.

Cross-listed as: PUBH 5790.

Semester(s) Traditionally Offered: Spring

CEE 5810 - Biochemical Engineering
3 credits

Fundamentals of bioreactor design and bioengineering to produce biological commodities. Emphasizes mathematical models of microbial and enzymatic processes in environmental and industrial biotechnology.

Prerequisite/Restriction: BENG 3200 and BENG 3670/CEE 3670; or BENG 3670/CEE 3670, CEE 3610/PUBH 3610, and CEE 3640.

Cross-listed as: CEE 6810 and BENG 5810/BENG 6810.

Semester(s) Traditionally Offered: Fall

CEE 5830 - Management and Utilization of Biological Solids and Wastewater
3 credits

Focuses on production, management, and disposal of biosolids and wastewater generated in food processing and wastewater treatment. Emphasizes beneficial use of biosolids and wastewater for agricultural production, forest enhancement, and land reclamation.

Prerequisite/Restriction: BENG 3670/CEE 3670.

Cross-listed as: CEE 6830 and BENG 5830/BENG 6830.

Semester(s) Traditionally Offered: Fall

CEE 5860 - Air Quality Management
3 credits

Introduction to air quality management. Explores the legislation, sources, behaviors, and effects of regulated and nonregulated air pollution, control techniques, and air dispersion modeling.

Prerequisite/Restriction: CEE 3640, CEE 3780, CEE 3670/BENG 3670, MAE 2300.

Semester(s) Traditionally Offered: Fall
CEE 5870 - Hazardous Waste Incineration  
2 credits 
Provides introduction to hazardous waste incineration principles. Topics include: thermodynamics, stoichiometry, thermochemistry, chemical kinetics, energy recovery, pollution control systems, and incinerator design principles. 
Prerequisite/Restriction: CEE 3780 and acceptance into professional program in engineering. 
Semester(s) Traditionally Offered: Spring 

CEE 5880 - Remediation Engineering  
3 credits 
Physical, chemical, and biological principles associated with remediation of hazardous waste contaminated soil, water, sediments, and air. Topics include: source removal and source control, product recovery, chemical treatment methods, biological remediation concepts, in situ processes, ex situ processes, and integrated process design. 
Prerequisite/Restriction: CEE 3780, CEE 3610/PUBH 3610. 
Semester(s) Traditionally Offered: Fall 

CEE 5900 - Cooperative Practice  
3 credits 
A planned work experience in industry. Detailed program must have prior approval. Written report required. 
Semester(s) Traditionally Offered: Fall, Spring, Summer 

CEE 6000 - Irrigation and Drainage of Agricultural Lands  
3 credits 
Soil-water-plant relationships; evapotranspiration and water requirements; effective water use; irrigation scheduling; infiltration; irrigation systems planning, drainage systems and their design and the impact of irrigation on water quality. 
Prerequisite/Restriction: CEE 3430, CEE 3500. 
Cross-listed as: CEE 5000. 
Semester(s) Traditionally Offered: Fall 

CEE 6001 - Field Irrigation Systems Design and Evaluation  
3 credits 
Evaluation, design and management of surface, sprinkle, and drip irrigation systems including system automation and maintenance. 
Prerequisite/Restriction: CEE 6000 or CEE 5000 
Cross-listed as: CEE 5001 
Semester(s) Traditionally Offered: Fall 

CEE 6003 - Remote Sensing of Land Surfaces  
4 credits 
Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology. 
Prerequisite/Restriction: MATH 1100 or MATH 1210; and PHYS 2110 or PHYS 2210. 
Cross-listed as: CEE 5003 and PSC 6003/PSC 5003 and WATS 6003/WATS 5003. 
Semester(s) Traditionally Offered: Spring 

CEE 6005 - Irrigation Conveyance and Control Systems  
3 credits 
Design, evaluation, and operation of irrigation distribution systems. Measurement and monitoring of flows and water levels, and canal and pipeline automation. Simulation of system hydraulics. 
Cross-listed as: CEE 5005. 
Semester(s) Traditionally Offered: Fall 

CEE 6007 - Field Evaluation of Agricultural Irrigation Systems  
2 credits 
Field measurements in pressurized and surface irrigation systems for performance evaluation and determination of water application uniformity and efficiency. 
Cross-listed as: CEE 5007.
Semester(s) Traditionally Offered: Summer
CEE 6008 - Management of Irrigation Systems
3 credits
Organizing, administering, and financing irrigation and drainage projects. Operation and maintenance of irrigation distribution systems. Simulation of command area water demands.
Prerequisite/Restriction: CEE 6000 or CEE 5000
Cross-listed as: CEE 5008

Semester(s) Traditionally Offered: Spring
CEE 6009 - Groundwater Systems Engineering I
3 credits
Groundwater exploration; well drilling and testing; pumping plant design, operation, and testing; aquifer evaluations; siting of multiple well systems. Development of pumping strategies for water supply and environmental control systems. Introduction to conjunctive use.
Prerequisite/Restriction: CEE 6000/CEE 5000.
Cross-listed as: CEE 5009.

Semester(s) Traditionally Offered: Fall
CEE 6010 - Finite Element Methods in Solid Mechanics II
3 credits
Advanced theory and applications of finite element methods to both static and dynamic solid mechanics problems.
Prerequisite/Restriction: CEE 5010.

Semester(s) Traditionally Offered: Spring
CEE 6020 - Structural Stability
3 credits
Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring
CEE 6040 - Structural Reliability
3 credits
Introduction to optimization techniques for linear and nonlinear, univariable, and multivariable functions with or without constraints. Computer applications, and applications to structural design.
Prerequisite/Restriction: CEE 3010 or permission of instructor.

Semester(s) Traditionally Offered: Fall
CEE 6050 - Experimental Methods in Structural Engineering
3 credits
Experimental techniques used in research and design in structural engineering and mechanics. Structural models. Theory and practical applications. Development of principles used to design research projects.
Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring
CEE 6070 - Mechanics of Composite Materials II
3 credits
Second course in composite materials. Stress-strain states of laminated composite structures, including interlaminar stresses, failure criteria, and hygrothermal stresses.
CEE 6080 - Numerical Methods in Elasticity
3 credits


Prerequisite/Restriction: CEE 3020.

Cross-listed as: CEE 5080.

Semester(s) Traditionally Offered: Fall

CEE 6090 - Theory of Plates and Shells
3 credits

Introduction to plate and shell theories. Development of bending and buckling of plates and shells through classical theory.

Prerequisite/Restriction: MAE 3040 or CEE 3010.

Cross-listed as: MAE 6090.

Semester(s) Traditionally Offered: Fall

CEE 6110 - Probabilistic and Statistical Methods in Engineering
3 credits

Explores principles related to probability and statistical methods commonly used in engineering practice, as well as applying these principles to the solution of engineering problems.

Prerequisite/Restriction: Undergraduate-equivalent knowledge in statistical methods or CEE 3030, plus 3000-level calculus and numerical methods.

Semester(s) Traditionally Offered: Fall

CEE 6120 - Bridge Engineering
3 credits

Provides students with a basic understanding of the facets of bridge design pertinent to a structural engineer. Focuses on analysis and design of a slab and prestressed concrete girder bridge.

Semester(s) Traditionally Offered: Fall

CEE 6130 - Structural Dynamics and Seismic Design
3 credits


Cross-listed as: MAE 6130.

Semester(s) Traditionally Offered: Spring

CEE 6140 - Advanced Reinforced Concrete
3 credits

Develops improved understanding of the behavior of reinforced concrete members. After students understand general behavior, codes are placed in proper perspective. Then students can design in situations not explicitly considered in current codes.

Semester(s) Traditionally Offered: Fall

CEE 6180 - Dynamics and Vibrations
3 credits


Prerequisite/Restriction: MAE 5300 or CEE 6130/MAE 6130.

Cross-listed as: MAE 6180.

Semester(s) Traditionally Offered: Spring

CEE 6190 - Geographic Information Systems for Civil Engineers
3 credits

Introduction to GIS concepts addressing data structures,
spatial entities, and queries. Topics include location referencing methods, data collection techniques, current applications, and institutional and organizational issues.

Cross-listed as: CEE 5190.

Semester(s) Traditionally Offered: Spring

CEE 6200 - Pavement Design
3 credits

Analysis and design of flexible and rigid pavements for highways and runways, including the design of overlays. Equal emphasis on current practice and advanced concepts of pavement management.

Prerequisite/Restriction: CEE 3010.

CEE 6210 - Transportation Systems Analysis
3 credits

Introduces systems approach to analysis of transportation services and infrastructure. Focuses on basic and advanced concepts, including operations research techniques, simulation, and artificial intelligence. Topics include facility sizing and location, financial and economic analysis of investment projects, and privatization.

Prerequisite/Restriction: CEE 3030 or equivalent.

Semester(s) Traditionally Offered: Fall

CEE 6220 - Traffic Engineering
3 credits

Topics covered include characteristics, measurements, and analysis of volume, speed, density, and travel time; capacity and level of service analysis; signalization and traffic control devices.

Cross-listed as: CEE 5220.

Semester(s) Traditionally Offered: Spring

CEE 6230 - Geometric Design of Highways
3 credits

Principles of highway location and planning, with full consideration of economic, environmental, and other impacts. Capacity analysis of intersections and highways, passing-lane design, and risk-cost based horizontal and vertical alignment design. Introduction to design software through coursework and term projects.

Prerequisite/Restriction: CEE 3210.

Cross-listed as: CEE 5230.

Semester(s) Traditionally Offered: Spring

CEE 6240 - Urban and Regional Transportation Planning
3 credits

Examination of travel demand forecasting, data collection, and survey data analysis techniques. Focuses on transportation-land use interactions and impact of market-based policies on travel demand. Theories and applications of traditional and advanced trip distribution, mode choice, and route assignment models.

Cross-listed as: CEE 5240.

Semester(s) Traditionally Offered: Fall

CEE 6250 - Transportation Safety
3 credits

Statistical analysis of transportation data, including safety and risk assessment. Regression and multivariate analysis, such as discriminant analysis, canonical correlation, and factor analysis. In-depth study of selected methodologies for analyzing transportation safety and designing counter measures.

Prerequisite/Restriction: CEE 3210 or equivalent.

Semester(s) Traditionally Offered: Fall

CEE 6260 - Public Transportation
3 credits

Principles of planning, design, and operation of transit systems in urban and rural areas. Determination of optimal route alignments, schedules, and station/stop spacings. Exploration of innovations in financing and pricing, including cost-cutting techniques.

Semester(s) Traditionally Offered: Spring

CEE 6270 - Traffic Operations Analysis
3 credits

Traffic flow fundamentals, macroscopic and microscopic
models of traffic flow, shock wave analysis, car following principles, queuing systems, and simulation.

Semester(s) Traditionally Offered: Spring
CEE 6290 - Transportation Network Analysis
3 credits
Analytical approaches and algorithms to the formulation and solution of the equilibrium assignment problem for transportation networks. Emphasis on user equilibrium, comparison with system optimal stochastic user equilibrium, origin-destination matrix estimation, and network design problems.

Semester(s) Traditionally Offered: Spring
CEE 6300 - Earth Structures
3 credits
Design and construction of earth and rockfill dams, embankments, excavations, and retaining structures.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.

Semester(s) Traditionally Offered: Spring
CEE 6310 - Environmental Geotechniques
3 credits
Geotechnical aspects of environmental systems, with concentration on waste containment facilities.
Prerequisite/Restriction: CEE 4300.

Semester(s) Traditionally Offered: Fall
CEE 6320 - Deep Foundations
3 credits
Analysis, design, and construction of deep foundations with emphasis on driver piles and drilled shafts.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.

Semester(s) Traditionally Offered: Spring
CEE 6330 - Ground Reinforcement, Improvement and Treatment
3 credits
Theory, design, and construction methods for ground reinforcement, improvement, and treatment applications.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.

Semester(s) Traditionally Offered: Fall
CEE 6340 - Laboratory and Field Methods in Geotechnical Engineering
3 credits
Subsurface investigation, field testing and instrumentation, and laboratory testing.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.

Semester(s) Traditionally Offered: Fall
CEE 6350 - Foundation Analysis and Design
3 credits
Applications of theories studied in soil mechanics. Design considerations for various foundation types, including shallow foundations, driven piles, drilled shafts, walls, soil anchorages, and mechanically-stabilized earth support systems. Field investigation techniques and computer applications.
Prerequisite/Restriction: CEE 4300.
Cross-listed as: CEE 5350.

Semester(s) Traditionally Offered: Fall
CEE 6360 - Geotechnical Principles
3 credits
Theoretical soil behavior. Hydraulic conductivity, compression, and shearing properties.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.

Semester(s) Traditionally Offered: Fall
CEE 6370 - Buried Structures
3 credits
Analysis of structural performance of buried structures (pipes, tanks, silos, etc.) using principles of mechanics of materials and finite element methods.
Prerequisite/Restriction: CEE 4300, CEE 5350/CEE 6350.
Semester(s) Traditionally Offered: Spring
CEE 6380 - Earthquake Engineering
3 credits
Covers wide variety of earthquake engineering topics, including seismology and earthquake source characterization, strong ground motion, seismic hazard analysis, wave propagation, soil dynamics, ground response, local site effects, liquefaction, seismic slope stability, soil improvement, vibrational analyses, and structural seismic design.

Prerequisite/Restriction: CEE 4300.

Cross-listed as: CEE 5380.

Semester(s) Traditionally Offered: Spring
CEE 6400 - Physical Hydrology
3 credits

Prerequisite/Restriction: CEE 3430.

Semester(s) Traditionally Offered: Fall
CEE 6410 - Water Resource Systems Analysis
3 credits
Systems formulation of decision problems. Solution by simulation and optimization, constrained and unconstrained optimization algorithms, case studies and applications to water supply, and quality and ecosystems management.

Semester(s) Traditionally Offered: Spring
CEE 6420 - Engineering Risk Assessment and Risk Management
3 credits
Comprises both quantitative risk assessment techniques and a range of issues in risk management. Examples drawn from various civil engineering subdisciplines such as: environmental engineering, geotechnical engineering, hydraulics and hydrology, structural engineering, transportation engineering, and water resource management.

Semester(s) Traditionally Offered: Spring
CEE 6430 - Groundwater Engineering
3 credits
Explores fundamentals of groundwater hydrology by focusing on theory related to aquifer systems and flow analysis, regional groundwater balance, well hydraulics, aquifer testing, capture zone analysis, unsaturated flow, saltwater intrusion, and basics of flow modeling.

Prerequisite/Restriction: CEE 3430 or a similar hydrology course.

Cross-listed as: CEE 5430.

Semester(s) Traditionally Offered: Fall
CEE 6440 - Geographic Information Systems in Water Resources
3 credits
Principles and operation of geographic information systems. Spatial hydrologic modeling done by developing a digital representation of the environment in the GIS, then adding functions simulating hydrologic processes. Includes term project on use of GIS in water resources.

Semester(s) Traditionally Offered: Fall
CEE 6450 - Hydrologic Modeling
3 credits
Case studies and hands-on experience with hydrologic models and modeling methods for: (1) Design floods and spillway evaluation; (2) Flood plain delineation; (3) Dam break and inundation modeling; (4) Reservoir yield and time series modeling; (5) Reservoir inflow forecasting and operation; and (6) Urban hydrology, detention, and sedimentation basins.

Prerequisite/Restriction: CEE 3430.

Cross-listed as: CEE 5450.
CEE 6460 - Water Resources Engineering
3 credits
Engineering design course covering a wide range of topics, including: surface and groundwater hydrology, statistical analysis, water law, hydroelectric power, water supply, irrigation, flood control, wastewater, drainage, dams and reservoirs, pipelines, open channels, and planning.

Prerequisite/Restriction: CEE 3430, CEE 3500, and CEE 4200.

Cross-listed as: CEE 5460.

Semester(s) Traditionally Offered: Fall

CEE 6470 - Sedimentation Engineering
3 credits
Explores river response, sediment transport, sediment and watershed yield, flow resistance, scour and erosion, and floodplain management.

Prerequisite/Restriction: CEE 3500.

Cross-listed as: CEE 5470.

Semester(s) Traditionally Offered: Spring

CEE 6480 - Groundwater Contamination: Modeling, Monitoring and Management
3 credits
In-depth exploration of physical, chemical, and biological processes related to fate and transport of contaminants in the subsurface, mathematical modeling, remediation technologies, and mitigation of contaminated sites using risk-based decision-making.

Prerequisite/Restriction: CEE 5430/CEE 6430 or equivalent.

Semester(s) Traditionally Offered: Fall

CEE 6490 - Integrated River Basin/Watershed Planning and Management
3 credits
Reviews fundamental building blocks of water resource institutions, emphasizing creation of institutions which are sensitive to a particular culture, economic, and political environment. Addresses institutional mission and regulatory roles, public participation, property and water rights, and elements of production.

Semester(s) Traditionally Offered: Spring

CEE 6500 - Open Channel Hydraulics with an Emphasis on Gradually Varied Flow
3 credits
Theory and applications of steady uniform and gradually varied flow under both subcritical and supercritical flow conditions. Solutions to multiple-network canal systems by solving systems of combined ordinary differential and algebraic equations. Method for defining natural channel systems and solving steady-state flows in them.

Prerequisite/Restriction: CEE 3500, CEE 3510.

Cross-listed as: CEE 5500.

Semester(s) Traditionally Offered: Fall

Civil and Environmental Engineering

CEE 6510 - Numerical Methods for Civil Engineers
3 credits
Engineering applications of approximation and interpolation, solution methods for ordinary differential equations, numerical solution of partial differential equations, nonparametric and parametric probability and regression estimation, and Monte Carlo and uncertainty analysis.

Semester(s) Traditionally Offered: Fall

CEE 6520 - Applied Hydraulics
3 credits
Basic fluid mechanics applied to wildland watershed systems and directed at nonengineering students. Explores nature of fluid state, fluid motion, and steady uniform and varied flow in open channels, under both subcritical and supercritical conditions. Surveys concepts of boundary layers, turbulence, convection, dispersal, and wave formation in unsteady flows. Emphasizes problem formulation and solving.
Prerequisite/Restriction: WATS 5490/WATS 4490; MATH 2280 (recommended).

Cross-listed as: WATS 6520.

Semester(s) Traditionally Offered: Fall

CEE 6530 - Unsteady Flows in Open Channels and Numerical Solutions of St.Venant Equations
3 credits

Derivation and physical meaning of the St. Venant equations, types of water waves, solutions to unsteady free surface flows based on the characteristics, and direct and iterative implicit methods of solution. Emphasizes solving unsteady flow problems in channel systems.

Prerequisite/Restriction: CEE 6500.

Semester(s) Traditionally Offered: Spring

CEE 6540 - Hydraulic Structures Design
3 credits

Explores design of a variety of hydraulic structures, both in the classroom and laboratory. Integrates student-developed, original computer programs; commercially available software; field trips; and hands-on laboratory design projects to further students’ understanding of hydraulic structures.

Prerequisite/Restriction: CEE 3500 and CEE 3510.

Cross-listed as: CEE 5540.

Semester(s) Traditionally Offered: Fall

CEE 6550 - Hydraulics of Closed Conduits
3 credits

Includes design and operation of piping systems; economics; feasibility and impact of pipelines; pipe, pump, and valve selection; transient and cavitation analysis; and pipeline operation and filling.

Prerequisite/Restriction: CEE 3500 and CEE 3510.

Cross-listed as: CEE 5550.

Semester(s) Traditionally Offered: Spring

CEE 6580 - Intermediate Fluid Mechanics
3 credits

Survey of mathematical methods used in fluid mechanics, including: potential flow solutions (complex variables), laminar flow and turbulent flow solutions, boundary layer theory, and introduction to dispersion in fluid.

Semester(s) Traditionally Offered: Fall

CEE 6590 - Evaluation of Hydrologic Modeling Systems
3 credits

Focuses on different techniques for evaluating the performance, diagnosing the model structure, and assessing the uncertainty of hydrologic modeling systems. Examines mathematical and systems theory methods for examining the interrelation between model inputs and outputs.

Prerequisite/Restriction: CEE 6400.

Semester(s) Traditionally Offered: Spring

CEE 6600 - Environmental Chemistry of Inorganic Contaminants
2 credits

Inorganics of environmental concern discussed in terms of processes affecting their behavior in soil and water systems. Explores remediation of environmental systems contaminated with inorganic pollutants.

Semester(s) Traditionally Offered: Spring

CEE 6610 - Environmental Quality Analysis
3 credits

Familiarizes students with various methods used for analysis of chemical parameters in environmental samples (water, soil, and air). Provides students with skills enabling them to make proper selection/evaluation of analytical procedure and evaluate data generated.

Prerequisite/Restriction: CHEM 1210

Cross-listed as: BENG 5660, BENG 6660, CEE 5610

Semester(s) Traditionally Offered: Fall

CEE 6620 - Field Sampling and Analysis of Environmental Systems
Explores applied field sampling, as well as field and laboratory techniques used in the monitoring of environmental media. Includes theory and practice of field site monitoring and measurement of physical, chemical, and biological processes in the environment.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall

**CEE 6630 - Process Dynamics in Environmental Engineering Systems**

3 credits

Fundamental principles used in analysis and simulation of environmental systems. Emphasizes small particle dynamics, reaction kinetics, mass transfer, reactor analysis and design, transport phenomena, and development and solution of mathematical models to describe natural and engineered environmental systems including both analytical and numerical methods.

Prerequisite/Restriction: CEE 3500, CEE 3510.

Semester(s) Traditionally Offered: Fall

**CEE 6640 - Physical and Chemical Environmental Process Engineering**

3 credits

Principles of physical and chemical environmental engineering processes, including sedimentation, filtration, gas transfer, aeration, absorption, ion exchange, membrane processes, coagulation, flocculation, precipitation, oxidation, reduction, and disinfection. Process modeling and analysis applications in treatment of water, wastewater, industrial wastes, vapor treatment, and soil remediation.

Prerequisite/Restriction: CEE 5610/CEE 6610 and CEE 6630.

Corequisite: CEE 6650 and CEE 6670.

Semester(s) Traditionally Offered: Spring

**CEE 6650 - Biological Processes in Environmental Engineering**

3 credits

Theory and design of biological processes used in environmental engineering. Stoichiometric, energetic, kinetic and molecular biological analysis of processes for treatment of contaminated water, soil and air; modeling and design of aerobic and anaerobic suspended growth and fixed-film processes for treatment of municipal and industrial waste streams; nutrient removal; bioenergy production, and bioremediation.

Prerequisite/Restriction: CEE 6630

Corequisite: CEE 6640 and CEE 6670

Semester(s) Traditionally Offered: Spring

**CEE 6660 - Environmental and Hydrologic Data Analysis and Experimentation**

3 credits

Data analysis and experimental design for environmental science and engineering. Graphical data analysis, parametric and nonparametric statistics, frequency distributions, hypothesis testing, propagation of variance, censored data, correlation and causation, parameter estimation, factorial experimental design and response surfaces, environmental monitoring and uncertainty, nonparametric estimation, time series, and kernel density estimation.

Semester(s) Traditionally Offered: Fall

**CEE 6670 - Environmental Process Laboratory**

2 credits

Laboratory testing to demonstrate physical, chemical, and biological principles utilized in environmental engineering processes.

Corequisite: CEE 6640, CEE 6650.

Semester(s) Traditionally Offered: Spring

**CEE 6680 - Soil-Based Waste Management**

2 credits

Engineering management of wastes present in the vadose zone, including extraction, containment, and biological, chemical, and physical destruction technologies for sustainable agriculture and environmental quality. Aspects include engineering characterization, problem definition, treatment, and monitoring. Analysis and design emphasized through
Cross-listed as: CEE 5580 and BENG 6680/BENG 5680.

Semester(s) Traditionally Offered: Spring

CEE 6690 - Natural Systems Engineering
3 credits

Explores integrated nature of river basin planning and management through introduction of most commonly employed assessment modeling frameworks and tools for modeling physical, chemical, and ecological processes at the study site to watershed scales. Topics include: water resources system modeling; physical, chemical, and ecological processes modeling; impact assessment methods; and risk assessment.

Prerequisite/Restriction: CEE 3610/PUBH 3610, CEE 3500, CEE 3510, CEE 3640; or permission of instructor.

Cross-listed as: CEE 5690.

CEE 6710 - Environmental Engineering Microbial Ecology
2 credits

Principles of microbial ecology applied to engineered and natural systems.

Prerequisite/Restriction: BIOL 3300, CEE 3610/PUBH 3610.

Semester(s) Traditionally Offered: Fall

CEE 6720 - Natural Systems Modeling
3 credits

Provides hands-on approach to utilizing several of the most commonly applied modeling tools employed to estimate physical, chemical, and biological impacts of existing and proposed water resource systems. Focuses on utility and limitations of specific modeling approaches, while also stressing integrative multi-disciplinary nature of impact assessment frameworks.

Prerequisite/Restriction: CEE 6690/CEE 5690 or permission of instructor.

Cross-listed as: CEE 5720.

CEE 6730 - Analysis and Fate of Environmental Contaminants
3 credits

Provides students with understanding of methods used in analysis of environmental samples for organic contaminants. Examines various properties and processes determining the fate of organic contaminants in the environment. Taught first half of fall semester.

Prerequisite/Restriction: Grades of C- or better in CHEM 1210 and CHEM 1215.

Cross-listed as: CEE 5730 and PUBH 6730/PUBH 5730.

Semester(s) Traditionally Offered: Fall

CEE 6740 - Environmental Quality Modeling
3 credits

Development and application of mathematical models for conventional and toxic pollutants in environmental systems. Description of advection, dispersion, sediment transport, partitioning, interphase transfer, and transformation kinetics applied to organic and inorganic pollutants. Equilibrium, steady state, and nonsteady systems.

Semester(s) Traditionally Offered: Spring

CEE 6750 - Eco-Hydraulics for Natural Systems Engineering
4 credits

Provides students with advanced multi-disciplinary modeling course in the application of hydraulics and water resource modeling in light of impact assessment frameworks for natural systems modeling. Focuses on application on one-dimensional and two-dimensional hydraulic modeling as basis for examining quantitative impacts on stream and riparian ecosystems under altered flow, as well as channel conditions with particular emphasis on fish and aquatic macro-invertebrates.

Prerequisite/Restriction: CEE 6690/CEE 5690.

Semester(s) Traditionally Offered: Fall
CEE 6800 - Division of Environmental Engineering Seminar
1 credit
Environmental engineering graduate seminar for faculty, student, and guest lecturer research presentations.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6810 - Biochemical Engineering
3 credits
Fundamentals of bioreactor design and bioengineering to produce biological commodities. Emphasizes mathematical models of microbial and enzymatic processes in environmental and industrial biotechnology.

Prerequisite/Restriction: BENG 3200 and BENG 3670/CEE 3670; or BENG 3670/CEE 3670, CEE 3610/PUBH 3610, and CEE 3640.

Cross-listed as: CEE 5810 and BENG 6810/BENG 5810.

Semester(s) Traditionally Offered: Fall

CEE 6830 - Management and Utilization of Biological Solids and Wastewater
3 credits
Focuses on production, management, and disposal of biosolids and wastewater generated in food processing and wastewater treatment. Emphasizes beneficial use of biosolids and wastewater for agricultural production, forest enhancement, and land reclamation.

Prerequisite/Restriction: BENG 3670/CEE 3670.

Cross-listed as: CEE 5830 and BENG 6830/BENG 5830.

Semester(s) Traditionally Offered: Fall

CEE 6840 - Application of Technology Transfer for Teachers
2 credits
Focuses on application of modern instructional strategies to the transfer of technology and science to the public education setting. Part of a series of six courses.

Prerequisite/Restriction: Participation in an In*Step Science Program in the public schools.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6850 - Atmospheric and Air Pollution Chemistry
3 credits
Provides students with training in the fundamentals of natural and anthropogenically impacted atmospheric chemistry, primarily focusing on tropospheric meteorology, kinetics, and photochemistry, including gas-phase, aqueous-phase, and aerosol-forming reactions.

Prerequisite/Restriction: CEE 5680/CEE 6680 or upper-level chemistry or permission of instructor.

Semester(s) Traditionally Offered: Spring

CEE 6900 - Directed Reading
1-3 credits
Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6930 - Special Problems
1-4 credits
Independent or group study of engineering problems not covered in regular course offerings.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6940 - Snow Hydrology
3 credits
Focuses on snow science, including atmospheric formation, precipitation, distribution on the landscape, metamorphosis prior to melt, and snow pack melt dynamics. Also covers related issues, such as snow melt modeling, remote sensing, water supply, and biogeochemical cycling.

Prerequisite/Restriction: WATS 3700 or CEE 3430, or permission of instructor.

Cross-listed as: WATS 6940.
CEE 6950 - Practical Training
3 credits

Intended for graduate students who are interested in practical training before graduation.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6970 - Thesis Research
1-6 credits

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 6990 - Continuing Graduate Advisement
1-9 credits

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 7000 - Groundwater Systems Engineering II
4 credits

System analysis techniques applied to aquifer and stream/aquifer management. Development of economically, quantitatively, and environmentally optimal strategies for alternative water policies. Modeling techniques for managing aquifer systems under volumetric, economic, and environmental management goals.
Prerequisite/Restriction: CEE 5470/CEE 6470 or CEE 6500.
Semester(s) Traditionally Offered: Spring

CEE 7050 - Plasticity
3 credits

Analysis of stresses, deformation, and collapse in devices constructed of plastic material.
Prerequisite/Restriction: MAE 6040 or CEE 6080/CEE 5080 or permission of instructor.

CEE 7080 - Advanced Plate and Shell Theory
3 credits

Analysis of plate and shell structures by classical and numerical methods. Emphasis on numerical solutions.
Prerequisite/Restriction: Permission of instructor.
Cross-listed as: MAE 7080.
Semester(s) Traditionally Offered: Fall

CEE 7110 - Constitutive Modeling and Structural Response of Engineering Materials
3 credits

Prerequisite/Restriction: Permission of instructor.
Semester(s) Traditionally Offered: Fall

CEE 7120 - Advanced Topics in Civil Engineering
3 credits

Discussion of current research topics conducted by civil and other engineering faculty and staff at USU and elsewhere. Offered on either arranged or regular basis. Topics and times can be arranged with instructor and advisor.
Prerequisite/Restriction: Permission of instructor.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 7150 - Effective Engineering Instruction
1 credit

Seminar-style course designed to give PhD candidates insight and guidance for becoming effective engineering instructors.
Prerequisite/Restriction: Permission of instructor.
Semester(s) Traditionally Offered: Fall
CEE 7160 - Successful Faculty Strategies  
1 credit  
Seminar-style course designed to give PhD candidates insight and guidance into the expectations and approaches for becoming successful university faculty members.  
Semester(s) Traditionally Offered: Spring

CEE 7170 - Research Methods in Engineering  
1 credit  
Seminar-style course designed to give PhD candidates insight and guidance into research methods in engineering.  
Semester(s) Traditionally Offered: Fall

CEE 7270 - Travel Demand and Supply Analysis  
3 credits  
Semester(s) Traditionally Offered: Fall

CEE 7300 - Theoretical Soil Mechanics  
3 credits  
Advanced studies of stress distribution in soil masses, shear strength, consolidation, constitutive modeling, and finite applications.  
Prerequisite/Restriction: CEE 6360.  
Semester(s) Traditionally Offered: Spring

CEE 7310 - Fundamentals of Soil Behavior  
3 credits  
The influence of clay mineralogy, clay chemistry, and soil origin on the engineering properties of soil.  
Prerequisite/Restriction: CEE 6360.  
Semester(s) Traditionally Offered: Fall

CEE 7320 - Advanced Soil Dynamics  
3 credits  
Advanced studies in the response of soil structures and foundations to dynamic loads.  
Prerequisite/Restriction: CEE 6360.  
Semester(s) Traditionally Offered: Fall

CEE 7430 - Stochastic Hydrology  
3 credits  
Stochastic description of hydrologic variability in time, space, and space-time. Markov processes, time series synthesis and forecasting, spectral analysis, spatial interpolation and random field simulation, data imputation, and parameter estimation for physical models. Lattice and Markov chain Monte Carlo methods, simulated annealing, and Gibbs processes. Applications to rainfall, streamflow, groundwater quality and quantity, and subsurface characterization.  
Semester(s) Traditionally Offered: Spring

CEE 7460 - Advanced Topics in Hydrology  
3 credits  
Topics of prominent current interest for advanced MS and PhD students. Can be repeated for credit with consent of instructor.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Spring

CEE 7470 - Continuous and Macro-Scale Hydrologic Modeling  
3 credits  
Presents existing different approaches to the modeling of continuous hydrologic systems and long-term forecasting. Reviews and analyzes lumped and distributed catchment and macroscale hydrologic models, as well as state-of-the-art computer codes.  
Prerequisite/Restriction: CEE 6440.  
Semester(s) Traditionally Offered: Fall

CEE 7520 - Mathematical Methods for Civil and Environmental Engineers  
3 credits
Applications of advanced mathematical methods to analyze civil and environmental engineering problems, including analysis of dynamical systems, solutions to nonlinear and stochastic differential equations, Fourier analysis, and neural networks.

Semester(s) Traditionally Offered: Spring

CEE 7580 - Advanced Finite Element Analysis in Fluid Mechanics
3 credits

Application of the finite element method of analysis to problems in fluid mechanics. Use of higher order element to two- and three-dimensional flows.

Prerequisite/Restriction: CEE 3510 or MAE 3420, CEE 5020/MAE 5020.

Cross-listed as: MAE 7580.

Semester(s) Traditionally Offered: Spring

CEE 7970 - Dissertation Research
1-10 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CEE 7990 - Continuing Graduate Advisement
1-9 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Classics

CLAS 3160 - Classical Drama and Society
3 credits

Review and analysis of the nature and function of ancient Greek and Roman drama in its theatrical, historical, and social context. Focuses on the major dramatists of classical antiquity.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Cross-listed as: HIST 3160.

Semester(s) Traditionally Offered: Fall, Spring

CLAS 3210 - Classical Mythology
3 credits

Introduces major myths of the Classical world. Explores how these myths serve as keys to understanding the documents and arts of Classical civilization.

Cross-listed as: ART 3210.

Semester(s) Traditionally Offered: Fall, Spring

College of Humanities and Social Sciences

CHSS 1100 - Practice and Philosophies of Civic Responsibility
2 credits

Designed to help students come to a personal understanding of community issues, service and leadership through learning based on volunteer service experience, readings, group discussion and interaction, and critical reflection.

Campus: USU Eastern only

CHSS 1250 - Interdisciplinary Workshop
1-5 credits

Check with major department for limitations on number of credits that can be counted for graduation.

Repeatable for credit

Semester(s) Traditionally Offered: Fall, Spring, Summer

CHSS 2250 - Introductory Internship/Co-op
1-5 credits
Introductory-level educational work experience in an internship or cooperative education position approved by the department and/or the College of Humanities and Social Sciences. Check with major department for limitations on number of credits that can be counted for graduation.

Repeatable for credit
Pass/Fail Only
Semester(s) Traditionally Offered: Fall, Spring, Summer

CHSS 3050 - The Humanities and Social Sciences in Cultural Context
3 credits

Interdisciplinary study of a work, figure or theme in the humanities and/or social sciences. Topics vary.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring

CHSS 4250 - Advanced Internship/Co-op
1-15 credits

Internship or cooperative education position of a more professional level, with increased complexity, approved by the college.

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring, Summer

CHSS 4900 - Rhetoric Associates Seminar
2 credits

Training course for students to learn how to effectively peer tutor fellow students in writing. Overview of theory, grammar, and interpersonal communication skills.

Semester(s) Traditionally Offered: Fall

CHSS 4910 - Study Abroad
1-20 credits

A semester study abroad experience through a student exchange program.

Prerequisite/Restriction: Approval from the Study Abroad Office

SP (Satisfactory Progress) Only

CHSS 5250 - Interdisciplinary Workshop
1-5 credits

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

CHSS 6250 - Graduate Internship/Co-op
1-15 credits

Internship or cooperative education position approved by the department and/or the College of Humanities and Social Sciences. Check with major department for limitations on number of credits that can be counted for graduation.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

CHSS 6910 - Study Abroad
1-12 credits

A semester study abroad experience through a student exchange program.

Prerequisite/Restriction: Approval from the Study Abroad Office

Semester(s) Traditionally Offered: Fall, Spring, Summer

Communicative Disorders and Deaf Education

COMD 2400 - Orientation and Observation
1 credit

Introduces students to the professional responsibilities required of communicative disorders and deaf education specialists in a variety of employment settings. Observation of normal/abnormal communication abilities. Language, hearing, and speech disorders.

Repeatable for credit
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

COMD 2500 - Language, Speech, and Hearing Development
3 credits
Language, speech, and hearing development throughout life and strategies for facilitating development. Requisites for human communication and language learning. Theoretical models of language acquisition and intracultural/intercultural differences.

Semester(s) Traditionally Offered: Fall, Spring

COMD 2600 - Introduction to Communication Disorders
2 credits

Addresses undergraduate study of types of communication disorders existing across the lifespan. Includes characteristics, etiologies, and brief introduction to assessment and intervention practices. Also explores fields of speech language pathology and audiology.

Semester(s) Traditionally Offered: Fall

COMD 2910 - Sign Language I (CI)
CI Communications Intensive
4 credits

Introduction to American Sign Language and Deaf Culture. Basic study of grammatical structure of ASL, as well as the history and folklore associated with the culture. Students have ample opportunities for laboratory practice of ASL. Course taught in a no-voice, total immersion atmosphere.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3050 - Practicum and Methods in Teaching Children who are Deaf and Hard of Hearing
1-3 credits

Students investigate various aspects of teaching methods through field experiences in the classroom, curriculum and effective teaching assessment, observation and reflections, and guest speakers focusing on areas of mathematics and science in the primary grades.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

COMD 3080 - American Sign Language Practicum
1 credit

Provides opportunities for practice and continued improvement of receptive and expressive skills in American Sign Language.

Repeatable for credit.

COMD 3100 - Fundamentals of Anatomy for Speech and Language
3 credits

Basic study of the structures and functions associated with the subprocesses of speech and hearing, including respiration, phonation, resonation, articulation, neurology, and hearing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3120 - Disorders of Articulation and Phonology
3 credits

Introduction to articulation and phonological disorders and related problems. Emphasis directed at evaluation, management, and measures of success. Principles of programming are presented.

Prerequisite/Restriction: COMD 2500 and COMD 3500.

Semester(s) Traditionally Offered: Spring

COMD 3300 - Introduction to Blindness and Visual Impairment
3 credits

Explores learning characteristics and needs of children and youth (preschool through high school) who are blind or visually impaired, as well as educational settings they are in and professionals who serve them.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3320 - The Human Eye and Visual System
3 credits

Covers structure and function of the human eye and visual system. Addresses the most common eye conditions causing visual impairment in children and youth, along with their implications and treatment. Explores the role of eye care specialists.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3330 - Introduction to Low Vision
3 credits

Introduction to the needs of students having low vision.
Methods of adapting materials, activities, and the environment to better meet the learning needs of these students. Includes training in the use of low-vision aids. Explores the role of professionals and their services.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3340 - The Role of Paraeducators with Individuals Who are Blind or Visually Impaired
3 credits

Addresses the roles and responsibilities of paraeducators who work in educational settings with children and youth who are blind or visually impaired. Covers the role of the educational team, as well as how the paraeducator functions as part of that team.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3350 - Introduction to Multiple Disabilities
3 credits

Presents introductory information about various disabilities, including those associated with sensory losses. Covers neurological issues related to brain development and learning. Addresses communication issues and strategies for working with individuals having multiple disabilities and sensory loss.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3360 - Introduction to Braille
3 credits

Introduction to braille literacy, as well as braille codes, software, and technology used to produce braille. Teaches students how to read and write uncontracted braille using a slate and stylus and a braille writer (actual or simulated).

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 3400 - Acoustics and Anatomy of the Ear
3 credits

Principles of physical acoustics as applied to Communicative Disorders. Course includes anatomy, physiology, and metabolism of the human auditory system.

Semester(s) Traditionally Offered: Spring

COMD 3500 - Phonetics/Developmental Phonology
3 credits

of the development of the phonological subsystem in English and the acoustic and physiological characteristics of speech sounds.

Semester(s) Traditionally Offered: Fall

COMD 3650 - Clinical Processes and Behavior (CI)
CI Communications Intensive
2 credits

A consideration of clinical management as an interactive process. Interpersonal sensitivity, technical knowledge and skills, professional infection-control measures, and behavior modification are core considerations.

Prerequisite/Restriction: COMD 2500 and PSY 1010.

Semester(s) Traditionally Offered: Spring

COMD 3700 - Basic Audiology
3 credits

Study of pure tone audiometry, including clinical masking, speech audiometry, and clinical immittance measures. Laboratory exercises are required.

Prerequisite/Restriction: COMD 3400.

Semester(s) Traditionally Offered: Fall

COMD 3910 - Sign Language II
4 credits

Provides a more in-depth study of American Sign Language, Deaf folklore and literature, and the grammatical structure of ASL. Focuses on unique number systems, idioms, lexicalized fingerspelling, and ASL poetry. Course taught with a total immersion approach, with ample opportunities for practice with fluent users of ASL in the lab.

Prerequisite/Restriction: COMD 2910 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 4100 - Clinical Practicum in Speech-Language Pathology (CI)
CI Communications Intensive
Cooperative Practicum/Work Experience
3 credits

Provides practicum and work experience in serving children and youth having deaf-blindness or blindness. Assignments and projects vary, depending upon the student and the setting.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Clinical Practicum in Audiology
1-2 credits

Supervised diagnostic and treatment practicum with individuals with hearing loss.

Prerequisite/Restriction: COMD 3400, COMD 3650, COMD 3700, and permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Assessment and Treatment of Communicative Disorders in the Pediatric Population
3 credits

Designed to give students an introductory understanding of assessment and treatment procedures when working with the pediatric population having communicative disorders. Addresses multicultural considerations in assessment and treatment of communicative disorders.

Semester(s) Traditionally Offered: Spring

Senior Thesis
1-6 credits

Student-initiated research project under faculty supervision.

Prerequisite/Restriction: Satisfactory grade point average, instructor recommendation, and approval of Honors Committee.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Teaching Speech to Deaf and Hard of Hearing Children
3 credits

Evaluative and instructional models, processes, and methodologies in the development of speech for children who are deaf and hard of hearing.

Cross-listed as: COMD 6630.

Introduction to Deaf-blindness
3-5 credits

Covers combined vision and hearing loss, as well as its impact on learning, communication, and overall development. Also explores neurological issues and other senses.

Cross-listed as: COMD 6660.

Language and Literacy Development and Assessment of Individuals who are Deaf and Hard of Hearing Children: Preschool
3 credits

Evaluation and development of language and literacy (ASL/English) skills in individuals who are deaf and hard of hearing. Discussion of current research regarding the development and assessment of emergent literacy skills (ASL/English) and how to foster a literacy-rich environment in preschool settings. Graduate-level course syllabus will be differentiated.

Prerequisite/Restriction: COMD 3910

Cross-listed as: COMD 6750

Early Intervention for Children who are Deaf and Hard of Hearing
3 credits
Family-centered early intervention for infants and young children who are deaf and hard of hearing. Identification, testing, hearing aids, communication, auditory, language, and emerging literacy programming, parent and family programs, mentoring.

Cross-listed as: COMD 6760.

Semester(s) Traditionally Offered: Fall

COMD 4770 - Audiology and Teachers of Children who are Deaf and Hard of Hearing
3 credits

Focuses on the fields of hearing science and audiology and how information from these disciplines relates to education of deaf and hard of hearing children.

Cross-listed as: COMD 6770.

Semester(s) Traditionally Offered: Fall

COMD 4780 - Socio-Cultural Aspects of Deafness
3 credits

Leads students to understand how society, political institutions, and education have impacted the Deaf culture.

Cross-listed as: COMD 6780.

Semester(s) Traditionally Offered: Fall

COMD 4790 - Psychological Principles and Individuals who are Deaf and Hard of Hearing
3 credits

Psychological theories and research used to describe the deaf and hard of hearing. Exploration of principles that can be used in helping these individuals achieve emotional well-being.

Cross-listed as: COMD 6790 and PSY 4790/PSY 6790.

Semester(s) Traditionally Offered: Spring

COMD 4840 - Children with Combined Vision, Hearing Loss, and Multiple Disabilities
3-5 credits

Designed to teach students how to implement appropriate intervention strategies for infants and young children (ages 0-3) related to communication, cognition, touch, play, self-care, orientation to the environment, etc., and how to help the family learn to communicate with their child.

Cross-listed as: COMD 6840.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 4910 - Sign Language III (CI)
CI Communications Intensive
4 credits

Students receive individual, detailed feedback concerning their expressive ASL skills. Students present material in American Sign Language, with a focus on improving identified areas of weakness. Cooperative learning is encouraged. Experiences with fluent users of ASL and interpreter mentors via the lab provide students with basic interpreting skills.

Prerequisite/Restriction: COMD 2910 and COMD 3910; or permission of instructor.

Cross-listed as: COMD 6910.

Semester(s) Traditionally Offered: Fall, Spring

COMD 4920 - Sign Language IV
4 credits

Basic concepts of linguistics are explored, as well as an in-depth analysis of ASL history, grammatical structure, and ASL poetry. Students apply linguistic principles to the analysis of American Sign Language, with ample opportunities to interact with fluent users of ASL via the lab experience.

Prerequisite/Restriction: COMD 2910 and COMD 3910; or permission of instructor.

Cross-listed as: COMD 6920.

Semester(s) Traditionally Offered: Spring

COMD 5000 - Communication Disorders Seminars
0.5-3 credits

Special colloquial offerings in communicative disorders and deaf education.
Communicative Disorders and Deaf Education

COMD 5070 - Speech Science
3 credits

Explores contemporary theory, research findings, clinical applications, and measurement and analysis of normal speech and voice production and perception. Speech production subsystems of respiration, phonation, articulation, and resonance are examined in detail through the collection and analysis of physiologic data.

Semester(s) Traditionally Offered: Fall

COMD 5100 - Language Science
3 credits

Study of clinical analysis of syntactic and morphological properties of speech.

Semester(s) Traditionally Offered: Spring

COMD 5200 - Language Assessment and Intervention for Children Birth to Age Five
3 credits

Language assessment and intervention for children from birth to age five, including language sampling and analysis procedures, interpreting formal and informal testing, facilitating language through strategies and corresponding theories, planning clinical management and intervention, and enhancing emergent literacy.

Prerequisite/Restriction: COMD 2500, COMD 5100, or equivalent.

Semester(s) Traditionally Offered: Spring

COMD 5250 - Diagnosis and Treatment of Adults in Speech Language Pathology
3 credits

Introduction to the diagnostic and treatment methods used for communication disorders associated with the adult population. Discusses specific disorders, including aphasia, apraxia, dysarthria, laryngectomy, stuttering, dysphagia, voice, and foreign accent/dialect. Explores cognitive and social aspects of communication.

Semester(s) Traditionally Offered: Spring

COMD 5330 - Pediatric Aural Rehabilitation
3 credits

Ramiifications of hearing loss for children. Rehabilitative audiolgic techniques and programs to improve communication abilities of children having hearing loss.

Semester(s) Traditionally Offered: Spring

COMD 5600 - Classroom Teaching Using American Sign Language
3 credits

Emphasizes development and presentation of lesson plans for different grade levels. Focuses on developing students’ abilities in moving from and linking Language 1 (American Sign Language) and Language 2 (the written form of English).

Prerequisite/Restriction: COMD 2910, COMD 3910, and COMD 4910.

Semester(s) Traditionally Offered: Spring

COMD 5610 - Introduction to Education of the Deaf and Hard of Hearing
3 credits

Overview of the history of educating children who are deaf and hard of hearing. Presents an overview of techniques, anatomy of the ear, and different
philosophical views for teaching people who are deaf and hard of hearing.

Semester(s) Traditionally Offered: Fall

COMD 5620 - Teaching School Subjects to Students who are Deaf and Hard of Hearing
3 credits

Focuses on effective strategies for teaching students who are deaf and hard of hearing across curricular subject areas. Emphasizes infusion of language and reading into all content areas.

Semester(s) Traditionally Offered: Spring

COMD 5630 - Literacy Methods in Early Childhood Deaf Education
3 credits

Study of early childhood curriculum, methodology, and learning environments specific to deaf and hard-of-hearing children and ASL/literacy development. Examination of current issues and hands-on application of research-based methods pertinent to early childhood Bilingual-Bicultural Deaf education programming.

Prerequisite/Restriction: COMD 4750/COMD 6750, COMD 4910.

Semester(s) Traditionally Offered: Spring

COMD 5730 - Children with Multiple Disabilities and Hearing Loss
3 credits

Students will obtain a basic understanding of the problems and characteristics of children who have hearing loss plus one or more disabling conditions. Teaching strategies will also be discussed.

Cross-listed as: COMD 6730.

Semester(s) Traditionally Offered: Fall

COMD 5740 - Teaching Reading to Deaf and Hard of Hearing Children
3 credits

Exploration of resources and methods used to teach reading to deaf and hard of hearing children. Discussion of current research regarding the effectiveness of these methods and ideas for improving reading instruction.

Cross-listed as: COMD 6740.

Semester(s) Traditionally Offered: Fall

COMD 5860 - Interdisciplinary Training in Assistive Technology I
3 credits

Provides interdisciplinary training in assistive technology, focusing on assistive devices related to powered mobility, seating and positioning, computer access, and augmentative and alternative communication.

Prerequisite/Restriction: Permission of department.

Cross-listed as: COMD 6860.

Semester(s) Traditionally Offered: Spring

COMD 5870 - Interdisciplinary Training in Assistive Technology II
3 credits

Provides advanced training in assistive technology, focusing on assistive devices related to cognitive, hearing, visual, and dual sensory impairments. Funding issues also addressed.

Cross-listed as: COMD 6870.

Semester(s) Traditionally Offered: Spring

COMD 5900 - Independent Study
1-6 credits

Selected work individually assigned, handled, and directed. Problems of mutual interest to students and the instructor are investigated and reported.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6020 - Language Assessment and Intervention for School-age Children and Adolescents
3 credits

Language assessment and intervention for school-age children and adolescents, including developmental oral and written language deficits, dynamic language
assessment, interpreting formal and informal testing, facilitating language through strategies and corresponding theories, planning clinical management and intervention, and linking curriculum-based instruction.

Prerequisite/Restriction: COMD 5200 or equivalent.

Semester(s) Traditionally Offered: Fall

COMD 6030 - Disorders of Fluency-Stuttering
3 credits

Provides understanding of theory, nature, etiologies, and principles of diagnosis and treatment of communication disorders related to stuttering and other disorders of fluency.

Semester(s) Traditionally Offered: Fall

COMD 6040 - Communication Disorders Related to Orofacial Anomalies
3 credits

Nature, etiologies, and principles of diagnosis and treatment of communication disorders related to orofacial anomalies.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall

COMD 6050 - Professional Practice in Speech-Language Pathology
2 credits

Lecture, discussion, and guest presenters on various professional practice topics pertaining to speech-language pathology.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall

COMD 6060 - Seminar in Speech-Language Pathology
1-3 credits

Covers professional issues and school-based practices in speech-language pathology.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

COMD 6100 - Advanced Clinical Practicum in Speech-Language Pathology
1-4 credits

Supervised diagnostic and treatment practicum with individuals who have communication disorders.

Prerequisite/Restriction: COMD 2500, COMD 3120, COMD 3650, or equivalent, and permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6120 - Adult Disorders of Motor Speech and Swallowing
4 credits

Considers the neurological substrates and clinical manifestation of dysarthria, apraxia, and dysphagia in the adult population. Addresses diagnostic methods and management of these disorders.

Semester(s) Traditionally Offered: Spring

COMD 6130 - Neuropathologies of Speech and Language
1-4 credits

Study of neuropathologies of speech and language associated with aphasia, traumatic brain injury, right hemisphere syndrome, dementia, and degenerative neurological diseases.

Semester(s) Traditionally Offered: Fall

COMD 6140 - Pediatric Neurogenic Disorders
1-3 credits

Global perspective of normal pediatric development. Study of neurogenic pathologies and effects on respiration, phonation, and articulation. Also addresses assessment and intervention of oral-motor skills for speech and swallowing purposes.

Semester(s) Traditionally Offered: Spring

COMD 6150 - Phonological Assessments and Intervention
3 credits

Graduate study of theoretical and clinical issues related to the assessment and intervention of articulation and phonological disorders in children.
Semester(s) Traditionally Offered: Spring

COMD 6200 - Internship in Public Schools-Speech-Language Pathology
4-5 credits

Supervised public school practicum in speech-language pathology.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6210 - Cultural and Linguistic Diversity in Communicative Disorders
3 credits

Assessment and remediation of culturally and linguistically diverse clients in communicative disorders. Graduate students taking course as COMD 6210 must complete different and additional assignments than are required for undergraduate students enrolled in COMD 5210.

Cross-listed as: COMD 5210.

Semester(s) Traditionally Offered: Fall

COMD 6220 - Severe Communication Impairments
3 credits

Study of assessment and treatment strategies for individuals with severe communication impairments, including those requiring augmentative and alternative communication systems.

Semester(s) Traditionally Offered: Spring

COMD 6230 - Introduction to Research in Communicative Disorders
3 credits

Introduction to experimental research designs, including educational research and development, causal-comparative, correlational, and qualitative research. Includes research reviews, research proposals, threats to internal and external validity, and statistical/practical significance.

Prerequisite/Restriction: PSY 2800.

Semester(s) Traditionally Offered: Fall

COMD 6300 - Externship in Speech-Language Pathology
1-12 credits

Supervised off-campus practicum in speech-language pathology. Prerequisite: Consent of instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6320 - Language Learning and Literacy Acquisition in Children with Hearing Loss
3 credits

Addresses unique process of language learning in children with hearing loss. Explores processes and strategies to facilitate literacy acquisition in these children through an auditory-oral approach.

Semester(s) Traditionally Offered: Summer

COMD 6340 - Auditory Learning and Spoken Language for Young Children with Hearing Loss
3 credits

Examines developmental processes underpinning audition and spoken language acquisition. Explores specific techniques, strategies, and teaching behaviors for developing listening and spoken language in young children who are deaf or hard of hearing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6370 - Educational Audiology
3 credits


Semester(s) Traditionally Offered: Fall

COMD 6430 - Speech Communication and Hearing Loss
3 credits

History of listening and speech programs for the hearing impaired. Hearing aids and FM systems, as well as computer and electronic devices used in supporting the speech of this population. Discussion of cochlear implants, the palatometer, and TranSonic hearing aids.

Semester(s) Traditionally Offered: Fall
COMD 6500 - Studies in Blindness and Visual Impairment
3 credits
Survey and discussion of studies of the learning characteristics and needs of children and youth who are blind or visually impaired (preschool through high school), the educational settings they are in, and the professionals who serve them.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6520 - Anatomy, Function, and Disorders of the Eye
3 credits
Covers structure and function of the human eye and visual system. Explores the most common eye conditions causing visual impairment in children and youth, as well as their implications and treatment. Examines the role of eye care specialists. With additional projects and readings, course goes beyond the information provided in undergraduate courses.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6530 - Issues in Low Vision
3 credits
Investigates students having low vision. Explores methods of adapting materials, activities, and the environment to better meet their learning needs. Includes training in the use of low-vision aids, while exploring the role of professionals and their services. Continuation and expansion of the related undergraduate course, COMD 3330.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6540 - Visual Impairments and the Role of Paraeducators
3 credits
Examines the roles and responsibilities of paraeducators who work with children and youth who are blind or visually impaired in educational settings. Explores the role of the educational team and how team members can best include and utilize paraeducators as part of the team. Continuation and expansion of the related undergraduate course, COMD 3340.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6550 - Vision Loss with Multiple Disabilities
3 credits
Presents specific information about the impact of multiple disabilities on individuals having visual sensory losses. Covers neurological issues related to brain development and learning. Addresses communication issues and strategies for working with individuals who have multiple disabilities and sensory loss. Continuation and expansion of the related undergraduate course, COMD 3350.

COMD 6560 - Braille
3 credits
Online course open to graduate students. Explores braille literacy. Provides instruction in braille codes, software, and technology used to produce braille.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6580 - Family Centered Practices for Children with Hearing Loss
3 credits
Explores issues, theories, models, research, and practices related to family and professional relationships in early intervention for children with hearing loss. Emphasizes early intervention needs of children with hearing loss who are acquiring spoken language.
Semester(s) Traditionally Offered: Fall, Spring

COMD 6600 - Practicum in Early Intervention
1-4 credits
Supervised student practice in early intervention programs for children ages 0-3.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6630 - Teaching Speech to Deaf and Hard of Hearing Children
3 credits
Evaluative and instructional models, processes, and methodologies in the development of speech for children who are deaf and hard of hearing.
Cross-listed as: COMD 4630.

Semester(s) Traditionally Offered: Spring

COMD 6640 - Seminar: Issues in Deaf Education
3 credits

Culminating seminar allowing students to synthesize and apply previously learned material about teaching deaf children in the real classroom. Includes reading and discussion of issues and solutions which teachers might face with students, parents, and administrators. Discussion of identity development of teachers of the deaf sensitive to cultural diversity.

Prerequisite/Restriction: COMD 4750 or COMD 6750 and COMD 4920 and COMD 5600 and COMD 5620

Semester(s) Traditionally Offered: Fall

COMD 6650 - Strategies for Teaching English Language to Children who are Deaf and Hard of Hearing
3 credits

Practical methods for applying theories of teaching the English language in classrooms where deaf and hard of hearing children are educated.

Prerequisite/Restriction: COMD 4750/COMD 6750.

Semester(s) Traditionally Offered: Fall

COMD 6660 - Introduction to Deaf-blindness
3-5 credits

Covers combined vision and hearing loss, as well as its impact on learning, communication, and overall development. Also explores neurological issues and other senses.

Cross-listed as: COMD 4660.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6670 - Medical Aspects and Assessment of Young Children with Visual Impairments, 0-3
3-5 credits

Examines impact of vision impairment on the development and learning of infants and toddlers; medical aspects of vision loss; tools, materials, and strategies to use in assessing functional vision and overall development; and working with families and intervention teams.

Semester(s) Traditionally Offered: Fall

COMD 6680 - SKI*HI Training
1-3 credits

Training in implementation of the SKI*HI Model. Early home intervention for infants and young children who are deaf and hard of hearing, and their families.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6690 - Early Intervention Methods and Materials for Young Children with Visual Impairments, 0-3
3-5 credits

Covers intervention strategies and materials; adapting routines and materials in the home; working with support staff; use of other senses; and familiarization with curriculum resources in all developmental domains (e.g., fine and gross matter, communication and language, cognition, etc.).

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

COMD 6700 - Practicum in Education of Children who are Deaf and Hard of Hearing
1-3 credits

Supervised diagnostic and remedial casework in education of the deaf and hard of hearing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6710 - Mainstreaming Children who are Deaf and Hard of Hearing
3 credits

Rationale and procedures used to successfully mainstream children with hearing loss. Also methods of evaluating programs where children with hearing loss are to be placed.

Semester(s) Traditionally Offered: Fall

COMD 6720 - Serving Preschoolers with Vision Impairments in Center Based Settings
3-4 credits
To provide students with knowledge and skills in working with children with visual impairments in the preschool setting.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6730 - Children with Multiple Disabilities and Hearing Loss
3 credits

Students will obtain a basic understanding of the problems and characteristics of children who have hearing loss plus one or more disabling conditions. Teaching strategies will also be discussed.

Cross-listed as: COMD 5730.

Semester(s) Traditionally Offered: Fall

COMD 6740 - Teaching Reading to Deaf and Hard of Hearing Children
3 credits

Exploration of resources and methods used to teach reading to deaf and hard of hearing children. Discussion of current research regarding the effectiveness of these methods and ideas for improving reading instruction.

Cross-listed as: COMD 5740.

Semester(s) Traditionally Offered: Fall

COMD 6750 - Language and Literacy Development and Assessment of Individuals who are Deaf and Hard of Hearing Children: Preschool
3 credits

Evaluation and development of language and literacy (ASL/English) skills in individuals who are deaf and hard of hearing. Discussion of current research regarding the development and assessment of emergent literacy skills (ASL/English) and how to foster a literacy-rich environment in preschool settings. Graduate-level course syllabus will be differentiated.

Prerequisite/Restriction: COMD 3910

Cross-listed as: COMD 4750

Semester(s) Traditionally Offered: Fall

COMD 6760 - Early Intervention for Children who are Deaf and Hard of Hearing
3 credits

Family-centered early intervention for infants and young children who are deaf and hard of hearing. Identification, testing, hearing aids, communication, auditory, language, and emerging literacy programming, parent and family programs, mentoring.

Cross-listed as: COMD 4760.

Semester(s) Traditionally Offered: Fall

COMD 6770 - Audiology and Teachers of Children who are Deaf and Hard of Hearing
3 credits

Focuses on the fields of hearing science and audiology and how information from these disciplines relates to education of deaf and hard of hearing children.

Cross-listed as: COMD 4770.

Semester(s) Traditionally Offered: Fall

COMD 6780 - Socio-Cultural Aspects of Deafness
3 credits

Leads students to understand how society, political institutions, and education have impacted the Deaf culture.

Cross-listed as: COMD 4780.

Semester(s) Traditionally Offered: Fall

COMD 6790 - Psychological Principles and Individuals who are Deaf and Hard of Hearing
3 credits

Psychological theories and research used to describe the deaf and hard of hearing. Exploration of principles that can be used in helping these individuals achieve emotional well-being.

Cross-listed as: COMD 4790 and PSY 6790/PSY 4790.

Semester(s) Traditionally Offered: Spring

COMD 6800 - Student Teaching - Day-School Program
6-12 credits
Full-time student teaching in a day-school program for the deaf.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

COMD 6810 - Disorders of Phonation
3 credits

Explores anatomy and physiology of the laryngeal and respiratory systems, contemporary theory, and evidence-based practice in the diagnosis and treatment of voice disorders.

Semester(s) Traditionally Offered: Fall

COMD 6820 - Principles of Intervention for Children who are Deaf and Hard of Hearing
3 credits

Application of teaching principles to classrooms for the deaf and hard of hearing. Practicum with children is part of this course.

Prerequisite/Restriction: COMD 6640, COMD 6650, and permission of instructor.

Semester(s) Traditionally Offered: Spring

COMD 6830 - Student Teaching-Residential
6-12 credits

Full-time student teaching at a residential school for the deaf. Prerequisite: Permission of instructor.

Semester(s) Traditionally Offered: Spring

COMD 6840 - Children with Combined Vision, Hearing Loss, and Multiple Disabilities
3-5 credits

Designed to teach students how to implement appropriate intervention strategies for infants and young children (ages 0-3) related to communication, cognition, touch, play, self-care, orientation to the environment, etc., and how to help the family learn to communicate with their child.

Cross-listed as: COMD 4840.

Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6850 - Seminar in Communicative Disorders and Deaf Education
1-3 credits

Research and analysis of selected topics.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6860 - Interdisciplinary Training in Assistive Technology I
3 credits

Provides interdisciplinary training in assistive technology, focusing on assistive devices related to powered mobility, seating and positioning, computer access, and augmentative and alternative communication.

Prerequisite/Restriction: Permission of department.

Cross-listed as: COMD 5860.

Semester(s) Traditionally Offered: Fall

COMD 6870 - Interdisciplinary Training in Assistive Technology II
3 credits

Provides advanced training in assistive technology, focusing on assistive devices related to cognitive, hearing, visual, and dual sensory impairments. Funding issues also addressed.

Cross-listed as: COMD 5870.

Semester(s) Traditionally Offered: Spring

COMD 6880 - Methods and Procedures in Early Intervention
3 credits

Teaches specific methods and procedures necessary for working in early intervention programs serving families of infants and young children with hearing loss, including assessment procedures, specific home visit delivery procedures, and methods of working with support professionals and team members.

Semester(s) Traditionally Offered: Spring
COMD 6900 - Independent Study  
1-9 credits
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6910 - Sign Language III  
4 credits
Students receive individual, detailed feedback concerning their expressive ASL skills. Students present material in American Sign Language, with a focus on improving identified areas of weakness. Cooperative learning is encouraged. Experiences with fluent users of ASL and interpreter mentors via the lab provide students with basic interpreting skills.
Prerequisite/Restriction: COMD 2910 and COMD 3910; or permission of instructor.
Cross-listed as: COMD 4910.
Semester(s) Traditionally Offered: Fall, Spring

COMD 6920 - Sign Language IV  
4 credits
Basic concepts of linguistics are explored, as well as an in-depth analysis of ASL history, grammatical structure, and ASL poetry. Students apply linguistic principles to the analysis of American Sign Language, with ample opportunities to interact with fluent users of ASL via the lab experience.
Prerequisite/Restriction: COMD 2910 and COMD 3910; or permission of instructor.
Cross-listed as: COMD 4920.
Semester(s) Traditionally Offered: Spring

COMD 6930 - Practicum in Early Intervention  
1-6 credits
Supervised student practicum in parent-infant home-based and preschool programs.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

COMD 6960 - Master's Project  
1-4 credits
This experience provides student with opportunity to design and carry out a creative project which is closely related to his or her area of teaching specialty. May require a written report.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6970 - Thesis  
1-7 credits
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 6990 - Continuing Graduate Advisement  
1-9 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7200 - Introduction to Clinical Practice  
1-4 credits
Supervised diagnostic practicum for first-year students in the Audiology Program.
Prerequisite/Restriction: Admission to the Audiology Program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7300 - Intermediate Clinical Practicum  
1-4 credits
Supervised diagnostic practicum for second-year students in the Audiology Program.
Prerequisite/Restriction: Admission to the Audiology Program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
COMD 7310 - Psychoacoustics and Instrumentation
3 credits
Covers psychoacoustic aspects of human audition, with emphasis on application in the clinical setting. Explores basic electronics and audio systems.
Prerequisite/Restriction: Admission to the Audiology Program.
Semester(s) Traditionally Offered: Fall

COMD 7320 - Amplification I
1-4 credits
Hearing aid types and uses, hearing aid components and characteristics, electroacoustic performance, hearing aid candidacy and hearing aid evaluation, and hearing aid fitting and orientation.
Prerequisite/Restriction: Admission to the Audiology Program.
Semester(s) Traditionally Offered: Spring

COMD 7330 - Supervision Internship
1-7 credits
Provides extensive supervisory experience for advanced students. Internship is for a period of time to be specified by the department and cooperating agency.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7340 - Pediatric Audiology
2-3 credits
Provides students with understanding of normal auditory development and theoretical, clinical, and practical issues involved in screening, assessment, and management of children with hearing loss.
Semester(s) Traditionally Offered: Fall

COMD 7380 - Advanced Audiology
2 credits
Special auditory testing for site of lesion in the conductive, sensory, and neural/central auditory systems with special emphasis on the comprehensive behavioral audiolologic test battery.
Prerequisite/Restriction: Admission to the Audiology Clinical Doctoral Program.
Semester(s) Traditionally Offered: Fall

COMD 7400 - Advanced Clinical Practicum
1-4 credits
Supervised clinical practicum for third-year students in the Audiology Program.
Prerequisite/Restriction: Admission to the Audiology Program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7410 - Noise and Hearing Conservation
2 credits
Principles of noise hazard evaluation, effects of noise on the auditory mechanism, and development and maintenance of an effective hearing conservation program.
Prerequisite/Restriction: Admission to the Audiology Program.
Semester(s) Traditionally Offered: Fall

COMD 7420 - Amplification II
3 credits
Applications of advanced hearing aid circuitry. Hearing aid troubleshooting, modifications, and repairs, as well as various aspects of measuring hearing aid satisfaction, are included. Tinnitus management and cochlear implants also examined.
Prerequisite/Restriction: Admission to the Audiology Graduate Program.
Semester(s) Traditionally Offered: Fall

COMD 7430 - Electrophysiology
3 credits
Provides students with extensive working knowledge of early, middle, and late evoked potentials. Assessment of
the sensory function of the auditory system with otoacoustic emissions also included.

Prerequisite/Restriction: Admission to the Audiology Clinical Doctorate Program.

Semester(s) Traditionally Offered: Fall
COMD 7460 - Adult Aural Rehabilitation
3 credits

Focuses on traditional aural rehabilitation models, amplification, counseling, speech reading, and assistive listening devices. Upon course completion, students should be able to effectively use these elements to assist adults in compensating for hearing impairment.

Prerequisite/Restriction: Admission to the Audiology Program.

Semester(s) Traditionally Offered: Spring
COMD 7470 - Educational Audiological Management and Audiologic Counseling
3 credits

Management plans for audiological services, as well as appropriate intervention strategies for children. Students develop plans and present methods for bringing change to schools. Principles of audiologic counseling also discussed.

Prerequisite/Restriction: COMD 6370.

Semester(s) Traditionally Offered: Spring
COMD 7490 - Medical Aspects of Audiology
3 credits

Study of the etiology, symptomatology, audiological manifestations, and medical treatment of various pathological conditions of the auditory system.

Prerequisite/Restriction: Admission to the Audiology Program.

Semester(s) Traditionally Offered: Spring
COMD 7510 - Supervision in Communicative Disorders
2 credits

Principles and practices of supervision in Communicative Disorders and Deaf Education. Emphasizes clinical and educational supervision as these styles relate to individuals who are deaf and hard of hearing or who have communicative disorders.

Semester(s) Traditionally Offered: Summer
COMD 7520 - Introduction to Cochlear Implants
2-3 credits

Provides an introduction to cochlear implant technology, including a history of cochlear implants, the development of cochlear implants, candidacy for cochlear implants, and outcomes for cochlear implant recipients. Audiology students should register for section 1, and nonaudiology students should register for section 2.

Prerequisite/Restriction: Graduate standing in Communicative Disorders and Deaf Education Department.

Semester(s) Traditionally Offered: Fall, Spring
COMD 7530 - Balance Evaluation and Management
3 credits

Explores techniques and technology for vestibular and balance assessment, including electronystagmography, videonystagmography, rotational testing, and posturography.

Prerequisite/Restriction: Admission to the Audiology Program.

Semester(s) Traditionally Offered: Spring
COMD 7800 - Clinical Externship in Audiology
1-9 credits

Twelve-month full-time clinical practicum experience in one or more off-campus clinical sites.

Prerequisite/Restriction: Admission to the Audiology Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
COMD 7810 - Research Seminar in Educational Audiology
1-3 credits

Identification of research problem, consideration of
research strategies and methods, application of research and statistical concepts in departmental focus, interaction with faculty.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7820 - Clinical Research in Audiology
1 credit

Facilitates completion of doctoral students' clinical research projects in audiology. Further enables students to incorporate evidence-based practice into the profession of audiology.

Prerequisite/Restriction: Admission to the Audiology Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7830 - Special Topics in Speech-Language Pathology
3 credits

Discussion of advanced topics and issues in speech and language disorders, including theories of information processing and learning mechanisms underlying speech and language disorders, the nature of various types of speech and language disorders, current research in speech and language disorders, assessment practices, and/or intervention practices.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7840 - Journal Reading Group in Speech-Language Pathology
1 credit

Under faculty direction, students read and discuss published research. Students learn to critique empirical and theoretical papers, as well as current research findings in important areas of speech-language pathology.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7850 - Externship Seminar
3 credits

Internet-based seminar in current clinical-related topics for fourth-year students in the Doctorate of Audiology Program.

Prerequisite/Restriction: Admission to the Audiology Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7860 - Practice Management in Audiology
2 credits

Audiology business and practice management. Discussion of business set-up, the business plan, managerial accounting and financial analysis, marketing, pricing, reimbursement, record keeping, and forensics.

Prerequisite/Restriction: Admission to the Audiology Program.

Semester(s) Traditionally Offered: Spring

COMD 7870 - Clinical Research Project
1-6 credits

Under the direction of his or her advisory committee, student develops a clinically-related project. This project is a creative work at a doctoral level and worthy of publication or presentation.

Prerequisite/Restriction: Admission to the Audiology Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

COMD 7900 - Independent Study
1-2 credits

Advanced students, under direction of a faculty member, will study independently; however, departmental permission is necessary.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
COMD 7910 - Independent Research
1-2 credits

Advanced students, under direction of a faculty member, will do research in an area of interest to themselves.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7970 - Dissertation
1-9 credits

Variable credit for dissertation project in connection with the doctoral program emphasis in educational audiology.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

COMD 7990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Computer Science

CS 1020 - Campus Computing and Beyond
1 credit

Hands-on laboratory for CS 1030. Introduces the campus network and the Internet. Emphasizes general problem-solving strategies and skills associated with computer and application software use.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 1030 - Foundations of Computer Science (BPS)
BPS Breadth Physical Sciences
3 credits

Investigation of computers and computing in today's society, including the basic scientific and mathematical concepts that underlie computer science, computing, and computer systems.
Semester(s) Traditionally Offered: Fall

CS 1035 - Foundations of Computer Science Laboratory
1 credit

This is a Programming Laboratory class. It prepares students who have no programming experience to be able to succeed in CS 1400 and CS 1405
Corequisite: CS 1030
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

CS 1050 - Problem Solving with Computers
3 credits

Investigates problem-solving using methodologies of computer science. Emphasizes techniques used by computer scientists to solve problems, as well as the scientific method. Develops problem-solving methodology for both new and traditional computer applications.
Semester(s) Traditionally Offered: Fall, Spring

CS 1060 - Cyber Security: Threats, Analysis, and Defense (BPS)
BPS Breadth Physical Sciences
3 credits

Investigation of cyber-security threats through an analysis of computer systems and communication methods. Develops skills for identifying potential attacks, analyzing problems, and implementing solutions. Students learn to minimize vulnerabilities and defend against attacks in the cyber world.
Semester(s) Traditionally Offered: Spring

CS 1400 - Introduction to Computer Science–CS 1
3 credits

Introduction to science of problem solving, programming, program development, algorithm analysis, and data structures. Students will learn to develop correct software in a current programming language environment. Computer science majors must enroll in CS 1405 concurrently with CS 1400.
Prerequisite/Restriction: Grade of C- or better in MATH 1050 or Math ACT score of at least 25.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 1405 - Introduction to Computer Science–CS 1 Lab
1 credit
One-hour lab taught in conjunction with CS 1400. Students learn to develop correct software in a hands-on structured environment. Computer science majors are required to pass both the laboratory and the lecture, and are required to enroll in CS 1400 concurrently with CS 1405. For students not majoring in computer science, this laboratory is advised, but not required, for CS 1400.

Prerequisite/Restriction: Grade of C- or better in MATH 1050 or Math ACT score of at least 25.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 1410 - Introduction to Computer Science—CS 2 (QI)  
QI Quantitative Intensive  
3 credits

Introduction to science of problem solving, programming, program development, algorithm analysis, and data structures. Students will learn to develop correct software in a current programming language environment.

Prerequisite/Restriction: Grade of C- or better in CS 1400.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 2250 - Cooperative Work Experience  
1-9 credits

Provides credit for students working at a participating firm under faculty supervision.

Prerequisite/Restriction: 2.5 GPA; permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 2410 - Introduction to Graphical User Interface Development in Java  
3 credits

Students will learn the fundamentals of event-driven software, common graphical user interface (GUI) components, GUI development environments, and a second programming language (Java). They will also strengthen their understanding of essential object-oriented concepts, including classes, inheritance and polymorphism.

Prerequisite/Restriction: CS 1400  

Semester(s) Traditionally Offered: Fall, Spring

CS 2412 - Introduction to Graphical User Interface Development in C#  
3 credits

Students will learn the fundamentals of event-driven software, common graphical user interface (GUI) components, GUI development environments, and a second programming language (C#). They will also strengthen their understanding of essential object-oriented concepts, including classes, inheritance and polymorphism.

Prerequisite/Restriction: CS 1400

Semester(s) Traditionally Offered: Fall, Spring

CS 2420 - Algorithms and Data Structures—CS 3 (QI)  
QI Quantitative Intensive  
3 credits

Introduction to science of problem solving, programming, program development, algorithm analysis, and data structures. Students will learn to develop correct software in a current programming language environment.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 1410.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 2450 - Introduction to Software Engineering I (CI)  
CI Communications Intensive  
3 credits

First part of a two-course series in software engineering, covering fundamental principles and practices. Provides hands-on experience in development of complete software application in a group situation.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420.

Semester(s) Traditionally Offered: Fall, Spring

CS 2610 - Developing Dynamic, Database-Driven, Web Applications  
3 credits
Develop secure, dynamic, database-driven web applications. Learn the fundamentals of building web pages. Add interactive capabilities with client-side and server-side technologies. Learn about information representation, storage, retrieval and transmission in Internet-based environments.

Prerequisite/Restriction: CS 2410 or CS 2412

Semester(s) Traditionally Offered: Fall, Spring

CS 2612 - Developing Database-Driven Web Applications Using ASP.NET
3 credits

Develop applications to be distributed over the web. Learn information representation, storage, retrieval and transmission in Internet-based environments. Use the tools available in ASP.NET to develop secure, database-driven, dynamic web applications.

Prerequisite/Restriction: CS 2410 or CS 2412

Semester(s) Traditionally Offered: Fall, Spring

CS 2810 - Computer Systems Organization and Architecture I
3 credits

Examines organization and architecture of computer systems. Covers terminology, data representation, Boolean Algebra, and combinational and sequential logic circuits as they apply to computer hardware and software.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 1410.

Semester(s) Traditionally Offered: Fall, Spring

CS 3000 - Undergraduate Seminar
1 credit

Serves as a capstone course for the pre-computer science curriculum, as well as an introduction to the advanced standing curriculum. Also includes discussion of computer science as a career and discussion of the advanced standing test.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420 and ENGL 2010; or permission of instructor.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 3010 - Information Acquisition, Analysis and Presentation (DSC/QI)
DSC/QI Depth Life and Physical Sciences, Communications Intensive, and Quantitative Intensive
3 credits

Introduces students to use of scientific method and computer technology in analysis of multi-faceted problem, and presentation of that analysis. Each semester, built around single topic such as global warming.

Prerequisite/Restriction: Completion of University Studies Quantitative Literacy (QL) requirements

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 3100 - Operating Systems and Concurrency
3 credits

Design and implementation of operating systems. UNIX will be used as one example, but all categories of operating systems will be discussed. Presentation of the concept of concurrency as it applies to operating system design and application.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring

CS 3200 - Mobile Application Development
3 credits

Programming and application development for mobile computing devices such as mobile phones, music players, and tablet computers through the model-view-controller model of computing. Makes use of current technology and software development environments. Project required.

Prerequisite/Restriction: CS 2610 or CS 2612

Semester(s) Traditionally Offered: Fall, Spring

CS 3410 - Computational Science: JAVA/Internet (DSC/QI)
DSC/QI Depth Life and Physical Sciences and
Quantitative Intensive
3 credits

Introduces computational science for algorithm development in JAVA-based applications. Examines information representation, storage, retrieval, and transmission in quantitative Internet-based environments.

Prerequisite/Restriction: CS 1410 and completion of University Studies Quantitative Literacy (QL) requirement.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 3420 - Computational Science: C# and .NET (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Introduces algorithm development for C#/ .NET applications. Examines digital representation, storage, retrieval, and transmission of information, and quantitative applications such as distributed network problems, along with the algorithms for such applications.

Prerequisite/Restriction: CS 1410, completion of University Studies Breadth Physical Sciences (BPS) course, and fulfillment of University Studies Quantitative Literacy (QL) requirement.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 3430 - Computational Science: Python and Perl Programming (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Introduces students to algorithm development and programming in computational science for Python and Perl applications on a Linux platform. Examines computer-based representation, storage, retrieval, and transmission of information, along with the algorithms used to perform such operations. Examines specific applications in bioinformatics and biology.

Prerequisite/Restriction: CS 1400, completion of University Studies Breadth Life Sciences (BLS) course, and fulfillment of University Studies Quantitative Literacy (QL) requirement.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 3450 - Introduction to Software Engineering II
3 credits

Second part of a two-course series in software engineering, covering fundamental principles and practices. Provides hands-on experience in development of complete software application in group situation.

Prerequisite/Restriction: CS 2450.

Semester(s) Traditionally Offered: Fall, Spring

CS 3810 - Computer Systems Organization and Architecture II
3 credits

Examines high-level architecture of computer systems. Covers processor and memory design for optimal performance, I/O subsystems, networking, and computer security.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2810. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring

CS 4250 - Cooperative Work Experience
1-9 credits

Provides credit for students working at a participating firm under faculty supervision.

Prerequisite/Restriction: 2.0 GPA; permission of instructor. Not available to pre-Computer Science majors.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 4700 - Programming Languages
3 credits

Theories of programming design and implementation. Introduction to variety of programming languages, showing how they represent trade-offs with respect to these theories.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.
Semester(s) Traditionally Offered: Fall, Spring

CS 4720 - Computer Networking I
3 credits
Focuses on client/server model, which is the dominant architectural model for today's computer systems. Explores the network underlying this model, specifically examining the topology, protocol(s), user interface(s), and hardware. Emphasizes the general theory and functionalities underlying the client/server model and computer networks in general.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 4730 - Computer Networking II
3 credits
Focuses on client/server model, which is the dominant architectural model for today's computer systems. Emphasizes the specifics of the products of today's dominant network companies, which are currently Novell and Microsoft. Completion of this course prepares students for certification under such products.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 4720. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Spring

CS 4890 - Topics in Computer Science
3 credits
Current topics in computer science as determined by advances in the field.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 4950 - Undergraduate Research
1-4 credits
Participation in research projects, under supervision of a computer science faculty member.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420 and permission of instructor. Not available to pre-Computer Science majors.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 5000 - Theory of Computability
3 credits
Theory of computation, including presentation of computability, decidability, and complexity. Includes formal grammars, finite and pushdown automata, and turing machines.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Spring

CS 5050 - Advanced Algorithms
3 credits
Study of algorithms and their analysis, including: design by induction, algorithms involving sequences and sets, graph algorithms, geometric algorithms, algebraic algorithms, reductions, NP-completeness, and parallel algorithms.

Prerequisite/Restriction: Grade of C- or better in CS 2420 and admission into Computer Science major.

Semester(s) Traditionally Offered: Fall, Spring

CS 5060 - Intensive Programming
3 credits
Teaches high-level programming skills. Includes both data structures and OOD and OOA techniques. Required for all new MS/CS students whose undergraduate degree is not in computer science from an ABET accredited program. May not be used for credit by BS/CS majors or PhD/CS majors.

Prerequisite/Restriction: Enrollment in MS/CS program or permission of instructor.

Semester(s) Traditionally Offered: Fall

CS 5070 - Computer Science Capstone I
1 credit
Students develop a project that includes the use of a
significant portion of the computer science topics presented in the core curriculum. During CS 5070, the documentation, requirements, and testing plan for the project are completed and presented to a faculty review committee.

Prerequisite/Restriction: 2.0 GPA. Not available to pre-Computer Science majors.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

CS 5071 - Computer Science Capstone II
3 credits

Students implement and test a project that includes the use of a significant portion of the computer science topics presented in the core curriculum. During CS 5071, the implementation and testing is performed on the project defined in CS 5070.

Prerequisite/Restriction: CS 5070, 2.0 GPA. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring

CS 5070 - Compiler Construction
4 credits


Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2810 and CS 4700. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall

CS 5410 - Game Development
4 credits

Explores technical game development. Emphasizes integration of multiple computer science topics within a single application, including: graphics, AI multi-threading, multi-core, networking, synchronization, optimization, and scripting languages. Includes a team project to develop a computer-based game.

Prerequisite/Restriction: CS 2420 and CS 3100.

Semester(s) Traditionally Offered: Spring

CS 5400 - Computer Graphics I
4 credits

Introduction to concepts of graphical techniques. Digital and pictorial representation of information.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in all of the following: CS 2420; MATH 1220; MATH 2250 or MATH 2270. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall

CS 5200 - Distributed and Network Programming
4 credits

Introduction to programming concepts and techniques for distributed and networked environments. Explores concurrency, process synchronization, network protocols, connectionless and connection-oriented communications, network architectures and topology, load balancing, and transmission media.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 3100. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall

CS 5100 - Graphical User Interfaces and Windows Programming
4 credits

Design principles of GUIs and philosophy, structure, and programming in Windows environments.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Spring

CS 5450 - Multimedia Systems
4 credits

Introduction to concepts and techniques underlying multimedia-based systems. Deals with both the hardware aspects of multimedia systems (e.g., transfer rates, capacities, resolution, etc.) and the software requirements of such systems. Each student required to develop a multimedia-based system.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 5460</td>
<td>Computer Security I</td>
<td>3</td>
<td>Introduction of computer security principles, data protection models, and application techniques. Develops basic skills necessary for protecting systems and communication from a variety of computer security threats. Topics include encryption, policies, access control, network security, OS security, and software security.</td>
</tr>
<tr>
<td>CS 5500</td>
<td>Parallel Programming</td>
<td>3</td>
<td>Examines basic techniques for designing parallel algorithms, such as balanced trees, pointer jumping, partitioning, pipelining, accelerated cascading, list ranking, and tree contraction. Consideration of classic parallel algorithms in graphs, merging, sorting, planar geometry, string matching, and randomized techniques.</td>
</tr>
<tr>
<td>CS 5600</td>
<td>Intelligent Systems</td>
<td>4</td>
<td>Introduction to artificial intelligence topics, including software agent design, informed search, heuristics, inference (logical and probabilistic), knowledge representation, game playing, planning, machine learning, philosophy, and ethics.</td>
</tr>
<tr>
<td>CS 5650</td>
<td>CVPRIP I: Computer Vision, Pattern Recognition, and Image Processing</td>
<td>3</td>
<td>Introduction to theories and techniques of machine intelligence, with emphasis on pattern recognition, computer vision, fuzzy logic, and neural networks.</td>
</tr>
<tr>
<td>CS 5660</td>
<td>Bioinformatics I</td>
<td>3</td>
<td>Introduction to tools and techniques used in the study of bioinformatics, genomics, and computational biology. Explores usage of these tools and techniques for storage, retrieval (mining), processing, visualization, and analysis of biological information.</td>
</tr>
<tr>
<td>CS 5670</td>
<td>Bioinformatics II</td>
<td>3</td>
<td>Builds on material presented in CS 5660, presenting more advanced topics in bioinformatics, such as data mining, machine learning, and evolutionary algorithms. Students cannot receive credit for both CS 5670 and CS 6670.</td>
</tr>
<tr>
<td>CS 5700</td>
<td>Object-Oriented Software Development</td>
<td>3</td>
<td>Study of fundamental object-oriented principles, e.g., abstraction, encapsulation, classification, and inheritance. Application of these principles in all phases of software development, with emphasis on analysis, design, and testing. Introduction to software design patterns.</td>
</tr>
</tbody>
</table>
Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 3450. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall
CS 5800 - Introduction to Database Systems
3 credits

Comparison of various database systems. Normal forms, protection, concurrency, security and integrity, and distributed and object-oriented systems.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall
CS 5850 - Systems Analysis
3 credits

Theory and practice of analysis, design, and implementation of information systems. Students will construct an information system.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 5800. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Spring
CS 5890 - Topics in Computer Science
1-4 credits

Current topics in computer science as determined by advances in the field.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420 and permission of instructor. Not available to pre-Computer Science majors.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
CS 5950 - Independent Study
3 credits

Provides for independent study of selected topics.

Prerequisite/Restriction: 2.0 GPA; grade of C- or better in CS 2420 and permission of instructor. Not available to pre-Computer Science majors.

Semester(s) Traditionally Offered: Fall, Spring, Summer
CS 6050 - Computational Geometry: Algorithms and Applications
3 credits

Computational geometry is the study of computation involving geometric objects, such as lines, polygons, and circles. It has application in bioinformatics, graphics, robotics, CAD/CAM, etc. This course presents the algorithms, data structures, and techniques of computational geometry.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring
CS 6100 - MultiAgent Systems
3 credits

MultiAgent systems are composed of multiple interacting computing elements, known as agents. Agents are software systems with two important capabilities: first, autonomous actions; and second, interacting with other agents by engaging in cooperation, coordination, and negotiation.

Prerequisite/Restriction: 3.0 GPA and enrollment in Computer Science master's or PhD program.

Semester(s) Traditionally Offered: Fall
CS 6200 - Distributed System Design
3 credits

Examines advanced design concepts related to development of distributed software systems. Students learn how to model and evaluate communication protocols and study techniques for time coordination, distributed process synchronization, object replication and migration, and distributed transaction processing. Students also learn about Common Object Request Broker Architecture (CORBA).

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5200 and enrollment in Computer Science master's or PhD program.

Semester(s) Traditionally Offered: Spring
CS 6220 - Concurrent Systems
3 credits
Explores concurrency in its various forms, emphasizing debugging techniques, development techniques that guarantee correctness, and performance evaluation and tuning.

Prerequisite/Restriction: CS 5200.
Semester(s) Traditionally Offered: Fall

CS 6250 - Cooperative Work Experience, Graduate
1-9 credits
Provides credit for students working at a participating firm under faculty supervision.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master's or PhD program.
Repeatable for credit. Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 6300 - Supercompilers for Sequential and Parallel Computers
3 credits
Analysis and optimization for sequential and parallel computers, including loop restructuring, concurrency analysis, vector analysis, and optimizations for shared and distributed memory computers.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5300 and enrollment in Computer Science master's or PhD program.
Semester(s) Traditionally Offered: Spring

CS 6400 - Computer Graphics II
3 credits

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5400 and enrollment in Computer Science master's or PhD program.

CS 6460 - Computer Security II
3 credits
Maintaining the integrity and security of computer systems is critical. Course explores aspects of system vulnerabilities and protection, attack categories and methodologies, the development of secure computer systems, etc.

Prerequisite/Restriction: CS 5460 or permission of instructor.
Semester(s) Traditionally Offered: Spring

CS 6500 - Advances in Parallel Systems
3 credits
Survey of current advances in parallel processing and concurrent systems. Review of current scientific literature to understand current issues, problems, and progress in advanced topics of parallel processing. Students read, summarize, report, and discuss up-to-date scientific papers in the field.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5500 and enrollment in Computer Science master's or PhD program.
Semester(s) Traditionally Offered: Fall

CS 6550 - Parallel Computing Systems
3 credits
Design of large-scale parallel systems. Explores machine organizations SIMD and/or MIMD modes of parallelism, emphasizing interconnection patterns among processors. Discussion of low-level parallel processing algorithms. Presents case studies of existing and proposed systems.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5500 and enrollment in Computer Science master's or PhD program.
Semester(s) Traditionally Offered: Fall

CS 6600 - AI: Advanced Intelligent Systems
3 credits
Introduction to artificial intelligence topics, including
software agent design, informed search, heuristics, inference (logical and probabilistic), knowledge representation, game playing, planning, machine learning, philosophy, and ethics. Graduate students must complete an independent project.

Prerequisite/Restriction: 2.5 GPA; grade of C- or better in CS 2420 or instructor permission; and enrollment in Computer Science master's or PhD program.

Cross-listed as: CS 5600.

Semester(s) Traditionally Offered: Fall

CS 6610 - AI: Advanced Topics in Artificial Intelligence (Topic) 3 credits

Advanced course in selected theories and techniques of artificial intelligence.

Prerequisite/Restriction: CS 5600 or CS 6600 or permission of instructor

Semester(s) Traditionally Offered: Spring

CS 6630 - Fuzzy Logic and its Application 3 credits

Introduces students to machine learning and problem solving techniques based on fuzzy logic.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 2420 and advanced standing, or permission of instructor; and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Fall

CS 6650 - Neural Networks 3 credits

Advanced course in theories and techniques of machine intelligence, using neural networks. Emphasizes various neural network paradigms and the types of problems they are best suited to solve.

Prerequisite/Restriction: CS 2420 or permission of instructor.

Semester(s) Traditionally Offered: Spring

CS 6655 - Evolutionary Computation 3 credits

In-depth analysis of the foundations of optimization techniques founded on evolutionary computation. Includes evolutionary algorithms, genetic algorithms, genetic programming, etc.

Prerequisite/Restriction: CS 2420 or permission of instructor.

Semester(s) Traditionally Offered: Spring

CS 6665 - Data Mining 3 credits

Covers recent advances in machine learning and intelligent information retrieval. Focuses on how these topics relate to and are applied in data mining.

Prerequisite/Restriction: Enrollment in Computer Science master's or PhD program or permission of instructor.

Semester(s) Traditionally Offered: Spring

CS 6670 - Advanced Bioinformatics 3 credits

Focuses on the various advanced algorithms and models used in bioinformatics applications. Opportunities and needs for improvement of such algorithms discussed in the context of current and future problems in bioinformatics.

Prerequisite/Restriction: CS 5670.

Semester(s) Traditionally Offered: Fall

CS 6700 - Object-Oriented Models, Methods, and Tools 3 credits

Study of object-oriented concepts, principles, techniques, development processes, and tools across all areas of software engineering, with special emphasis on current research topics.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5700 and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Fall
CS 6800 - Advanced Database Systems
3 credits
Covers advanced topics in database systems, including XML, OODBMS, query optimization, query processing, deductive databases, concurrency, theory of relational databases, normalization, and recovery.
Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5800 and enrollment in Computer Science master’s or PhD program.
Semester(s) Traditionally Offered: Spring

CS 6890 - Topics in Computer Science (Topic)
1-4 credits
Current topics in computer science as determined by advances in the field.
Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 6900 - Seminar
1 credit
Series of one-hour seminars on current research topics presented by computer science faculty.
Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

CS 6950 - Directed Readings in Computer Science
3 credits
Directed reading on advanced topics in computer science.
Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 6970 - Thesis and Research
1-9 credits
Graduate research in computer science.
Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 6990 - Continuing Graduate Advisement
1-6 credits
Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7100 - Advanced MultiAgent Systems
3 credits
Advanced topics in multiAgent systems, including algorithms for finding solutions, social welfare with preferences and utilities, multiAgent learning, and distributed search problems.
Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 6100 (or permission of instructor) and enrollment in Computer Science master’s or PhD program.
Semester(s) Traditionally Offered: Spring

CS 7350 - Patterns in Computer Software Systems
3 credits
Investigates patterns in computer software systems and how they can be better cataloged, understood, and reused to improve development productivity and quality. Includes readings of current literature, writing research papers, and participation in group discussions.
Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5700 and enrollment in Computer Science master’s or PhD program.
Semester(s) Traditionally Offered: Spring
CS 7380 - Software Testing
3 credits
Explores current issues, including testing object-oriented software, test data generation and sufficiency, domain-based testing, functional testing, and code-based testing.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Fall

CS 7460 - Advances in Computer Security Research
3 credits
Covers recent research directions in computer security. Reviews current state of the field, and explores possible research directions for further work.

Prerequisite/Restriction: CS 6460 or permission of instructor.

Semester(s) Traditionally Offered: Fall

CS 7500 - Fault-Tolerant Systems
3 credits
Advanced study of design and implementation of operating systems for fault-tolerant parallel and distributed systems. Topics chosen will provide students with knowledge of current research issues, practices, and techniques for the design and development of such systems.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Spring

CS 7550 - Interconnection Networks for Parallel Computer Systems
3 credits
Explores the design of large-scale parallel processing systems generally suited for multi-microprocessor implementation. Emphasizes interconnection patterns among the processing elements in parallel processors.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Spring

CS 7650 - Advanced CVP RIP: Computer Vision, Pattern Recognition and Image Processing
3 credits
Investigates new developments in representation and processing of gray-level and color images, including thresholding, segmentation, curve detection, etc. Also examines visual perception, as well as statistical and syntactical pattern classification.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Spring

CS 7660 - Robotics and Autonomous Systems
3 credits
Surveys current advances in robotic and autonomous systems. Reviews current scientific literature in the field, with emphasis on understanding the problems solved and the approaches used.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Fall

CS 7680 - Advanced Computer Vision
3 credits
Emphasizes current topics and research in the general area of computer vision. Focuses on detection, recognition, tracking, and analysis of human activity by using computer vision.

Prerequisite/Restriction: 3.0 GPA; grade of B- or better in CS 5650 and enrollment in Computer Science master’s or PhD program.

Semester(s) Traditionally Offered: Spring

CS 7900 - Seminar
2 credits
Series of lectures and presentations on current topics in
computer science. Students participate by giving presentations. As part of the course, students are expected to prepare their dissertation proposal.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Pass/Fail only.
Semester(s) Traditionally Offered: Spring

CS 7910 - Special Topics in Intelligent Systems (Topic)
3 credits

Discussion of current topics in intelligent systems, such as parallelism and software systems.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7920 - Special Topics in Parallelism (Topic)
3 credits

Topics of current interest in the area of parallelism.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7930 - Special Topics in Software Systems (Topic)
3 credits

Topics of current interest in the area of software systems.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7935 - Topics in Mobile Systems
3 credits

Mobile computing devices are now ubiquitous.

Computations and communications on such devices require a new computing paradigm and raise issues such as power-awareness, location-awareness, security, reliability, etc. This course explores mobile systems and issues pertaining to reliable operation.

Prerequisite/Restriction: CS 3100, CS 4700, and CS 5200; or permission of instructor.

Semester(s) Traditionally Offered: Fall

CS 7950 - Reading and Reports
3 credits

Directed reading on cutting-edge topics in computer science.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7960 - Topics in Bioinformatics (topic)
3 credits

Topics of current interest in bioinformatics.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7970 - Dissertation Research
1-15 credits

PhD dissertation research.

Prerequisite/Restriction: 3.0 GPA; permission of instructor and enrollment in Computer Science master’s or PhD program.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

CS 7990 - Continuing Graduate Advisement
1-6 credits

Continuing PhD-level advisement.

Prerequisite/Restriction: Prerequisites: 3.0 GPA;
permission of instructor and enrollment in Computer Science master's or PhD program.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Cosmetology / Barbering (USU Eastern)

COST 1100 - Cosmetology Theory
5 credits

Covers bacteriology, decontamination and infection control, permanent waving, chemical hair relaxing, hair cutting and hair lightening. Emphasis on new technology and product knowledge from industry.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring, Summer

COST 1110 - Cosmetology Lab
10 credits

Lab instruction and practical application. Teaches shampooing, scalp treatments, manicuring, hair cutting, hair dressing, tinting and bleaching, and facials.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Summer

COST 1200 - Cosmetology Theory
5 credits

Covers hair coloring, skin and disorders, chemistry, properties of scalp and hair, wet and thermal hair styling.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

COST 1210 - Cosmetology Lab
10 credits

Lab instruction and practical application teaches shampooing, scalp treatments, manicuring, hair cutting, hair-dressing, tinting and bleaching, and facials.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

COST 1500 - Professional Vocational Leadership (VICA)
1 credit

Supports and facilitates the goals and objectives of Vocational Industrial Clubs of America (VICA). Students will gain skills in the following areas: personal development, service, team building and leadership, workplace skills, and interview skills. Students may participate in regional, state and national competitions.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

COST 2300 - Intermediate Cosmetology Theory
5 credits

Covers salon business, electricity and light therapy, nails and disorders, manicuring, pedicuring.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

COST 2310 - Intermediate Cosmetology Lab
10 credits

Lab instruction and practical application teaches shampooing, scalp treatments, manicuring, hair cutting, hair-dressing, tinting and bleaching, and facials.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

COST 2400 - Intermediate Cosmetology Theory
5 credits

Covers theory of massage, facials, facial make-up and barbering. Lecture classes for State Board. (Review of previous theory classes).

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

COST 2410 - Intermediate Cosmetology Lab
10 credits

Lab instruction and practical application teaches shampooing, scalp treatments, manicuring, hair cutting, hair-dressing, tinting and bleaching, facials.
COST 2500 - Advanced Cosmetology Theory
5 credits
Covers lecture for State Board (review for State License). Advanced techniques. Designed for students who have not completed required hours for State Licensing.
Repeatable for credit

COST 2510 - Advanced Cosmetology Lab
5-10 credits
Lab instruction and practical application prepares shampooing, scalp treatments, manicuring, hair cutting, hair-dressing, tinting and bleaching, and facials.

COST 2700 - Student Instructor
15 credits
Prepares student for State Board Examinations and includes experience in teaching theory and lab. State Law requires 1000 clock hours for licensing.
Prerequisite/Restriction: Permission of instructor

COST 2800 - Nail Technician
9 credits
Designed to educate students with the knowledge, skills and abilities to practice manicuring, pedicuring and nail enhancements. The 300 hours of instruction prepares the student to meet requirements for taking the state licensing examination.

COST 2988 - Special Problems
1-3 credits
Designed as adjustable credit hours contingent on needed clock hours (to meet State Law requirement of 2000 clock hours).
Repeatable for credit

CJ 1010 - Introduction to Criminal Justice (BSS)
BSS Breadth Social Sciences
3 credits
Designed for all students. Introduces students to the history, processes and functions of the American criminal justice system and its primary components, namely law enforcement, courts, and corrections. Students will generally understand the history, process, and functions of the police, courts, and corrections as they relate to the operation of our criminal justice system and key constitutional provisions.

CJ 1030 - Introduction to Firearms Handling/Safety
2 credits
Designed as an introductory basic training program for students interested in recreational shooting, hunting, competition shooting, gun collecting, home safety or personal protection. Program will teach students the basic safety principles and help them develop the knowledge, skill and attitudes that are needed to successfully pursue their shooting interests. Course is the prerequisite for RECR 1060 and 1070. Introduces students to and familiarizes them with the various types of firearms, the mechanics, care and cleaning, history of each type and the unique handling requirements for the following: rifles, shotguns, revolvers and semiautomatic firearms. A large portion of the course will center around general firearm etiquette and safety procedures and students will have an opportunity to practice on a firing range.

CJ 1070 - Law Enforcement/Corrections Academy I
3 credits
CJ 1080 - Law Enforcement/Corrections Academy II
3 credits

Six credit hours will be awarded for successful POST certification.

Campus: USU Eastern only

CJ 1090 - Introduction to Law Enforcement
3 credits

Comprehensive study as to the evolvement of law enforcement in America. Emphasis will be placed on the historical aspects of law enforcement and what effect those events have presently. In-depth analysis of Traditional Policing and Community Policing; how Community Policing evolved and what future problems it poses for law enforcement. Recommended for the prospective law enforcement professional, social worker, law student or anyone wishing to learn more about the profession of law enforcement.

Campus: USU Eastern only

CJ 1300 - Introduction to Corrections
OCI Oral Communication Intensive
3 credits

Examines the history and the administration of corrections in America. Emphasis will be placed on the philosophies of punishment, sentencing strategies, prison community, alternatives to incarceration, and various reform efforts. Critical issues facing corrections will also be examined. Students will generally understand the evolution and administration of corrections in America.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

CJ 1330 - Criminal Law
3 credits

Designed mainly for, but not limited to the student majoring in Criminal Justice. It surveys the American criminal justice system. Elements of crime, defenses, historical foundation, limits, proposes and functions of criminal law are discussed. Students will understand the key general principles that relate to criminal law, criminal liability, complicity, uncompleted crimes, defenses to criminal liability and the various crimes in our legal systems. They will also learn how to read and use statutes and analyze fact situations in light of the law.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

CJ 1340 - Criminal Investigations
3 credits

Introduces students to the criminal, investigation process. Legal, scientific, and administrative aspects of this process will be explored and students will come to appreciate the complexity of conducting a thorough investigation and be able to deal with potential obstacles that are commonly encountered. Course is a valuable precursor to taking Criminalistics. Objective is to acquaint the student with the fundamentals of criminal investigations.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

CJ 1350 - Introduction to Forensic Science
3 credits

Mainly designed for the student majoring in Criminal Justice. Includes interrogation and interview, sources of information (electronic/traditional), crime scene procedure, introduction to identification, collection and preservation of evidence, laboratory techniques and case preparation. Students will understand the functions and duties of the forensic scientist and learn basic skills that related to evidence collection, preservation and analysis.

Prerequisite/Restriction: CJ 1010 and CJ 1330 are highly recommended.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

CJ 1355 - Crime Scene Processing
3 credits

Covers the duties and responsibilities of a crime scene technician at the scene of a crime. Includes instruction on the proper collection, handling and storage of evidence. Report writing, proper requests for examination as well as laboratory methods are an integral part of this course.

Prerequisite/Restriction: CJ 1340 or CJ 1350

Campus: USU Eastern only
CJ 1360 - Crime Scene Academy
3 credits

Students will receive extensive training to develop credible skills in the area of crime scene processing. These skills will include, but not limited to; analyzing crime scenes, learning proper investigation processes, managing crime scenes, documenting and preserving evidence at a crime scene, becoming familiar with the medical/legal aspects of crime scene investigation and becoming familiar with standardized national procedures. After successfully completing the course and passing the required test, students will be certified as a Crime Scene Technician by the Utah State Bureau of Forensic Services.

Campus: USU Eastern only

CJ 2110 - Security
3 credits

Designed as a requirement mainly for the student majoring in Criminal Justice. Examines the diverse components which make up the security function, as well as principles and concepts in physical security, loss control and crime prevention. Students will know and understand the historical and professional principles of public and private security and crime prevention, as well as risk management and loss control principles.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

CJ 2330 - Juvenile Justice
3 credits

Designed mainly for the student majoring in Criminal Justice. Studies the origin, philosophy, and development of the juvenile justice system, particularly the juvenile court. Emphasis is placed upon laws, detention, adjudication, probation, after-care, foster homes, and other alternative correctional practices. Students will understand the nature and origins of juvenile law and the guiding principles that drive the system.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

CJ 2340 - Survey of Criminal Procedure
3 credits

Introduces students to the following concepts; historical development of the Justice System, the arrest, the initial appearance, pretrial proceedings, place and time of trial, the trial, confrontation and assistance of counsel, pretrial motions, hearings and plea negotiations, the trial and the roles of major participants, the jury, trial procedure, the jury instructions and deliberation, the verdict, appeals and appellate citations, the sentence and correctional procedures, sentencing philosophy and clemency, extradition process, juvenile system focus and victims’ rights.

Prerequisite/Restriction: CJ 1010 and CJ 1330 and CJ 2350 or special permission from the instructor

Campus: USU Eastern only

CJ 2350 - Laws of Evidence
3 credits

Designed mainly for the student majoring in Criminal Justice. Deals with the principles and rules of law emphasizing evidentiary problems related to criminal cases. An introduction and overview of the court process and problems related to the fact finding process of juries. Explores the courtroom procedures as they relate to evidence and its uses in the courtroom, with emphasis upon the introduction of evidence and the rules pertaining thereto. Students will understand the value of the rules of evidence in the law and be able to understand and apply them to fact scenarios.

Prerequisite/Restriction: CJ 1010 is highly recommended.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

CJ 2360 - Juvenile Law and Procedures
3 credits

Designed mainly for the student majoring in Criminal Justice. Covers the juvenile justice system emphasizing Utah law and procedure. Studies differences between juvenile and adult systems, delinquent acts, juvenile treatment as adults and role and function of probation, youth corrections, family services and the community. Students will generally understand the nature and origins of juvenile law, the principles and laws that pertain to juvenile delinquency; neglect, abuse and dependancy proceedings; and status offenses. They will...
also learn how to read and use statutes and analyze fact situations in light of the law.

CJ 2370 - Child Abuse and Neglect
3 credits

Overview of causes, identification, reporting, and legal issues pertaining to children who are abused and/or neglected. Cycle of domestic violence and its effects on children will be discussed. Primary objectives are to assist students in gaining an insight of what constitutes child maltreatment and domestic violence, assess underlying causes of abuse and neglect, and how it is addressed within the criminal justice system.

CJ 2860 - Criminal Justice Field Experience
3 credits

(for second year program majors only) Designed for students majoring in Criminal Justice. An internship with city, county, and state criminal justice agencies. Registration is by permission of the instructor. Students will gain first hand experience and knowledge of an area of criminal justice by working with, riding with, or observing a practitioner and will be able to directly evaluate their own interest level in the field.

Repeatable for a total of six credit hours with consent of instructor.

DANCE 1010 - Dance in Culture (BCA)
3 credits

Study of dance as one of the first art forms, from the primitive to its present state. Dance will also be studied sociologically as well as historically. Students will be exposed to the development of dance through history as it has been influenced by various economic and political forces. Students will be provided with information concerning outstanding contributions to dance and its authorities in the 20th century. Hopefully, the student will develop an appreciation of dance in contemporary society.

DANCE 1100 - Ballet I
1 credit

Basic ballet course for men and women to condition the body, develop an appreciation for ballet through its specific exercise forms and acquire the basic skill of ballet technique. Class is open to anyone. A text is used and grading is done by two written tests, attendance, and a performance final. The Frenc-Bouronville as well as the Russian techniques are taught. Video is used to expose students to the professional performance as well as dance history. Students also begin learning the importance of understanding anatomy, exercise physiology, kinesiology, music theory, theater practices and techniques, and physics as it relates to ballet and dance in general.

Repeatable for credit
DANC 1200 - Modern Dance I
1 credit

Designed for the dancer who has not been exposed to basic modern dance techniques. Class is open to anyone. Goal is to communicate through movement. Many different modern dance styles will be explored including Graham, Denis/Shawn and Cunningham. Video will be used as well as a text. Movement experiences will range from the classroom situation to large open space activities including out of doors. Students will learn to analyze others’ movement patterns and how people communicate through movement. This is an important aspect in dance therapy. Music, as well as music theory, will be explored. Grading will be on movement projects, tests, and a final movement project.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 1210 - Ballet II
1 credit

Continuation of basic ballet technique for men and women who wish to become more proficient in the art and form of classical ballet. A text is used and grading is done based on attendance, two written examinations and a performance final. There is a continuation of the French/Bournerville as well as Russian techniques. Video is used for exposure to dance performance as well as technique. Dance history and ballet tradition is continued. Students continue the study of anatomy exercise physiology, kinesiology, music, theater and performance techniques as well as physics. Based on proficiency, some of these student may become eligible to audition for Ballet Repertory Ensemble, DE 2310.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall (Alternate years)

DANC 1240 - Musical Theatre Movement
1 credit

Involves a study of the fundamental types of movement used in the theater including mime, improvisation and basic musical theater dance forms. Class is open to any student that has had some experience or training in ballet, modern, or jazz dance and is interested in musical theater. Class is performance based. Students learn aspects of movement on stage in the areas of dance for musical theater and are also exposed to mime and other non-verbal forms of communication. Final project involves each student choreographing a 1 to 1.5 minute piece that would fit a period and style of a broadway show. Students are also required to research, use video and critique a broadway show.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 1500 - Jazz Dance I
1 credit

Designed for the dancer who has already been exposed to Modern Dance or Classical Ballet technique. It is not a beginning class. Students should already have basic placement and traditional dance techniques in mind so as to be able to adequately explore the pure jazz technique. Class will explore the Girodano, Maddox, and Luigi methods as well as other methods. Video, handouts and a text are used. Grading is based on attendance, two tests, and a final performance project.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring (Alternating years)

DANC 1520 - Folk/Cultural Dance
1 credit

Designed for female ballet students with at least 2 years of Ballet training and who are observed to be ready for pointe work. Students must be physiologically mature and have the proper alignment and strength to dance on Pointe. A text is used and at least two written examinations are given plus a performance final. Each student progresses at her own rate and is graded accordingly as all are different. The rule of thumb is a child should be at least 11-12 before Pointe is allowed.

Prerequisite/Restriction: Permission of instructor.
Beginning class for men and women interested in ethnic, character, and folk dance for the stage. Open to anyone with some dance background. A text is used as well as video. Grading is based on attendance, tests and a performance final. History and background surrounding the origins of many of the national dances will be explored as well as the differences between the three types.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall (alternating years)

DANC 1580 - Tap I
1 credit

Designed for the beginning and intermediate tap dancer. The class is open to anyone. Basic tap technique will be covered as well as terminology and history of the dance form. Includes the exploration of the current phase of tap and also the relationship of the basic differences between clogging and tap. Students will be required to reach a certain level of proficiency. Handouts and video will be used. Grading is based on attendance and performance.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring (alternating years)

DANC 2200 - Pointe and Variations
1 credit

Designed for the female dancer who has met all the technical and physical requirements for solo variations and pas de deux. For women who have reached the maturity level to learn the art of partnering and pas de deux. Point class for women requiring intermediate-advanced technique. Students will explore the history and choreographic style of at least 5 choreographers including George Balanchine, William and Lew Christianson, Frederick Ashton, Richard Arpel, and Twyla Tharp. Students will learn at least that many variations. Grading is based on attendance and increased proficiency on Pointe.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 2220 - Modern Dance II
1 credit

Designed for those who have had at least one year of experience in modern dance techniques. Course is a continuation of DANC 1200. Music and music theory will be continued. Students will be encouraged to explore their own movement patterns as well as the modern choreographers of the present such as Alvin Ailey and Paul Taylor.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 2240 - Ballet III
1 credit

Designed for the more proficient dancer, one who wishes to use classical ballet as an important part of their career. Both barre and center practice will consist of longer, more intricate combinations. Physical demands will be greater as to help the students reach an advanced performance as well as technical level. The same styles of technique will be taught as in the lower ballet classes as well as the continued exploration of dance related topics. Grading is based on tests from the required texts as well as attendance and effort. Some library research will be required.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 2260 - Dance Composition
1-2 credits

Designed for the intermediate dancer to allow them an opportunity to explore their own creative techniques in modern, jazz and classical ballet. Grading is based on attendance, effort, creativity, interim projects, and a final choreographic project. Final project may be a collaboration between two students. Some of the student choreography may be performed in Ballet Repertory's Spring Concert.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 2310 - Dance Ensemble
1-2 credits

Performance based class. The members are students who wish to perform. Company performs two major concerts per year as well as Lecture Demos and other performing opportunities. Time and credit hours are arranged by the instructor.

Prerequisite/Restriction: Membership is by audition conducted by the Artistic Director.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

DANC 2800 - Dance Production
1-3 credits

Designed for the dancers who wish to perform throughout Utah with the CEU Dance Department. Performances are used for education as well as recruiting. Students will also learn the correct performance protocol from the aspect of a performer as well as a member of the audience.

Prerequisite/Restriction: Students must be a member of DANC 2310

Campus: USU Eastern only
DANC 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in dance education. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements. Students must meet certain proficiency requirements and have permission from the instructor or coordinator.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only
DANC 2997 - Special Problems
1-3 credits

Individual work approved by the instructor. Time, credit and content to be arranged.

Campus: USU Eastern only
DANC 2999 - Workshop
1-3 credits

Designed to meet the changing needs and educational background and opportunities of the dance students. Permission of the instructor is required. Content, and credit hours arranged by the instructor only. No previous dance experience required.

Campus: USU Eastern only
Diesel Equipment Technology (USU Eastern)

DSME 1000 - Introduction to Transportation Technology
1
4 credits

First course in automotive or diesel technology. Students will gain needed skills in shop safety and other basic skills that will prepare students for specific automotive or diesel courses. The following topics will be covered: using manual and information systems, precision measurement, tires and wheels, bearings, headlamp adjustment, oils and fluids, cleaning methods, gaskets and sealants, cooling systems and belts and hoses. Course can be articulated with high school automotive courses.
Cross-listed as: AUTO 1000
Campus: USU Eastern only
DSME 1110 - Diesel Engine Overhaul Theory
4 credits
Designed to instruct the student on correct diesel engine overhaul procedures from disassembly to assembly. Identification, operation, inspection, repair, maintenance and failure analysis of each diesel engine component will be discussed. Attention is also given to parts cleaning methods as well as fasteners and measuring tools.
Prerequisite/Restriction: MATH 0990 or a higher level MATH course.

Campus: USU Eastern only
DSME 1130 - Diesel Engine Overhaul Lab
4 credits
Hands-on experience overhauling a diesel engine and functions much like a diesel engine repair shop. Students will individually disassemble, inspect, and rebuild at least one diesel engine. Emphasis is placed on component identification, measuring, inspection, analyzing wear, and detecting parts failure. Students are introduced to various methods for cleaning parts using the latest cleaning technology as well as identifying fasteners and using measuring and hand tools. Particular attention is given to attendance, quality of work, productivity.
Corequisite: DSME 1330

Campus: USU Eastern only
DSME 1310 - Fluid Power Theory
4 credits
Classroom instruction is given in the basic fundamental principles of fluid power. Students will discuss and mathematically calculate the relationships between hydraulic pressure, force, area, and resistance as well as rpm, torque, hydraulic horsepower, energy and heat loss. Covers the theory and operation of hydraulic fluid, reservoir design, filters, pumps, actuators, pressure controls, directional controls, and flow controls. Students will have the opportunity to learn schematic symbols through representations of various types of circuit design representing both closed loop and open center systems in industrial as well as mobile applications. Topics discussed will be pressure compensated systems, hydrostatic drive circuits and system troubleshooting. As the course progresses, students will be introduced to methods of troubleshooting hydraulic systems using a flow meter and pressure gauges. Students will also identify and review hydraulic fittings, hose types, and safety.
Prerequisite/Restriction: Completion of or concurrent registration in MATH 0990 or a higher level MATH course.
Corequisite: DSME 1330

Campus: USU Eastern only
DSME 1330 - Fluid Power Lab
4 credits
Hands-on experience identifying, testing, troubleshooting, and rebuilding various brands of hydraulic components. Students will have the opportunity to use a flow meter and pressure gauges to troubleshoot hydraulic components as well as test different components on a hydraulic test bench. Particular emphasis is placed on component identification, failure analysis and hydraulic fitting identification.
Corequisite: DSME 1310

Campus: USU Eastern only
DSME 1340 - Mobile Electrical and Electronics Theory
5 credits
Students will study the basic principles of electricity including electron flow in series and parallel circuits, Ohm’s law, magnetism and semiconductor devices related to the mobile industry. The theory and operation of a complete vehicle electrical system and its various components will be discussed in a series of sub-systems. These sub-systems include: the battery, starter and starting system, alternator and charging system, gauges and instrument panel, vehicle lighting and accessories, engine electronic sensors, as well as the wiring and connections used in each of these systems. Students have the opportunity to learn schematic symbols by studying the various types of electrical circuits used in mobile equipment. Students will be introduced to different test instruments such as the digital multi-meter and testing techniques unique to each type of equipment will be
Presented.

Prerequisite/Restriction: MATH 0990 or a higher level MATH course.

Campus: USU Eastern only

DSME 1360 - Mobile Electrical and Electronics Lab
3 credits

Hands-on experience is given to the student enrolled in DSME 1360. Each individual type of testing equipment is demonstrated as well as techniques given for troubleshooting, servicing and testing electrical systems: Students demonstrate their proficiency using this equipment to test batteries, starters and the starting system, the alternator and charging system, gauges, lights and accessories, engine sensors, as well as the wiring harness and connections used in each of these systems. Particular emphasis is placed on component identification, isolating component failures, and electrical safety procedures for both personal safety as well as preventing electrical system damage.

Campus: USU Eastern only

DSME 1500 - Professional Vocational Leadership (VICA)
1 credit

Supports and facilitates the goals and objectives of Vocational Industrial Clubs of America (VICA). Students will gain skills in the following areas: personal development, service, team building and leadership, workplace skills, and interview skills. Students may participate in regional, state and national competitions.

Repeatable for credit
Campus: USU Eastern only

DSME 2210 - Advanced Diesel Engine Theory
5 credits

Continuation of DSME 1110. Rather than focusing on individual engine components, this course covers engine systems: i.e. lubrication, cooling, intake and exhaust, and fuel systems. Particular attention is given to the theory and operation of the diesel engine combustion process while controlling engine speed and torque through the use of mechanical governors and engine electronics. This course will focus particularly on Cat, Cummins, and Detroit diesel engine electronics and computer software.

Prerequisite/Restriction: DSME 1110; MATH 0990 or a higher level MATH course.

Campus: USU Eastern only

DSME 2230 - Advanced Diesel Engine Lab
5 credits

Continuation of DSME 1130. After an engine is rebuilt it will need to be tested on the dynamometer. The dyno provides opportunities for troubleshooting “live” engines. Students will dyno test the engine they rebuilt in DSME 1130 as well as perform timing and tune-up procedures on different models of diesel engines. Students will have the opportunity to use a laptop computer to program diagnose Cat, Cummins, and Detroit diesel electronic engines. Particular attention is given to attendance, quality of work, productivity during class time and the ability to follow detailed written procedures from service manuals. Shop safety is also stressed.

Prerequisite/Restriction: DSME 1130

Campus: USU Eastern only

DSME 2410 - Heavy Duty Chassis and Power Train Theory
5 credits

Covers highway truck air systems, foundation brake repair and maintenance, front end, tandem, and trailer axle alignment, heavy duty suspension systems, annual and automatic transmissions, clutches, differentials, and drive lines. Students will calculate drive line angles, gear ratios, and tire size, as well as troubleshoot and analyze tire wear, failures of gears, universal joints, clutches, axles, brakes.

Campus: USU Eastern only

DSME 2430 - Heavy Duty Chassis and Power Train Lab
5 credits

Gives students a hands on opportunity to perform preventive maintenance, inspection, adjustments, and repair to air brakes, suspension systems, clutches, transmissions, differentials, and drive line components used in heavy duty diesel equipment. Students will also do computerized front end and tandem alignment on medium and heavy duty trucks. Particular attention is given to attendance, quality of work, productivity during
class time and the ability to follow detailed written procedures from service annuals. Shop safety is also stressed.

**Campus:** USU Eastern only

**DSME 2440 - Mobile Air Conditioning Theory** 2 credits

Covers the principles of heat transfer using refrigerant as the medium. Particular attention is given to the identification and operation of individual system components as well as the variations in system design from OEM to OEM. Different types of refrigerants used in the mobile industry as well as recovery, recycling, storage, handling, and disposal will be discussed. Students are taught methods for R12 to R134A conversion. After EPA laws and guidelines are taught, the student will have the opportunity to test for an IMACA certificate.

**Campus:** USU Eastern only

**DSME 2460 - Mobile Air Conditioning Lab** 1 credit

Students are given the hands-on opportunity to locate, identify, test, service, and troubleshoot different types of mobile AC systems using EPA approved equipment and procedures. They will demonstrate their proficiency using recovery recycling, evacuation, and charging equipment for both R-12 and R-134A refrigerants. System conversion from R-12 to R134A is also demonstrated.

**Campus:** USU Eastern only

**DSME 2977 - Cooperative Education** 1-3 credits

Provides paid, on-the-job work experience directly related to a specific lab course of study in the student’s major. All activities including attendance, on-site work visits, employer and coordinator evaluations, and written assignments are monitored by the co-op coordinator.

**Prerequisite/Restriction:** Approval from Director of Cooperative Education.

**Campus:** USU Eastern only

**DSME 2988 - Special Problems** 1-3 credits

Lab time approved by the instructor for extra repair projects and “live work” which cannot be completed during normal lab hours. Time and credit to be approved by the instructor.

**Prerequisite/Restriction:** Permission of instructor

**Campus:** USU Eastern only

**Economics**

**ECN 1010 - Economics as a Social Science (BSS)**

BSS Breadth Social Sciences

3 credits

Overviews both microeconomics and macroeconomics for students planning no further formal study of business and/or economics. Analysis of resource allocation, supply and demand, price determination under competitive and monopolistic conditions. Analyzes factors influencing aggregate levels of output, employment, and prices, introduction to U.S. fiscal and monetary policy, international trade and international monetary systems.

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Fall, Spring, Summer

**ECN 1500 - Introduction to Economic Institutions, History, and Principles (BAI)**

BAI Breadth American Institutions

3 credits

Designed to build an understanding of economic institutions, history, and principles. Relationship between private and public sectors of U.S. economy. Analysis of major economic institutions, such as property rights, markets, business organizations, labor unions, money and banking, trade, and taxation.

**Semester(s) Traditionally Offered:** Fall, Spring, Summer

**ECN 2010 - Introduction to Microeconomics (BSS)**

BSS Breadth Social Sciences

3 credits

Designed to build an understanding of the economics of the marketplace from the perspectives of individual consumer and producer or business. Development and application of microeconomic principles to demonstrate...
the role and limitations of competitive markets in motivating socially efficient consumer, business, and public sector choices.

Prerequisite/Restriction: ECN 1500.

Cross-listed as: APEC 2010.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 3010 - Managerial Economics (DSS)
DSS Depth Social Sciences
3 credits

Microeconomic principles applied to economic decision-making and policy formulation, with emphasis at the level of business firm and the individual consumer. Designed for undergraduate business and accounting majors. Credit will not be given for both ECN 3010 and ECN 4010/APEC 4010.

Prerequisite/Restriction: ECN 2010/APEC 2010, MATH 1100, STAT 2300.

Semester(s) Traditionally Offered: Fall, Spring

ECN 3170 - Law and Economics
3 credits

Explains legal and political rules, the organization of government, and other institutional processes. Uses standard microeconomic tools and concepts, such as scarcity, choice, preferences, incentives, and supply and demand.

Prerequisite/Restriction: POLS 1100.

Cross-listed as: POLS 3170.

Semester(s) Traditionally Offered: Spring

ECN 3200 - Analytical Rigor: Scientific Methodology in Business and the Social Sciences (DSS)
DSS Depth Social Sciences
3 credits

Explores in detail the idea of hypothesis formulation and evidence in the context of analytical rigor. The idea of necessary skepticism as an element of analytical rigor is discussed.

Prerequisite/Restriction: ECN 1500

Semester(s) Traditionally Offered: Spring

ECN 3300 - Contemporary Issues in International Trade
3 credits

Examines interrelated economic, political, and social issues faced by institutions and individuals at various points in the trade process.

Prerequisite/Restriction: Admission to Huntsman Scholars Junior Year Program.

Cross-listed as: MGT 3300.

Semester(s) Traditionally Offered: Spring

ECN 3400 - Introduction to Global Economic Institutions and Business Environment (DSS)
DSS Depth Social Sciences
3 credits

Designed for future business leaders who want an understanding of the global economic environment in which businesses operate. Topics include global regulatory and political institutions, trade policy, and international capital and currency markets.

Prerequisite/Restriction: ECN 2010/APEC 2010.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 4010 - Intermediate Microeconomics
3 credits

Analysis of behavior of consumers and business firms. Application of theory to the solution of real world problems. Credit will not be given for both ECN 3010 and ECN 4010/APEC 4010.

Prerequisite/Restriction: ECN 2010/APEC 2010, MATH 1100, and STAT 2300.

Cross-listed as: APEC 4010.

Semester(s) Traditionally Offered: Fall, Spring

ECN 4020 - Intermediate Macroeconomics
3 credits

Analysis of underlying causes of unemployment, economic instability, inflation, and economic growth.
Prerequisite/Restriction: ECN 1500 and MATH 1100

Semester(s) Traditionally Offered: Fall, Spring

ECN 4310 - Mathematical Methods in Economics and Finance I (QI)
QI Quantitative Intensive
3 credits

Covers single-variable and multi-variable calculus, exponents and logarithms, linear algebra, and implicit functions. These concepts find economics applications in the theory of the firm, time value of money, IS-LM macro modeling, and more.

Prerequisite/Restriction: ECN 2010/APEC 2010 and MATH 1100.

Semester(s) Traditionally Offered: Fall

ECN 4900 - Independent Reading and Research
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 4950 - Senior Honors Thesis/Project
3 credits

Creative project that will then be written up, and presented, as a Senior Thesis as required for an Honors Plan.

Semester(s) Traditionally Offered: Spring

ECN 4990 - Senior Seminar
1-3 credits

Introduces students to current research and special topics in economics.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ECN 5000 - Advanced Macroeconomic Topics
3 credits

Covers advanced topics in macroeconomics. Exact topics depend on recent developments in the macroeconomic discipline, the research and teaching expertise of the faculty, and the current state of the macroeconomy, both inside and outside of the U.S. Focuses on studying the most recent developments in macroeconomic theory and applying the theory to the pressing problems in the contemporary macroeconomy.

Prerequisite/Restriction: ECN 4020.

Semester(s) Traditionally Offered: Fall

ECN 5100 - History of Economic Thought
3 credits

Origin and development of economic theories of leading thinkers in western civilization.

Prerequisite/Restriction: ECN 2010/APEC 2010.

Semester(s) Traditionally Offered: Spring

ECN 5110 - Economic History of the United States (DSS)
DSS Depth Social Sciences
3 credits

Development of agriculture, industry, transportation, and finance from colonial times.

Prerequisite/Restriction: ECN 2010/APEC 2010.

Semester(s) Traditionally Offered: Fall

ECN 5150 - Comparative Economic Systems (DSS/CI)
DSS/CI Depth Social Sciences and Communications Intensive
3 credits

History, economic theories, and comparative policies of communist, socialist, and capitalistic economies. Problems facing transition economies.

Prerequisite/Restriction: ECN 2010/APEC 2010 and fulfillment of CL2 requirement through coursework or examination (ENGL 2010)

Semester(s) Traditionally Offered: Spring

ECN 5200 - Money and Banking
3 credits

Covers financial markets and the determination of interest rates and asset prices; the money supply process; the structure of the Federal Reserve System and the goals of the Federal Open Market Committee; other
topical central banking issues; and the effects of monetary policy on output, interest rates, inflation, unemployment, financial markets, and exchange rates.

Prerequisite/Restriction: ECN 4020.

Semester(s) Traditionally Offered: Fall

ECN 5300 - Industrial Organization-Game Theory
3 credits

Emphasizes market structure, firm conduct, and economic efficiency. Topics include competition, game theory, monopoly, oligopoly, monopolistic competition, firm strategies, and anti-trust policy in the United States.

Prerequisite/Restriction: ECN 4010/APEC 4010 and ECN 4020.

Semester(s) Traditionally Offered: Spring

ECN 5310 - Mathematical Methods for Economics and Finance II (QI)
QI Quantitative Intensive
3 credits

Covers constrained optimization, unconstrained optimization, integral calculus, differential equations, probability theory, and other related topics. These concepts find application in the theory of the firm, the theory of the consumer, game theory, least squares regression analysis, portfolio theory, asset pricing, insurance contracts, choice under uncertainty, and more.

Prerequisite/Restriction: ECN 4310.

Semester(s) Traditionally Offered: Spring

ECN 5330 - Applied Econometrics (QI)
QI Quantitative Intensive
3 credits

Introduction to basic statistics, simple linear regression, multiple regression, and simultaneous equation models for economics.

Prerequisite/Restriction: STAT 2000 or STAT 2300 or STAT 3000.

Cross-listed as: APEC 5330.

Semester(s) Traditionally Offered: Spring

ECN 5400 - International Trade Theory
3 credits

Intermediate-level issues in international trade theory and commercial policy. Topics include competitive and noncompetitive trade models, trade policy, balance of payments accounting, exchange rates, international lending and investment, and economic growth.

Prerequisite/Restriction: ECN 4020; ECN 3010 or ECN 4010/APEC 4010.

Semester(s) Traditionally Offered: Fall

ECN 5500 - Public Finance (CI)
CI Communications Intensive
3 credits

One of the most important questions in economics is when or if we should abandon the personal decisions of markets and substitute choosing with and for others through government. By examining the economic activities of government, including taxation, spending, and regulation, this course attempts to answer that question.

Prerequisite/Restriction: ECN 1500 and fulfillment of CL2 requirement through coursework or examination (ENGL 2010)

Semester(s) Traditionally Offered: Fall

ECN 5600 - Financial Economics
3 credits

Introduction to development of our present system of money, banking, and financial institutions. Analysis of central bank policy, capital markets, speculative markets, and portfolio theory.

Prerequisite/Restriction: ECN 4020; ECN 3010 or ECN 4010/APEC 4010.

Semester(s) Traditionally Offered: Spring

ECN 5950 - Economic Research and Methods (QI)
QI Quantitative Intensive
3 credits

Introduction and use of research methods to study focused research topics in economics. Specific topics and methods can vary according to the expertise of the
instructor. Methods used within course research can include mathematical modeling, simulation and econometric estimation techniques.

Prerequisite/Restriction: ECN 4010 and ECN 4020

Semester(s) Traditionally Offered: Spring

ECN 6000 - Macroeconomic Theory I
3 credits

Lays a foundation of advanced macroeconomic analysis, integrating theory, data, and computational methods. Special attention given to real-world issues, with an emphasis on how economists use macro models and data to improve business and public policy decisions. Topics covered include neoclassical and endogenous growth theories, real business cycle and new Keynesian theories of economic fluctuations, monetary theory, macroeconomic policy, and open-economy macroeconomics.

Cross-listed as: ECN 7230 and APEC 6000/APEC 7230.

Semester(s) Traditionally Offered: Fall

ECN 6050 - Fundamentals of Economics
3 credits

Introduction of economic principles for students entering a master's degree in the Huntsman School of Business.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

Semester(s) Traditionally Offered: Summer

ECN 6250 - Graduate Internship
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 6310 - Managerial Economics
3 credits

Application of concepts and theories, based on managerial economics, to business problems. Addresses cost theory, pricing, market structures, and forecasting.

Semester(s) Traditionally Offered: Spring

ECN 6330 - Applied Econometrics
3 credits

Provides graduate-level introduction to applied regression tools, including: simple and multivariate regression analysis; linear, nonlinear, and qualitative dependent variable models; distributed lags; seemingly unrelated regression; and model specification and validation tests.

Prerequisite/Restriction: Background in statistics and calculus.

Cross-listed as: APEC 6330.

Semester(s) Traditionally Offered: Fall

ECN 6910 - Independent Research
1-3 credits

Directed readings. Credits from this course toward any economics graduate degree require approval of the student's advisory committee, the department graduate committee, and the department head.

Prerequisite/Restriction: ECN 4010/APEC 4010 and ECN 5000.

Cross-listed as: APEC 6910.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Page: 1 <- Back 10 ... 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 ... Forward 10 -> 55

Economics

ECN 6970 - Thesis Research
1-9 credits

Master's level research.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 6990 - Continuing Graduate Advisement
1-9 credits

Master's level advisement.
Repeatable for credit. Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ECN 7130 - Microeconomic Theory I
3 credits

Provides a rigorous introduction to graduate-level microeconomic theory. While the specific focus is on the theoretical construct of graduate-level microeconomic models, the broad objective of the class is to lay the foundation for empirical applications in microeconomics. To meet this broad objective, the course covers theory of the firm, consumer theory, market structure, theory of public goods and externalities, and welfare economics. A.

Cross-listed as: APEC 7130.

Semester(s) Traditionally Offered: Fall

ECN 7140 - Microeconomic Theory II
3 credits

Extends the theoretical foundations of microeconomics with an emphasis on model building in economics. Topics include static games of complete and incomplete information, dynamic games of complete and incomplete information, imperfectly competitive markets, risk and uncertainty, public goods, general equilibrium, and information economics.

Prerequisite/Restriction: ECN 7130/APEC 7130, ECN 7360/APEC 7360.

Cross-listed as: APEC 7140.

Semester(s) Traditionally Offered: Spring

ECN 7230 - Macroeconomic Theory I
3 credits

Lays a foundation of advanced macroeconomic analysis, integrating theory, data, and computational methods. Special attention given to real-world issues, with an emphasis on how economists use macro models and data to improve business and public policy decisions. Topics covered include neoclassical and endogenous growth theories, real business cycle and new Keynesian theories of economic fluctuations, monetary theory, macroeconomic policy, and open-economy macroeconomics.

Cross-listed as: APEC 7230/APEC 6000.

ECN 6000.
Semester(s) Traditionally Offered: Fall

ECN 7240 - Macroeconomic Theory II
3 credits

Extends the foundations of ECN 7230 with a more in-depth look at the theory and computational aspects of various models of economic growth and business cycles.

Prerequisite/Restriction: ECN 7230/APEC 7230 and ECN 7360/APEC 7360.

Cross-listed as: APEC 7240.

Semester(s) Traditionally Offered: Spring

ECN 7310 - Econometrics I
3 credits

Begins with a review of probability and statistics. Remainder of course is spent discussing the Classical linear regression model, least squares and maximum likelihood estimation, finite and asymptotic sample properties, inference, prediction, and nonlinear optimization.

Cross-listed as: APEC 7310

Semester(s) Traditionally Offered: Fall

ECN 7320 - Econometrics II
3 credits

Extension of ECN 7310, covering topics such as nonspherical disturbances, panel data, simultaneous equations, time series and distributed lag models, and limited and qualitative dependent variable models.

Prerequisite/Restriction: ECN 7310/APEC 7310.

Cross-listed as: APEC 7320.

Semester(s) Traditionally Offered: Spring

ECN 7350 - Mathematical Economics I
3 credits

Includes linear equations, matrix algebra, multivariate...
calculus, static optimization, comparative static analysis, constrained optimization, and Kuhn-Tucker conditions.

Cross-listed as: APEC 7350.

Semester(s) Traditionally Offered: Fall

ECN 7360 - Mathematical Economics II
3 credits

Extends the presentation of ECN 7350 by covering applications of constrained optimization, the envelope theorem and applications, differential equations, dynamic economics, and optimal control.

Prerequisite/Restriction: ECN 7350/APEC 7350.

Semester(s) Traditionally Offered: Spring

Education

EDUC 1000 - Teacher Assistant Experience
1-3 credits

For education students. Designed to familiarize them with the teaching role and to assist cooperating teachers. Classroom experiences in early childhood, elementary, or secondary education available while assisting a certified teacher in a variety of settings.

Prerequisite/Restriction: FCHD 2500, FCHD 2610 or TEAL 1010

Campus: USU Eastern only

EDUC 1005 - Teacher Assistant Experience
1-3 credits

For education students. Designed to familiarize them with the teaching role and to assist cooperating teachers. Classroom experiences in early childhood, elementary, or secondary education available while assisting a certified teacher in a variety of settings.

Prerequisite/Restriction: FCHD 2500, FCHD 2610 or TEAL 1010

Campus: USU Eastern only

EDUC 5000 - Senior Honors Seminar
2 credits

For students in the Emma Eccles Jones College of Education and Human Services to explore an honors interdisciplinary theme selected by the Honors Committee as a culmination of an honors experience.

Semester(s) Traditionally Offered: Spring

EDUC 5560 - Special Topics
0.5-4 credits

Field-based program focusing upon characteristics of effective teaching methodologies, teaching performance, curriculum decision making, value guidelines, and the characteristics of the learner. May be graded with a letter grade or graded as Pass/Fail, as determined by the instructor.

Cross-listed as: EDUC 6560 and TEAL 5560/TEAL 6560.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
EDUC 6010 - Introduction to Program Evaluation: Evaluation Models and Practical Guidelines
3 credits

Alternative approaches and practical guidelines for conducting evaluation studies. Through case studies and simulations, addresses impact of social, political, and ethical issues on evaluation.

Cross-listed as: PSY 6010.

Semester(s) Traditionally Offered: Fall, Spring

EDUC 6540 - Data-Based Decision Making for School Leaders
3 credits

prospective school leaders to conduct research, as well as to collect and analyze data for decision making and program evaluation in schools.

Semester(s) Traditionally Offered: Fall

EDUC 6550 - Research for Classroom Teachers
3 credits

Assists teachers in applying measurement issues and research methods to classroom problems; in locating, interpreting, and using research reports; and in writing research-related papers on teaching.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 6560 - Special Topics
0.5-4 credits

Field-based program focusing upon characteristics of effective teaching methodologies, teaching performance, curriculum decision making, value guidelines, and the characteristics of the learner. May be graded with a letter grade or graded as Pass/Fail, as determined by the instructor.

Cross-listed as: EDUC 5560 and TEAL 6560/TEAL 5560.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 6570 - Introduction to Educational and Psychological Research
3 credits

Provides introduction to research methods, including identification of research problem, review and evaluation of research literature, and design and implementation of research project.

Prerequisite/Restriction: PSY 2800.

Cross-listed as: PSY 6570.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 6600 - Research Design and Analysis I
3 credits

Research design and statistical concepts for research in education, human services, and psychology, with emphasis on the selection and interpretation of statistical analyses.

Prerequisite/Restriction: EDUC 6570/PSY 6570, passing score on 6600 Pretest via WebCT, and permission of instructor.

Cross-listed as: PSY 6600.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 6700 - Introduction to Behavioral Research in Education
3 credits

Examines single-subject research methods for applied research, including measurement, design, and analysis issues.

Cross-listed as: SPED 6700

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Summer

EDUC 6770 - Qualitative Methods I
3 credits

Introduction to qualitative research, including foundations; research designs and strategies of inquiry (case studies, ethnography, phenomenology, grounded theory, biographical, historical, participative inquiry); sampling; fieldwork and data collection; and analysis.

Prerequisite/Restriction: EDUC 6570/PSY 6570.

Semester(s) Traditionally Offered: Fall, Spring
EDUC 7610 - Research Design and Analysis II
3 credits

Advanced treatment of research design and statistical concepts and issues in educational, human services, and psychological research.

Prerequisite/Restriction: EDUC 6600/PSY 6600.

Cross-listed as: PSY 7610.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 7650 - Longitudinal Research Design and Analysis
3 credits

Applied longitudinal study design and analysis for research in behavioral and educational sciences. Explores case-control, cohort, cross-over, complex sample, and randomized controlled trial designs. Examines analytical methods for observed outcomes of various distributions (e.g., Gaussian, Binomial, Poisson).

Prerequisite/Restriction: EDUC 7610/PSY 7610.

Cross-listed as: PSY 7650.

Semester(s) Traditionally Offered: Spring

EDUC 7670 - Literature Reviews in Education and Psychology
2 credits

Advanced concepts in designing, writing, and critiquing literature reviews.

Prerequisite/Restriction: EDUC 6600/PSY 6600 or permission of instructor.

Cross-listed as: PSY 7670.

Semester(s) Traditionally Offered: Spring, Summer

EDUC 7700 - Single-Subject Research Methods and Designs
3 credits

Examines single-subject research methods for applied research, including measurement, design, and analysis issues.

Prerequisite/Restriction: EDUC 6700 or SPED 6700 or permission of instructor

Cross-listed as: SPED 7700

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Summer

EDUC 7780 - Qualitative Methods II
3 credits

Builds on and applies concepts covered in EDUC 6770, emphasizing analysis of data, critique of qualitative research, and design and implementation of qualitative research. Students registered for EDUC 6780 conduct a qualitative research project.

Prerequisite/Restriction: EDUC 6770.

Cross-listed as: EDUC 6780.

Semester(s) Traditionally Offered: Spring

EDUC 7970 - Dissertation Research
1-18 credits

Dissertation research for students in the Research and Evaluation specialization.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

EDUC 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Electrical and Computer Engineering

ECE 1000 - Introduction to Electrical and Computer Engineering
2 credits

Basic concepts and techniques for electrical and computer engineering majors. Introduction to analog and digital electronics with fundamental laboratory skills. One lecture and one lab.

Prerequisite/Restriction: MATH 1050 and MATH 1060; or AP Calculus score of at least 3 on the AB test; or Math
ACT score of at least 27. Enrollment limited to electrical engineering and computer engineering majors only.

Semester(s) Traditionally Offered: Fall

ECE 2250 - Electrical Circuits
4 credits

Introduction to electrical circuits and basic circuit elements. Circuit theory, analysis techniques, and introduction to design. DC analysis. First-order inductive and capacitive circuits. Operational amplifiers. AC steady-state analysis. Introduction to computer-aided design and analysis. Three lectures, one lab.

Prerequisite/Restriction: MATH 2280 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring

ECE 2255 - Circuits Lab
1 credit

Introduction to measurements and use of laboratory instrumentation, which include: electronic measuring instruments including multimeters, function generators, voltmeters, power supplies, oscilloscopes, basic circuit design and analysis, loading and frequency effects. Introduction to computer aided design and analysis using PSpice.

Prerequisite/Restriction: ENGR 1000, ENGR 1005, PHYS 2220, PHYS 2225 and MATH 2280

Corequisite: ECE 2250

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall (on demand only)

ECE 2700 - Digital Circuits
4 credits

Design of combinational and sequential logic circuits with discrete and programmable logic devices. Simulations and timing analysis. Use of CAD tools. Design of digital systems. Three lectures, one lab.

Prerequisite/Restriction: Minimum grade of C- in CS 1400.

Semester(s) Traditionally Offered: Fall, Spring

ECE 3410 - Microelectronics I
4 credits

Fundamentals of transistors, operational amplifiers, and other integrated circuits, along with their utilization in amplifiers, switches, and other applications. Laboratory work required.

Prerequisite/Restriction: ECE 2250 and ECE 3620 (may be taken concurrently).

Semester(s) Traditionally Offered: Spring

ECE 3620 - Circuits and Signals
3 credits

Continuation of basic circuit concepts. Second-order response, time-domain analysis of higher-order systems. Impulse response and convolution. Transform domain analysis of circuits and other systems. Some lab and computational work required.

Prerequisite/Restriction: MATH 2270, MATH 2280, ECE 2250, CS 1410, PHYS 2220 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall

ECE 3640 - Signals and Systems
3 credits


Prerequisite/Restriction: ECE 3620.

Semester(s) Traditionally Offered: Spring

ECE 3710 - Microcontroller Hardware and Software
4 credits

Synthesis of microcontroller systems, including hardware, programming, and interfacing. Covers architecture basics, instruction set, assembly language programming, I/O, timing, and interrupts. Includes hands-on implementation. Three lectures, one lab.

Prerequisite/Restriction: ECE 2250, ECE 2700, CS 1410.

Semester(s) Traditionally Offered: Spring
ECE 3810 - Engineering Professionalism
1 credit
Introduces students to life as an engineer, including: the design process, working in teams, understanding professional and ethical responsibility, the impact of engineering on society, and the need for continued professional development. Also includes discussion of how engineering meets the contemporary needs of society.
Prerequisite/Restriction: ENGL 3080 (may be taken concurrently).
Semester(s) Traditionally Offered: Fall, Spring

ECE 3870 - Electromagnetics I
4 credits
Discussion of Maxwell's equations, electromagnetic waves, power and energy, reflection and refraction processes, transmission lines, waveguides, and antennas. Explores electrostatic and magnetostatic fields produced by charge and current distributions, as well as electromagnetic forces and materials.
Prerequisite/Restriction: ECE 2250, MATH 2210, MATH 2270, MATH 2280, PHYS 2220.
Semester(s) Traditionally Offered: Spring

ECE 4250 - Internship/Co-op
3 credits
Planned, career-related work experience in industry. Students must register with USU Co-op Office and have program approved by the ECE co-op advisor. Written report required.
Prerequisite/Restriction: Professional standing.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 4650 - OPTICS I
3 credits
Topics include mathematics of wave motion, electromagnetic theory of light, light propagation, geometrical optics, and superposition of waves. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.
Prerequisite/Restriction: PHYS 2710, MATH 2210, MATH 2250; or ECE 3870.
Cross-listed as: ECE 6650 and PHYS 4650/PHYS 6650.
Semester(s) Traditionally Offered: Fall

ECE 4680 - OPTICS II
3 credits
Topics include polarization, interference, diffraction, Fourier optics, coherence theory, and the quantum nature of light. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.
Prerequisite/Restriction: PHYS 4650/ECE 4650 or PHYS 6650/ECE 6650.
Cross-listed as: ECE 6680 and PHYS 4680/PHYS 6680.
Semester(s) Traditionally Offered: Spring

ECE 4740 - Computer and Data Communications
3 credits
Systems approach to computer and data communications. Includes transmission lines, hardware controllers, computer interfaces, and protocols relating to local and wide area networks.
Semester(s) Traditionally Offered: Fall

ECE 4840 - Engineering Design (CI)
CI Communications Intensive
3 credits
Individual or team engineering project, including design, development, and testing. Interdisciplinary projects strongly encouraged. Design reviews and written progress reports required.
Prerequisite/Restriction: ECE 3810.

ECE 4850 - Engineering Communications (CI)
CI Communications Intensive
2 credits
Includes a written proposal and project report, oral design reviews, presentation graphics, and project presentation. Must be taken concurrently with a senior-level capstone design course.

Prerequisite/Restriction: ECE 3810.

Semester(s) Traditionally Offered: Fall, Spring

ECE 4930 - Special Studies for Undergraduates
1-3 credits

Independent or group study of engineering problems not covered in regular course offerings.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 5140 - Electrical Energy Engineering
3 credits

Introduction to electrical energy and power sources, distribution and consumption; economics, device, instrumentation, and systems analysis/design.

Semester(s) Traditionally Offered: Fall

ECE 5220 - Electro-optical Engineering
3 credits

Explores optical principles; image formation; electro-optical materials and components; electro-optical detectors, radiometry, and photometry; electro-optical devices and instruments; and electro-optical systems analysis and design. Designed for senior-level undergraduates and first-year graduate students.

Prerequisite/Restriction: ECE 3870 or PHYS 3600.

Semester(s) Traditionally Offered: Spring

ECE 5230 - Spacecraft Systems Engineering
3 credits

Spacecraft communications, telemetry systems, and command and data handling. Introduction to astrodynamics and orbit design. Electrical power generation and storage. Spacecraft subsystems (e.g., guidance, navigation, and control).

Prerequisite/Restriction: MATH 2270, MATH 2280.

Semester(s) Traditionally Offered: Fall

ECE 5240 - Space System Design
3 credits

Students in teams perform a space system design involving all aspects, including technical, cost, and schedule. Class is linked to national design competitions and/or current USU spacecraft design projects.

Prerequisite/Restriction: ECE 5230 or MAE 5520.

Cross-listed as: MAE 5530.

Semester(s) Traditionally Offered: Spring

ECE 5310 - Control Systems
3 credits

Study of analog and computer controlled systems, classical and modern control system design methods, s-domain and z-domain transfer function models, state space, dynamics of linear systems, and frequency domain analysis and design techniques. Introduction to controllability and observability, and full-state pole placement controller design. Laboratory work required.

Prerequisite/Restriction: ECE 3640.

Semester(s) Traditionally Offered: Spring

ECE 5320 - Mechatronics
4 credits

Principles, modeling, interfacing, and signal conditioning of motion sensors and actuators. Hardware-in-the-loop simulation and rapid prototyping of real-time closed-loop computer control of electromechanical systems. Modeling, analysis, and identification of discrete-time or sampled-data dynamic systems. Commonly used digital controller design methods. Introduction to nonlinear effects and their compensation in mechatronic systems. Laboratory work and a design project required. Three lectures and one lab.

Prerequisite/Restriction: ECE 5310.

Semester(s) Traditionally Offered: Spring

ECE 5340 - Mobile Robots
4 credits
Hardware, including embedded processors, sensors, DC motors, interface electronics, wheeled platforms, and battery power. Software, including low-level device drivers and mobile rocket simulation. Algorithms, including reactive and planning approaches. Advanced sensors. Mobile robot kinematics, dynamics, and control. A project is required.

Prerequisite/Restriction: ECE 3640.

Semester(s) Traditionally Offered: Fall

ECE 5410 - Semiconductor Devices
3 credits

Introduction to semiconductor physics and devices. Students receive an introduction to the operation of the most important devices used in integrated circuit technology. Emphasis placed on understanding device operation.

Prerequisite/Restriction: ECE 3410.

Semester(s) Traditionally Offered: Fall

ECE 5420 - Microelectronics II
3 credits

Design of electronic circuits for applications in instrumentation, communication, control, and power systems.

Prerequisite/Restriction: ECE 3410.

Semester(s) Traditionally Offered: Fall

ECE 5430 - Applied CMOS Electronics
3 credits

Analysis, design, and application of digital and analog MOS integrated circuits in electronic systems. Includes device-lever VLSI, fabrication technology, and semiconductor device physics.

Prerequisite/Restriction: ECE 2700 and ECE 3410.

Cross-listed as: ECE 6430.

Semester(s) Traditionally Offered: Spring

ECE 5440 - Analog VLSI I
3 credits

Introduces design principles and techniques for fully-integrated CMOS analog circuits. Topics include advanced MOSFET device modeling, design and verification of operational amplifiers, and switched-capacitor circuits.

Prerequisite/Restriction: ECE 5420.

Semester(s) Traditionally Offered: Spring

ECE 5460 - VLSI Design Automation
3 credits

Introduces students to basic algorithms and methodologies used for automating the design of modern VLSI circuits. Emphasizes physical design problems, including partitioning, floorplanning, and placement and routing of VLSI circuits. Students learn to identify and formulate CAD design problems using algorithmic paradigms, such as simulated annealing, dynamic programming, and mathematical programming. Students will also gain experience in the development of VLSI-CAD tools.

Prerequisite/Restriction: ECE 5530.

Cross-listed as: ECE 6560.

Semester(s) Traditionally Offered: Fall

ECE 5470 - VLSI Design
3 credits

Introduces the standard cell library-based design flow in VLSI, including design methodology and IP design, CMOS circuit design styles, and design technology for low power and thermal aware designs.

Prerequisite/Restriction: ECE 5460/ECE 6460 and ECE 5530 or equivalent.

Cross-listed as: ECE 6470.

Semester(s) Traditionally Offered: Spring

ECE 5530 - Digital System Design
3 credits

Introduces modern top-down, bottom-up approach to design of digital systems, emphasizing programmable
devices. Extensive use of CAD tools. Designing with ABEL, and introduction to designing with Verilog HDL. Laboratory work required.

Prerequisite/Restriction: ECE 2700.

Semester(s) Traditionally Offered: Fall

ECE 5630 - Introduction to Digital Signal Processing
3 credits

Theory and principles of digital signal processing, including discrete-time signals and systems, Z-Transforms, Fourier analysis, FIR and IIR digital filter design, discrete Fourier transforms, and multi-rate processing. Laboratory work required.

Prerequisite/Restriction: ECE 3640.

Semester(s) Traditionally Offered: Fall

ECE 5640 - Real-Time Processors
4 credits

Real-time processor architectures and methods used for digital signal processing. Includes C and assembly language programming, modern DSP architectures, tools for real-time system development, and finite word-length effects. Laboratory includes implementation of hardware-based real-time systems. Three lectures, one lab.

Prerequisite/Restriction: ECE 3640 and ECE 3710.

Semester(s) Traditionally Offered: Spring

ECE 5660 - Communication Systems I
3 credits

Explores fundamentals of analog and digital communication systems. Focuses on modulation, demodulation, detection, and synchronization.

Prerequisite/Restriction: ECE 3640 and MATH 5710; or graduate standing.

Semester(s) Traditionally Offered: Spring

ECE 5720 - Computer Systems Programming and Architecture
3 credits

Advanced assembly language and systems programming concerned with performance. Study of modern computer architecture issues, such as caching, pipelining, concurrent instruction execution, and virtual memory.

Prerequisite/Restriction: ECE 3710.

Semester(s) Traditionally Offered: Fall

ECE 5750 - Computer Architecture
3 credits

Modern architecture fundamentals, instruction set analysis and design, pipelined and superscalar architectures, software-hardware interaction, memory hierarchy, virtual memory stresses, and evaluation of multi-level systems.

Prerequisite/Restriction: ECE 5720 or equivalent.

Semester(s) Traditionally Offered: Spring

ECE 5770 - Microcomputer Interfacing
4 credits

Design of hardware and software interfaces to microcomputers for instrumentation and control applications. Three lectures, one lab.

Prerequisite/Restriction: ECE 3710.

Semester(s) Traditionally Offered: Spring

ECE 5780 - Real-Time Systems
4 credits

Real-time system design and implementation of basic concepts, including interrupts and controllers, context switch, concurrent processes, semaphores, message passing, rate monotonic and deadline scheduling, hardware system design and test issues, and typical engineering practice. Includes hands-on implementation. Three lectures, one lab.

Prerequisite/Restriction: ECE 5720.

Semester(s) Traditionally Offered: Spring

ECE 5800 - Electromagnetics II
3 credits

General plane wave solution of Maxwell’s equations,
potential functions, radiation, 2-D solution to Laplace's equation, and fundamental electromagnetic theory.

Prerequisite/Restriction: ECE 3870.

Semester(s) Traditionally Offered: Fall

ECE 5810 - Microwaves I
3 credits

Impedance matching, microwave network analysis, waveguides, nonlinear elements, analysis and design of power dividers, filters, and ferromagnetic circuits. Laboratory work required.

Prerequisite/Restriction: ECE 3870.

Semester(s) Traditionally Offered: Spring

ECE 5850 - Antennas I
3 credits

Theory and application of electromagnetic radiation and radiating structures. Emphasis on antenna designs for modern wireless communications and radar systems. P.

Prerequisite/Restriction: ECE 3870.

Semester(s) Traditionally Offered: Fall

ECE 5870 - Wireless Communications
3 credits

Characteristics of the physical channel, fading and multipath, frequency reuse, interference, and system capacity. Equalization, diversity, and channel coding. Laboratory experiments focus on design issues and tradeoffs in a wireless communication system.

Prerequisite/Restriction: ECE 3870.

Semester(s) Traditionally Offered: Fall

ECE 6010 - Stochastic Processes in Electronic Systems
3 credits

Introduction to stochastic processes in communications, signal processing, digital and computer systems, and control. Topics include continuous and discrete random processes, correlation and power spectral density, optimal filtering, Markov chains, and queuing theory.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Fall

ECE 6030 - Mathematical Methods for Signals and Systems
3 credits

Signal representation using vector spaces. Linear algebraic techniques for signal modeling and estimation. Optimal detection and estimation algorithms, with applications.

Prerequisite/Restriction: Graduate status.

Semester(s) Traditionally Offered: Spring

ECE 6140 - Advanced Electrical Energy Engineering
3 credits

Computer-aided design of electromechanical, solar, chemical, hydroelectric, hydrocarbon, wind, nuclear, geothermal, oceanic, transmission, and distribution systems. Priority assessment is given to efficiency, reliability, cost effectiveness, and reduced environmental impact (renewable and nonrenewable energy).

Prerequisite/Restriction: ECE 5140

Semester(s) Traditionally Offered: Fall

ECE 6240 - Space Environment and Engineering
3 credits

Study of space environment and models used for engineering analysis. Topics include considerations for engineering in the space environment, such as plasma interactions, debris, chemical reactions, radiation effects, and thermal issues.

Prerequisite/Restriction: MATH 2270, MATH 2280.

Corequisite: ECE 5230.
Cross-listed as: PHYS 6240.

Semester(s) Traditionally Offered: Fall

ECE 6250 - Graduate Internship/Coop
1-3 credits

Planned work experience in industry. Detailed program; must have prior approval. Written report required.

Prerequisite/Restriction: Permission of instructor.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 6320 - Linear Multivariable Control
3 credits

Modeling, analysis, and design of multi-input, multi-output control systems, including both state space and transfer matrix approaches, with an emphasis on stability.

Prerequisite/Restriction: ECE 5310 or MAE 5310.

Cross-listed as: MAE 6320.

Semester(s) Traditionally Offered: Fall

ECE 6340 - Spacecraft Attitude Control
3 credits

Spacecraft attitude dynamics and controls. Spin stabilized, three axis, and dual spin modes. Attitude determination techniques.

Prerequisite/Restriction: ECE 5310 or MAE 5310

Cross-listed as: MAE 6340.

Semester(s) Traditionally Offered: Fall

ECE 6350 - Robotics
3 credits

Fundamentals of robotic systems, including kinetics, kinematics, sensors, actuators, control algorithms, motion planning, and computer systems. Integration of critical design components to develop complete systems. Robotic manipulator analysis and design. Applications in manufacturing. Mobile robots, including wheeled, legged, and alternative locomotion robots.

Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.

Cross-listed as: ECE 6430.

Semester(s) Traditionally Offered: Spring

ECE 6430 - Applied CMOS Electronics
3 credits

Analysis, design, and application of digital and analog MOS integrated circuits in electronic systems. Includes device-level VLSI fabrication technology, and semiconductor device physics.

Prerequisite/Restriction: ECE 2700 and ECE 3410.

Cross-listed as: ECE 5430.

Semester(s) Traditionally Offered: Spring

ECE 6460 - VLSI Design Automation
3 credits

Introduces students to basic algorithms and methodologies used for automating the design of modern VLSI circuits. Emphasizes physical design problems, including partitioning, floorplanning, and placement and routing of VLSI circuits. Students learn to identify and formulate CAD design problems using algorithmic paradigms, such as simulated annealing, dynamic programming, and mathematical programming. Students will also gain experience in the development of VLSI-CAD tools.

Prerequisite/Restriction: ECE 5530.

Cross-listed as: ECE 5460.

Semester(s) Traditionally Offered: Fall

ECE 6470 - Digital VLSI System Design II
3 credits

Introduces the standard cell library-based design flow in VLSI, including design methodology and IP design, CMOS circuit design styles, and design technology for low power and thermal aware designs.

Prerequisite/Restriction: ECE 5460/ECE 6460 and ECE
5530 or equivalent.

Cross-listed as: ECE 5470.

Semester(s) Traditionally Offered: Spring

ECE 6490 - Radar I
3 credits

Emphasizes the system aspects of radar. After introducing the basic concepts of radar, methods for the prediction of radar performance are developed and the principles of CW, FM, MTI, and tracking radars are presented.

Prerequisite/Restriction: ECE 3640 and ECE 5800 or equivalent.

Semester(s) Traditionally Offered: Taught on demand

ECE 6560 - Spacecraft Navigation
3 credits


Prerequisite/Restriction: MAE 5310 or ECE 5310 or equivalent.

Cross-listed as: MAE 6560.

Semester(s) Traditionally Offered: Fall

ECE 6600 - Computer Networking I
3 credits

Topics include network topology, flow, capacity and queuing analysis, detailed description of the standard layers, and specific networking systems, including local area networks. Some lab work included.

Semester(s) Traditionally Offered: Fall

ECE 6620 - Introduction to Digital Image Processing
3 credits

Digital processing theory and techniques for two-dimensional signals. Topics include two-dimensional transforms, image perception, sampling, modeling, enhancement, and data compression.

Prerequisite/Restriction: ECE 5630 and ECE 6010.

Semester(s) Traditionally Offered: Spring

ECE 6650 - Optics I
3 credits

Topics include mathematics of wave motion, electromagnetic theory of light, light propagation, geometrical optics, and superposition of waves. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.

Prerequisite/Restriction: PHYS 2710, MATH 2210, MATH 2250; or ECE 3870.

Cross-listed as: ECE 4650 and PHYS 6650/PHYS 4650.

Semester(s) Traditionally Offered: Fall

ECE 6670 - Communication Systems II
3 credits

Communication over bandlimited channels, equalization, multiple antenna systems, space-time codes, spread spectrum, CDMA, OFDM.

Prerequisite/Restriction: ECE 5660, ECE 6010, ECE 6030.

Semester(s) Traditionally Offered: Fall

ECE 6680 - Optics II
3 credits

Topics include polarization, interference, diffraction, Fourier optics, coherence theory, and the quantum nature of light. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.

Prerequisite/Restriction: PHYS 4650/ECE 4650 or PHYS 6650/ECE 6650.

Cross-listed as: ECE 4680 and PHYS 6680/PHYS 4680.

Semester(s) Traditionally Offered: Spring

ECE 6800 - Electrical Engineering Colloquium
0.5 credit
Weekly seminars or colloquia. Students are normally required to enroll for two semesters. Repeatable for credit. Pass/Fail only. Semester(s) Traditionally Offered: Fall, Spring

ECE 6830 - Microwaves II 3 credits
Microwave amplifier design for noise, gain, and power match; microwave semiconductor and vacuum-tube devices; microwave oscillators; and microwave system performance characterization. Laboratory work required. Prerequisite/Restriction: ECE 5800, ECE 5810, or equivalent. Semester(s) Traditionally Offered: Fall

ECE 6930 - Special Topics in Electrical Engineering 1-6 credits
Independent or group study in electrical engineering topics, such as automated systems, optics and laser engineering, electro-acoustics, solid-state materials, devices, and intelligent systems engineering. Repeatable for credit. Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 6950 - Design Project 3 credits Repeatable for credit. Pass/Fail only. Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 6970 - Thesis Research, MS 1-6 credits Repeatable for credit. Pass/Fail only. Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 6990 - Continuing Graduate Advisement 1-6 credits Prerequisite/Restriction: Permission of Electrical and Computer Engineering Department.

Repeatable for credit. Pass/Fail only. Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 7030 - Detection and Estimation Theory 3 credits Foundations of detection theory, including Neyman-Pearson, Bayes, and Minimax Bayes detection. Maximum likelihood and Bayes estimation theory. Recursive estimation and Kalman filtering and smoothing. Expectation maximization and hidden Markov models. Prerequisite/Restriction: ECE 6010, ECE 6030. Semester(s) Traditionally Offered: Fall

ECE 7210 - Spacecraft Instrumentation 3 credits Theory, engineering, and data reduction techniques of spacecraft instrumentation for space science and spacecraft systems. Prerequisite/Restriction: ECE 6240/PHYS 6240. Cross-listed as: PHYS 7210. Semester(s) Traditionally Offered: Spring

ECE 7330 - Nonlinear and Adaptive Control 3 credits Methods of nonlinear and adaptive control system design and analysis. Includes qualitative and quantitative theories, graphical methods, frequency domain methods, sliding surface design, linear parameter estimation methods, and direct and indirect adaptive control techniques. Prerequisite/Restriction: ECE 6320/MAE 6320. Cross-listed as: MAE 7330. Semester(s) Traditionally Offered: Spring
ECE 7350 - Intelligent Control Systems
3 credits
Intelligent control strategies, including neural network, fuzzy logic, associated memory networks, and rule-based control systems.

Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.

Cross-listed as: MAE 7350.

Semester(s) Traditionally Offered: Spring

ECE 7360 - Optimal and Robust Control
3 credits
Advanced methods of control system analysis and design. Operator approaches to optimal control, including LQR, LQG, and L1 optimization techniques. Robust control theory, including QFT, H-infinity, and interval polynomial approaches.

Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.

Cross-listed as: MAE 7360.

Semester(s) Traditionally Offered: Fall

ECE 7430 - VLSI Projects
3 credits
Team-oriented design of large VLSI systems using a combination of CAD tools. Projects include mixed signal circuits incorporating custom and standard cell VLSI and analog VLSI.

Prerequisite/Restriction: ECE 5430/ECE 6430, ECE 5440, or ECE 5470/ECE 6470.

Semester(s) Traditionally Offered: Fall

ECE 7440 - Mixed-Signal VLSI Systems
3 credits
Covers specification, design, and verification of integrated systems with both analog and digital components. Particular emphasis given to data converter circuits (ADC and DAC), focusing on current research problems in the field.

ECE 7610 - Computer Networking II
4 credits
Advanced TCP/IP protocols, routing strategies, major applications. Details of Unix systems for advanced use of BSD sockets and TLI/Streams.

Prerequisite/Restriction: ECE 6600.

Semester(s) Traditionally Offered: Spring

ECE 7620 - Advanced Digital Image Processing
3 credits
Advanced digital processing theory and techniques. Topics include image restoration, image reconstruction from projections (computed tomography), and data compression.

Prerequisite/Restriction: ECE 6010, ECE 6620.

Semester(s) Traditionally Offered: Fall

ECE 7630 - Advanced Digital Signal Processing
3 credits
Advanced digital signal processing theory and methods. Topics include optimal filter design (Wiener and Kalman filters), adaptive filtering, spectral estimation, and beamforming.

Prerequisite/Restriction: ECE 5630, ECE 6010.

Semester(s) Traditionally Offered: Fall

ECE 7670 - Coding Theory and Practice in Communication
3 credits
Examination of codes employed in digital communications, including discussion of error correction codes over finite fields. Reed-Solomon, convolutional, and trellis coding. Advanced coding techniques.

Prerequisite/Restriction: ECE 6010 or ECE 6030 and ECE 5660 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall
ECE 7720 - Parallel Computer Architecture
3 credits
Covers parallelism and the design of parallel computer architectures. Explores various hardware techniques designed to support parallel execution across a range of real-world applications. Examines various components of parallel computer systems and design trade-offs in the light of underlying circuit characteristics.
Prerequisite/Restriction: ECE 5750 or equivalent or permission of instructor
Semester(s) Traditionally Offered: Fall

ECE 7750 - Distributed Control Systems
3 credits
Design and implementation issues concerning distributed control systems. Real-time processing, distributed stability methods, network techniques and standards, system development and management, smart sensors, and control actuators. Survey of current literature.
Prerequisite/Restriction: ECE 6320/MAE 6320.
Cross-listed as: MAE 7750.
Semester(s) Traditionally Offered: Spring

ECE 7850 - Antennas II
3 credits
Topics include: apertures, reflectors and lens, finite and infinite arrays, broadband antennas, Fresnel Fraunhofer regions, and Huygens' principle. Concepts for synthetic aperture radar and radar cross section.
Prerequisite/Restriction: ECE 5800 and ECE 5850.
Semester(s) Traditionally Offered: Spring

ECE 7860 - Computational Electromagnetics A
3 credits
Using Finite Difference Time Domain (FDTD) and Finite Element Method (FEM) methods to solve electromagnetic problems that includes waveguides, scattering problems, and electromagnetic wave propagation in different media.
Prerequisite/Restriction: ECE 5800
Semester(s) Traditionally Offered: Spring

ECE 7890 - Computational Electromagnetics B
3 credits
Modeling electromagnetic problems with integral equations and solve using Methods of Moments (MOM). Solving complex electromagnetic problems using Boundary Integral Finite Element Method (BI-FEM), which is a hybrid computational electromagnetic method by integration MOM and Finite Element Method (FEM).
Semester(s) Traditionally Offered: Spring

ECE 7930 - Special Topics in Electrical Engineering
1-6 credits
Independent or group study in electrical engineering topics, such as automated systems, laser engineering, electroacoustics, solid-state materials, devices, and intelligent systems engineering.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 7970 - Dissertation Research
1-12 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ECE 7990 - Continuing Graduate Advisement
1-9 credits
Prerequisite: Permission of Electrical and Computer Engineering Department.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Electronics Engineering Technology (USU Eastern)

ELET 1110 - Electronics/Electrical Mathematics (MA)
3 credits
Covers the various specialized mathematical topics unique to and necessary for the study of electronics/electricity. These topics include but are not
limited to: Systems of Units, Units of Measure, Scientific vs. Metric Prefix Notation of Numbers/Units, Functions, Complex Numbers, and Vectors, Numbering Systems, Introductory Statistics and Derivative and Integral Calculus as it applies to Electrical/Electronic Systems and Components.

Prerequisite/Restriction: MATH 0990 or ASSET/ACT test scores indicating a math level of MATH 0990 or math exam given by the program.

Campus: USU Eastern only

ELET 1120 - Computer Tools for Technology (CIL)
CIL Computer and Information Literacy
2 credits

Covers various software packages and systems used by electronic/electrical technicians and technologists as tools in the analysis and design of systems. Topics include but are not limited to: Pspice, MathCad, Structure Programming C++, Internet retrieval of manufacturers data sheets, work-processing, spreadsheets and graphing, HP48G programming techniques and programmable logic device programming software.

Prerequisite/Restriction: Completion of or concurrent registration in MATH 1060 or ELET 1110

Campus: USU Eastern only

ELET 1130 - Circuit Analysis
6 credits

Covers basic and advanced DC and AC electric circuit topics. These topics include but are not limited to: Ohm’s Law, Kirchhoff’s Voltage and Current Laws, resistance, capacitance, inductance, conductance, reactance, susceptibility, impedance, admittance, and RC and RL time constants. Analysis of series, parallel, series-parallel and bridge networks using Superposition, Thevenin’s and Maximum Power Transfer Theorems, Resonance, Mesh and Nodal Analysis; and Source and -Y Conversions.

Prerequisite/Restriction: Completion of or concurrent registration in ELET 1140 and MATH 1060 or ELET 1110

Campus: USU Eastern only

ELET 1140 - Circuit Analysis Lab
1 credit

Provides practical experience related to topics in the ELET 1130. Emphasis is placed on validation of concepts, laws, theorems and methods of analysis used in the classroom. In addition students will be required to design circuits and develop familiarity with electronic components, bread boarding and the proper use of test equipment. Laboratory reporting techniques will be developed through report writing.

Prerequisite/Restriction: Completion of or concurrent registration in ELET 1110 and ELET 1120

Campus: USU Eastern only

ELET 1150 - Digital Systems Theory
4 credits

Introduces the fundamentals of digital logic circuits and systems. Topics include but not limited to: Numbering systems and codes, logic gates operation, Boolean algebra, combinational logic and design, flip-flops, counters, timers, registers, programmable logic devices, memories, logic families, interfacing circuits, sequential logic design and an introduction to Microprocessors.

Prerequisite/Restriction: Completion of or concurrent registration in MATH 1060 or ELET 1110 and ELET 1120

Corequisite: ELET 1150

Campus: USU Eastern only

ELET 1160 - Digital Systems Lab
1 credit

Provides practical experience related to topics in ELET 1150. Emphasis is placed on validation of concepts, laws, theorems and methods of analysis used in the classroom. In addition students will be required to design combinational and sequential circuits and develop familiarity with programmable logic devices and programming, digital electronic components, data sheet interpretation and use, and the proper use of test equipment. Laboratory reporting techniques will be developed through report writing.

Prerequisite/Restriction: ELET 1110, ELET 1120 , and fulfillment of the CL1 requirement through coursework or examination (ENGL 1010)

Corequisite: ELET 1150

Campus: USU Eastern only
Campus: USU Eastern only

ELET 1170 - Electronic Devices and Circuits
6 credits

Introduces the basic physics of solid state devices, and the analysis and applications of Diodes, Bipolar Junction Transistors, Field-Effect Transistors, Thyristors and Linear Integrated circuits.

Prerequisite/Restriction: ELET 1130
Corequisite: ELET 1180

Campus: USU Eastern only

ELET 1180 - Electronic Devices and Circuits Lab
1 credit

Provides practical experience related to topics in ELET 1170. Emphasis is placed on validation of concepts, laws, theorems and methods of analysis used in the classroom. In addition students will be required to design circuits and develop familiarity with electronic components, bread boarding and the proper use of test equipment. Laboratory reporting techniques will be developed through report writing.

Prerequisite/Restriction: ELET 1120
Corequisite: ELET 1170

Campus: USU Eastern only

ELET 1200 - Motors, Controls and OLC's
4 credits

Covers the theory, operation and applications of motors, motor controls and programmable logic controllers.

Prerequisite/Restriction: ELET 1130
Corequisite: ELET 1210

Campus: USU Eastern only

ELET 1210 - Motors, Controls and PLC's Lab
1 credit

Provides practical experience related to topics in ELET 1200. Emphasis is placed on correctly wiring various motor control applications, programming and interfacing the PLC and validation of characteristics of different motor configurations. In addition students will be required to design PLC software and interface wiring to specifications. Laboratory reporting techniques will be developed through report writing.

Prerequisite/Restriction: ELET 1130 and ELET 1160
Corequisite: ELET 1200

Campus: USU Eastern only

ELET 2130 - Communication Systems
3 credits

Studies the operational characteristics of Amplitude, Frequency and Phase Modulation techniques; and their applications in today's communication systems. In addition, digital communication techniques and technologies are explored.

Prerequisite/Restriction: ELET 1170 and ELET 1180
Corequisite: ELET 2140

Campus: USU Eastern only

ELET 2140 - Communication Systems Lab
1 credit

Reinforces the concepts, techniques, and systems studied in the classroom. Particular emphasis is placed on safety, operation of test equipment, verification of operational characteristics, building and testing systems, and laboratory reporting.

Corequisite: ELET 2130

Campus: USU Eastern only

ELET 2150 - Industrial Instrumentation Systems
6 credits

Comprehensive study of the theory, physics, and devices that measure and control temperature, pressure, flow and level in the world of process control. Students are required to calculate, graph, interpolate, discuss, define, and articulate all concepts relative to these parameters and the devices used to measure them.

Prerequisite/Restriction: ELET 1130, ELET 1140, ELET
1150, ELET 1160, ELET 1170, and ELET 1180

Corequisite: ELET 2160

Campus: USU Eastern only

ELET 2160 - Industrial Instrumentation Systems Lab
1 credit

Provides the practical exposure to the devices studied in ELET 2150. Students will be expected to properly setup, calibrate, test and troubleshoot actual devices used to measure process parameters. In addition, students are required to interpret manufacturer’s specifications to perform the necessary, safe and accurate calibration of various transmitters, sensors, and systems. Students will also be required to convey technical information through written reports.

Prerequisite/Restriction: ELET 1130, ELET 1140, ELET 1150, ELET 1160, ELET 1170, and ELET 1180

Corequisite: ELET 2150

Campus: USU Eastern only

ELET 2210 - Advanced PLC’s
3 credits

Examines the advanced analog instruction set of the programmable logic controller and its uses in a variety of industrial applications. Also covers the PC software programming package used to program PLC’s, and the interfacing requirements for use in practical systems.

Prerequisite/Restriction: ELET 1200, ELET 1210, ELET 2150, and ELET 2160

Corequisite: ELET 2220

Campus: USU Eastern only

ELET 2220 - Advanced PLC’s Lab
1 credit

Reinforces the concepts, techniques, and systems studied in the classroom. Particular emphasis is placed on safety, operation of equipment, programming of PLC’s, interfacing to control systems and laboratory reporting.

Corequisite: ELET 2210

Campus: USU Eastern only

ELET 2230 - Communication Systems II
3 credits

Reinforces the concepts, techniques, and systems studied in the classroom. Particular emphasis is placed on safety, operation of equipment, programming of PLC’s, interfacing to control systems and laboratory reporting.

Prerequisite/Restriction: ELET 2130 and ELET 2340

Corequisite: ELET 2240

Campus: USU Eastern only

ELET 2240 - Communication Systems II Lab
1 credit

Reinforces the concepts, techniques, and systems studied in the classroom. Particular emphasis is placed on safety, operation of test equipment, verification of operational characteristics, building and testing systems, and laboratory reporting.

Corequisite: ELET 2230

Campus: USU Eastern only

ELET 2250 - Industrial Control Systems
6 credits

Studies industrial control systems, transducers, signal conditioning systems and techniques, sensors, servos, and their applications in the commercial and industrial environments.

Prerequisite/Restriction: ELET 1170 and ELET 1180

Corequisite: ELET 2260

Campus: USU Eastern only

ELET 2260 - Industrial Control Systems Lab
1 credit

Reinforces the concepts, techniques, and systems studied in the classroom. Particular emphasis is placed on safety, operation of test equipment, building and testing systems, and laboratory reporting.
Corequisite: ELET 2250

Campus: USU Eastern only

ELET 2330 - Telecom Mediums
3 credits

Studies the characteristics, applications, planning, implementation, and management of telecommunication mediums.

Corequisite: ELET 2340

Campus: USU Eastern only

ELET 2340 - Telecom Mediums Lab
1 credit

Gives practical application to the topics studied in ELET 2330, as well as familiarizes the student with the use of basic tools, equipment, and techniques used by Telecom professionals installing, managing, and troubleshooting these mediums.

Corequisite: ELET 2330

Campus: USU Eastern only

ELET 2510 - Telecom Systems
3 credits

Gives students an overview and history of the telecommunications industry, covering many voice telecom systems and data telecom systems. Students will be able to construct, troubleshoot, test and verify the proper operation of voice based telecommunication systems. Also safely test equipment and tools to measure operational parameters for purposes of diagnosis, repair and verification of proper operation.

Corequisite: ELET 2520

Campus: USU Eastern only

ELET 2520 - Telecom Systems Lab
1 credit

Gives practical application to the topics studied in ELET 2510, as well as familiarizes the student with the use of basic tools, equipment, and troubleshooting techniques.

Corequisite: ELET 2510

Campus: USU Eastern only

ELET 2977 - Cooperative Education
1-3 credits

Provides on-the-job experience for students majoring in electronics. The student meets with the instructor/coordinator at the beginning and periodically to determine and evaluate objectives, hours to be worked and credit agreement.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

ELET 2988 - Special Problems
1-3 credits

Individual work approved by the instructor. Time and credit to be arranged.

Campus: USU Eastern only

Elementary Education

ELED 1010 - Orientation to Elementary Education
3 credits

Level I. Students assess themselves as prospective teachers. Students will also have an opportunity to do observations in the public schools (grades K-8) and complete volunteer service in other community educational settings.

Semester(s) Traditionally Offered: Fall, Spring

ELED 3000 - Historical, Social, and Cultural Foundations of Education and School Practicum (CI)
CI Communications Intensive
4-6 credits

Introduction to the historical, social, and cultural foundations of education. Students examine the interdependence of school and society, along with the influence of that interdependence on curricular and instructional practices in early childhood, elementary, and middle-level classrooms.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
ELED 3005 - Beginning Classroom Management
1 credit

Explores essential principles of classroom motivation and management. Focuses on understanding a learning environment where children work well independently and collaboratively.

Prerequisite/Restriction: Admission to Level II of the SODIA teacher education program.

Semester(s) Traditionally Offered: Fall, Spring

ELED 3010 - Practicum Remediation Level II
2-4 credits

Students work to develop defensible teaching ideas and to translate these ideas into practical experiences in elementary classroom settings. Specific arrangements for scheduling, placement with a cooperating teacher, and course requirements are handled by professors from the program level recommending remediation and the Elementary Education Advising Office.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 3100 - Classroom Reading Instruction
3 credits

Introduction to classroom reading instruction. Initial topics include the components of reading and organizing for reading instruction. Focuses heavily on how to teach the core components of phonemic awareness, phonics, fluency, vocabulary, and comprehension as identified in the Utah Language Arts Core Curriculum (2003) and the National Reading Panel (2000). Students will teach these components in hands-on practicum experiences.

Prerequisite/Restriction: Admission to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

ELED 3800 - Practicum: USU ArtsBridge
1-2 credits

Creation and implementation of a field-based arts project within a K-6 classroom. Integrated arts curriculum design used. Arts specialization may include: fine arts, art, music, physical education, or language arts. Service-learning scholarship available by application.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ELED 4000 - Teaching Science and Practicum Level III
3 credits

Investigation and practical application of science programs, materials, and techniques of instruction for the teaching of science.

Prerequisite/Restriction: Admission to teacher education; completion of Level II and BIOL 1010 with a lab, or USU 1350; PHYS 1200 and GEO 1010 or their equivalents.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4005 - Intermediate Classroom Management
1 credit

Explores essential principles of classroom motivation and management. Focuses on facilitating a learning environment where children work well independently and collaboratively, are self-governing, and make socially appropriate decisions.

Prerequisite/Restriction: Admission to Level III of the SODIA teacher education program.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4010 - Practicum Remediation Level III
2-4 credits

Students work to develop defensible teaching ideas and to translate these ideas into practical experiences in elementary classroom settings. Specific arrangements for scheduling, placement with a cooperating teacher, and course requirements are handled by professors from the program level recommending remediation and the Elementary Education Advising Office.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 4030 - Teaching Language Arts and Practicum Level III (CI)
CI Communications Intensive
3 credits

Prerequisite/Restriction: Admission to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4040 - Assessment and Instruction for Struggling Readers (CI)
CI Communications Intensive
3 credits

Prepares undergraduate students to use data from a variety of reading assessments to identify elementary students' reading strengths and weaknesses and plan instruction. Special attention given to providing explicit differentiated reading instruction to meet the needs of students who struggle with learning to read.

Prerequisite/Restriction: Admission to teacher education, ELED 3100.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4050 - Teaching Social Studies and Practicum Level III
3 credits

Students develop necessary knowledge and skills to plan and implement an appropriate social studies program consistent with the nature of the child and our democratic society. Includes practicum work.

Prerequisite/Restriction: Admission to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4060 - Teaching Mathematics and Practicum Level III
3 credits

Relevant mathematics instruction in the elementary and middle-level curriculum; methods of instruction, evaluation, remediation, and enrichment.

Prerequisite/Restriction: Admission to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4250 - Advanced Cooperative Work Experience
1-8 credits

Designed to integrate classroom study with career-related work experience. Students must work a minimum of 50 hours per credit hours and have a cleared background check.

Prerequisite/Restriction: Pre-Eled or ELED majors

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ELED 4410 - Gifted Education in the Regular Classroom
3 credits

Introduction to characteristics of gifted learners. Exploration of strategies for challenging gifted learners in regular classroom settings.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4420 - Multiple Talent Approach to Thinking
2 credits

Explores one model for the teaching of creative and critical thinking embedded in regular curricula. Includes practical application requirements.

Cross-listed as: SCED 4420.

Semester(s) Traditionally Offered: Summer

ELED 4480 - Early Childhood Education Kindergarten Through Grade 3
3 credits

Study of early childhood (K-3) curriculum, methodology, and learning environments.

Semester(s) Traditionally Offered: Fall, Spring

ELED 4900 - Senior Project
1-5 credits

All honors students are required to submit a senior project for graduation from the Honors Program. Students work with a departmental advisor on a topic of
their choice.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ELED 4970 - Senior Thesis
1-5 credits

An in-depth paper or project culminating in a formal presentation. Required of all students for graduation from the Honors Program in Elementary Education.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5050 - Student Teaching - Kindergarten
3-6 credits

Constitutes 6 semester credit hours of student teaching in a kindergarten classroom. Student teachers need to demonstrate competency and professionalism in teaching. An understanding of developmentally appropriate curriculum is necessary.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5100 - Student Teaching - Primary (Grades 1-3)
6 credits

Constitutes 6 semester credit hours of student teaching in a primary grade (1-3). Student teachers will demonstrate competency in designing and implementing a developmentally appropriate learning environment.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5150 - Student Teaching - Elementary (Grades 4-6)
6 credits

Constitutes 6 semester credit hours of student teaching at the upper elementary grade level. Student teachers need to demonstrate competency and professionalism in teaching. Students begin their transition from university student to professional teacher.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5200 - Student Teaching - Middle Level (Grades 7-8)
6 credits

Constitutes 6 semester credits of student teaching at the middle school level. Student teachers need to demonstrate competency and professionalism in teaching. Students begin their transition from university student to professional teacher.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5250 - Advanced Classroom Management and Student Teaching Seminar
3 credits

Provides opportunities for student teachers/interns to learn about and practice skills in classroom management, curriculum development, instructional strategies, and lesson design and implementation in classroom contexts. Mentor teachers and University supervisors support context appropriate, effective teaching. Accompanies one of ELED 5050, ELED 5100, ELED 5150, or ELED 5200.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5300 - Associate Teaching - Level V
3-6 credits

Designed to allow students who have completed student teaching to extend their teaching time in a classroom. In order to better prepare for their own classroom, students continue to develop individual teaching skills and competencies.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ELED 5900 - Independent Study
0.5-2 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Elementary Mathematics

EMTH 5030 - Mathematics for Teaching K-8: Numbers and Operations
3 credits

This course, for K-8 teachers, will cover the content of
Number and Operations to develop comprehensive understanding of our number system and relate its structure to computation, arithmetic, algebra, and problem solving.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or Equivalent

Cross-listed as: TEAL 6521 and TEPD 5521

Semester(s) Traditionally Offered: Fall

EMTH 5040 - Mathematics for Teaching K-8: Rational Numbers and Proportional Reasoning
3 credits

To provide practicing teachers a deeper understanding of rational numbers, operations with rational numbers, and proportionality, and instructional strategies to facilitate the instruction of this content for elementary students.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: TEAL 6522 and TEPD 5522

Semester(s) Traditionally Offered: Spring

EMTH 5050 - Mathematics for Teaching K-8: Algebraic Reasoning
3 credits

To provide practicing teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: TEAL 6523 and TEPD 5523

Semester(s) Traditionally Offered: Fall

EMTH 5060 - Mathematics for Teaching K-8: Geometry and Measurement
3 credits

To provide practicing teachers a deeper understanding of the geometry and measurement context that exists in the state core and instructional strategies to facilitate the instruction of this content.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: TEAL 6524 and TEPD 5524

Semester(s) Traditionally Offered: Spring

EMTH 5070 - Mathematics for Teaching K-8: Data Analysis and Problem Solving
3 credits

This course will provide practicing teachers a deeper understanding of probability and data representation and analysis.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: TEAL 6525 and TEPD 5525

Semester(s) Traditionally Offered: Summer

Engineering

ENGR 1000 - Introduction to Engineering Design
2 credits

Introduction to engineering design, problem solving, and computer application skills. Oriented to college programs, academic advising, student services, professional societies, ethics, and engineering careers. A background in trigonometry is strongly recommended.

Semester(s) Traditionally Offered: Fall

ENGR 1005 - Introduction to Engineering Laboratory
1 credit

For students concurrently enrolled in ENGR 1000. Laboratory builds skills in using the HP48G/GX calculator to solve engineering problems; the use of word processors for report writing; spreadsheets to solve engineering problems; MathCAD for engineering problem solving; an introduction to Pro Engineer for engineering design; an introduction to Access for data base management; and power point for engineering presentations. Mainly hands-on, team learning is emphasized as well as team writing and presentation skills. Students should gain an appreciation for the skills needed to solve engineering problems and prepare engineering communications.
Corequisite: ENGR 1000

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall and Spring (on demand only)

ENGR 1940 - Women in Engineering Seminar
1 credit

Designed for incoming female freshman engineering students. Speakers selected from practice share their knowledge and experience about the many career options available in engineering. Discussions center on ways in which women balance their professional and personal lives. Provides information and strategies for the academic and interpersonal skills needed for women to succeed in engineering.

Semester(s) Traditionally Offered: Fall

ENGR 2010 - Engineering Mechanics Statics
3 credits

Force and position vectors; equilibrium of particles; rigid bodies; equivalent system of forces; equilibrium; free body diagrams; static analysis of trusses, frames, and machines; centroids and centers of gravity; friction; and moments of inertia.

Prerequisite/Restriction: MATH 1210, MATH 1220.

Semester(s) Traditionally Offered: Fall, Spring

ENGR 2030 - Engineering Mechanics Dynamics
3 credits

Equations of motion, kinetics of particles, kinetics of rigid bodies, work and energy, impulse and momentum, three-dimensional kinematics, and vibrations.

Prerequisite/Restriction: ENGR 2010, MATH 1210, MATH 1220.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGR 2140 - Strength of Materials
3 credits

Stress, strain, and deflection due to axial loads; moment and torsion; shear and moment diagrams; and equations of equilibrium and compatibility.

Prerequisite/Restriction: ENGR 2010.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGR 2210 - Fundamental Electronics for Engineers
3 credits

Study and application of DC and AC concepts. Includes circuit fundamentals, theorems, laws, analysis, components, equipment, and measuring devices. Laboratory will include circuit design, construction and analysis of AC/DC circuits, and the use of measuring instruments, power supplies, and signal generators. Not available to students majoring in Electrical Engineering or Computer Engineering.

Prerequisite/Restriction: MATH 1210 and MATH 1220.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGR 2450 - Numerical Methods for Engineers
3 credits

Numerical analyses applied to engineering problems, including simultaneous solutions of linear and nonlinear equations, optimization, curve fitting, numerical differentiation and integration, and numerical solutions of differential equations.

Prerequisite/Restriction: A structured programming experience in MATLAB, C, FORTRAN, EXCEL-VBA, or similar language; MATH 1220 and MATH 2250. MATH 2250 may be taken concurrently.

Semester(s) Traditionally Offered: Spring

ENGR 2930 - Special Problems
1-18 credits

Independent or group student study of engineering problems not covered in regular course offerings.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGR 2977 - Cooperative Education
1-3 credits

Provides on-the-job experience for students majoring in pre-engineering. Positions as surveyor aids, engineer aids, etc., may be available. Students meet with the instructor/coordinator and employer at the beginning
and periodically during the course to determine and evaluate objectives, hours to be worked, and credit.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

ENGR 2999 - Workshop
1-3 credits

Designed to meet the changing needs of students in Engineering.

Campus: USU Eastern only

Engineering and Technology Education

ETE 1000 - Orientation to Engineering and Technology Education
1 credit

Introduction to the technology education teaching profession, including programs, facilities, goals, and opportunities.

Semester(s) Traditionally Offered: Fall

ETE 1010 - Communications Technology
3 credits

Introduction to tools, materials, equipment, and processes used to transmit and receive messages. Major emphasis on hardware, software, communications, and the digital age.

Semester(s) Traditionally Offered: Fall

ETE 1020 - Energy, Power, Transportation Systems Control Technology
3 credits

Exploration of the concepts and processes relating to the control and automation (both hard and programmable) of technical systems in the areas of energy and power, transportation, and agricultural and related biotechnologies.

Semester(s) Traditionally Offered: Spring

ETE 1030 - Material Processing Systems
3 credits

Introduction to properties of industrial materials (metallic, polymeric, ceramic, and composite), processes used to produce standard stock and finished products, and the use of precision measuring instruments in manufacturing.

Semester(s) Traditionally Offered: Fall, Spring

ETE 1040 - Construction and Estimating
3 credits

Overview of construction industry and its practices. Reviews four major parts of construction industry, including: (1) Inputs: materials; (2) Process: design and building of structures; (3) Outputs: sites, buildings, etc.; and (4) Feedback: effects of building systems. Provides prospective technology education teachers with opportunity to study and perform activities related to the field of construction and estimating. At completion of course, students should be able to demonstrate knowledge and skills required to implement a construction technology program.

Semester(s) Traditionally Offered: Spring

ETE 1200 - Computer-Aided Drafting and Design
3 credits

Provides students with ability to accurately produce basic engineering, 2-D, and pictorial drawings using traditional and computer-aided drafting techniques. Introduction to drafting fundamentals and equipment associated with the drafting industry, including drawings, reproductions, and computer-aided techniques.

Semester(s) Traditionally Offered: Fall, Spring

ETE 1640 - Introduction to Welding
3 credits

Theory of Oxy-Acetylene Welding, Shielded-Metal Arc Welding, and Gas Metal Arc Welding.

Semester(s) Traditionally Offered: Fall

ETE 2020 - Computer-Integrated Manufacturing Systems
3 credits

Introduction to principles, operations, and applications of automated manufacturing systems, including: data acquisition and controls, CNC, CAD/CAM, and robotics.
ETE 2030 - Wood-Based Manufacturing Systems
3 credits

Focuses on the instructional strategy of establishing a manufacturing enterprise utilizing woodworking equipment and techniques. Topics include management; finance and marketing strategies; and the design of product, tooling, and production systems.

Prerequisite/Restriction: ETE 1030.

Semester(s) Traditionally Offered: Spring

ETE 2220 - Civil Engineering and Architecture
3 credits

Introduction to fields of civil engineering and architecture. Software applications used to solve problems and communicate solutions. Topics include: project planning, site planning, building design, and project documentation and presentation.

Prerequisite/Restriction: ETE 1200, MATH 1050.

Semester(s) Traditionally Offered: Fall

ETE 2240 - Analog Devices and Circuits
3 credits

Study of differential amplifiers; operational amplifiers; regulators; and generator instrumentation amplifier, multiplier, and active filters.

Prerequisite/Restriction: ETE 2310.

Corequisite: ETE 2400.

Semester(s) Traditionally Offered: Fall

ETE 2270 - Computer Engineering Drafting
2 credits

Provides engineering students with introduction to computer-aided drafting environment. Explores AutoCAD and gives background in drafting theory and applications through use of hand CAD techniques. Students gain ability to contribute in the workplace using creative thinking skills and team environments.

Prerequisite/Restriction: Enrollment limited to only students having majors within the College of Engineering.

Semester(s) Traditionally Offered: Fall, Spring

ETE 2300 - Electronic Fundamentals (QI)
QI Quantitative Intensive
4 credits

Study and application of DC and AC concepts, semiconductors, digital electronics, and microcomputers.

Prerequisite/Restriction: MATH 1050.

Semester(s) Traditionally Offered: Spring

ETE 2310 - AC/DC Circuits
2 credits

Study of AC/DC principles beyond those taught in ETE 2300. Includes network theorems, capacitance, inductance, impedance, reactance, resonance, and transformers.

Prerequisite/Restriction: ETE 2300.

Semester(s) Traditionally Offered: Spring

ETE 2320 - Electronic Drafting
2 credits

Study of electronic drafting practices. Students exposed to various areas of electronic drafting and fabrication.

Prerequisite/Restriction: ETE 2300.

Semester(s) Traditionally Offered: Fall

ETE 2360 - Digital Circuits
3 credits

Logic circuits, combinational and repeated circuits, counters, shifts registers, state tables, PLD’s, and digital computer simulations.
ETE 2370 - Computer and Microprocessor Programming
3 credits

Introduction to microprocessors and computers. Study of machine language programming, assemblies and cross assemblies, emulators, and input and output devices.

Prerequisite/Restriction: ETE 2300.

Semester(s) Traditionally Offered: Spring

ETE 2400 - Active Devices and Circuits
3 credits

Study of diodes; transistor principles, including semiconductor theory, bipolar, and field effect device characteristics; and modern thyristor devices.

Prerequisite/Restriction: ETE 2310.

Semester(s) Traditionally Offered: Fall

ETE 2660 - Principles of Engineering Education
3 credits

Prepares students to teach pre-engineering in the high school environment. Topics include the engineering design process and reliability, engineering systems, statics and dynamics, and materials.

Prerequisite/Restriction: MATH 1060 (or equivalent), ETE 1200 (or equivalent).

Semester(s) Traditionally Offered: Spring

ETE 2850 - Statics and Strength of Materials
3 credits

Engineering technology course covering resultants and equilibrium of force systems; moments of inertia; method of work; stress, strain, and deflection due to tension, compression, and torsion; and Mohr’s circle for stress and strain.

Prerequisite/Restriction: MATH 1050, MATH 1060.

Semester(s) Traditionally Offered: Fall

ETE 3040 - Engineering Systems
3 credits

Prepares students to teach engineering at the secondary level. Includes basic overview of math concepts needed to successfully teach engineering, problem solving, teamwork, design, technical communication, and engineering fundamentals. Through use of open-ended problem solving methodologies, students receive hands-on experience while teaching concepts of statics, dynamics, thermodynamics, electrical circuits, and engineering economics.

Semester(s) Traditionally Offered: Fall, Spring

ETE 3050 - Computer Systems and Networking
3 credits

Introduction to modern graphic and electronic communication systems. Emphasizes design, development, production, and dissemination of both electronic and graphic messages. Covers major concepts, including desktop publishing, and audio and video production techniques.

Semester(s) Traditionally Offered: Fall

ETE 3070 - K-8 Engineering and Technology Education
3 credits

Introduction to technology education and to science, technology, and society (STS) curricula for elementary schools, emphasizing teaching, developing, and managing technology-based activities.

Semester(s) Traditionally Offered: Fall

ETE 3200 - Methods of Teaching Engineering and Technology Education I
3 credits

Classroom laboratory practicum for design, practice, and performance of technology education demonstrations and lab activities.

Prerequisite/Restriction: ETE 1000.

Corequisite: ETE 3300.

Semester(s) Traditionally Offered: Spring
ETE 3230 - Machine and Production Drafting
3 credits
Teaches students to accurately produce both design drawings and working drawings. Explores techniques, symbols, and conventions used to represent gears, cams, jigs, and fixtures. Also includes advanced techniques of production drawing, emphasizing Geometric Dimensioning and Tolerancing.

Prerequisite/Restriction: ETE 1200, MATH 1050, or equivalent.

Semester(s) Traditionally Offered: Fall

ETE 3240 - Technical Illustration
3 credits
In-depth study of technical illustration. Includes preparation of pictorial drawings with rendering added. Explores industrial and architectural environments. Introduces rendering and animation software, emphasizing three-dimensional modeling.

Prerequisite/Restriction: ETE 1200.

Semester(s) Traditionally Offered: Spring

ETE 3270 - Advanced Computer-Aided Drafting
3 credits
Designed to enhance CADD productivity, encourage customization, and introduce students to advanced CADD techniques, including programming and introduction to parametric design.

Prerequisite/Restriction: ETE 1200.

Semester(s) Traditionally Offered: Spring

ETE 3300 - Clinical Experience I
1 credit
Field-based experiences in secondary schools. Students complete 30 hours of tutoring students and assist teachers with managerial, clerical, and other professional tasks.

Prerequisite/Restriction: ETE 1000.
Corequisite: ETE 3200.

Pass/Fail only.
Semester(s) Traditionally Offered: Spring

ETE 3380 - Microprocessor and Computer Interfacing
3 credits
Microcomputer interface applications, including digital system interface, serial and parallel interfacing, and D/A and A/D converters. P.

Prerequisite/Restriction: ETE 2240, ETE 2370.

Semester(s) Traditionally Offered: Spring

ETE 3390 - Microcontrollers
3 credits
Study of microcontrollers and applications. Includes programming and building circuits.

Prerequisite/Restriction: ETE 3380.

Semester(s) Traditionally Offered: Fall

ETE 3400 - Communication Circuits
3 credits
Introduction to radio frequency communication circuits. Includes oscillators, modulation, transmitters, receivers, transmission lines, antennas, RF propagation, digital signal processing, GPS, and spread spectrum.

Prerequisite/Restriction: ETE 2300 and ETE 2400.

Semester(s) Traditionally Offered: Spring

ETE 3440 - Science, Technology, and Modern Society (DSC)
DSC Depth Life and Physical Sciences
3 credits
Designed to challenge students from all academic majors to develop an understanding of the dynamic interaction between science, technology, and society. Explores responsibility of humans for directing the utilization of technology as a creative enterprise.

Cross-listed as: ASTE 3440.

Semester(s) Traditionally Offered: Fall, Spring
ETE 3510 - Introduction to Networking
3 credits
Study of hardware and software required to build, install, maintain, and support a local area network. Emphasizes laboratory applications.
Semester(s) Traditionally Offered: Fall

ETE 3710 - Electronics/Computer Design I
1 credit
Students select and plan a senior project. Requires written proposal, including technical description of the project and management plans.
Prerequisite/Restriction: ETE 2320 (may be taken concurrently).
Semester(s) Traditionally Offered: Fall

ETE 3740 - Facility and Equipment Maintenance
3 credits
Systems approach to facility, equipment, and tool maintenance, including principles of woodworking, machine construction, adjustment, and sharpening.

ETE 3900 - Principles and Objectives of Career and Technical Education
3 credits
Comprehensive study of philosophy and purposes of career and technical education programs and their place in the total program of modern education.

ETE 3930 - Evaluation of Career and Technical Education
2 credits
Factors for evaluation of attitudes, skills, work habits, technical information, and instrument construction.

ETE 4300 - Clinical Experience II
1 credit
Field-based experience, in which students complete 30 hours of teaching-related experiences in the classroom.
Prerequisite/Restriction: ETE 3200, ETE 3300.
Corequisite: ETE 4400.

ETE 3910 - Corrosion and Corrosion Control
2 credits
Analysis of corrosion mechanisms for ferrous metals, nonferrous metals, and nonmetallic materials, as well as the control of corrosion.
Prerequisite/Restriction: CHEM 1110 and MATH 1060.
Cross-listed as: ETE 6310.

ETE 4400 - Methods of Teaching Engineering and Technology Education II
3 credits
Techniques of teaching as applied to individual and group instruction. Students apply various methods in presenting lessons.
Prerequisite/Restriction: ETE 3200, ETE 3300.
Corequisite: ETE 4300.
Semester(s) Traditionally Offered: Fall

ETE 4440 - Technology and Society
3 credits
Challenges students to develop an understanding of the dynamic interaction between science, technology, and society. Explores the responsibility of humans to direct the utilization of technology as a creative enterprise. Students critically investigate technological innovations, issues, and impacts on society from a global perspective.
Cross-listed as: ETE 6440.

ETE 4700 - Student Teaching in Postsecondary Schools
4 credits
Planning, presenting, and evaluating instruction for students in postsecondary industrial and technical programs under the supervision of an experienced teacher.
Prerequisite/Restriction: Enrollment by permission only.

Semester(s) Traditionally Offered: Fall, Spring

ETE 4710 - Electronics/Computer Design II (CI) 
CI Communications Intensive
3 credits

Execution and completion of a team or individual project. Requires design reviews and written reports.

Prerequisite/Restriction: ETE 3710.

Semester(s) Traditionally Offered: Spring

ETE 4930 - Independent Study 
1-4 credits

Upon application, students may propose and complete work above and beyond regular coursework to support or supplement their major.

Repeatable for credit.

ETE 4940 - Related Industrial Experience 
1-12 credits

Provision for enrollment in industry schools conducted on university level. Approved by department upon application for trade competency examination and work experience in industry.

Repeatable for credit.

ETE 5040 - Manufacturing Enterprise 
3 credits

Focuses on management technology used to establish a manufacturing enterprise, engineer a product and production system, finance the operation, and market the product.

Prerequisite/Restriction: ETE 1030.

ETE 5220 - Program and Course Development (CI) 
CI Communications Intensive 
3 credits

Review of basic principles and practices of curriculum and course development used in applied technology and technology education. Emphasizes components needed to develop a curriculum guide.

Prerequisite/Restriction: ETE 3200, ETE 3300.

Semester(s) Traditionally Offered: Spring

ETE 5230 - Technical Training Innovative Program 
1-4 credits

Prepares prospective and incumbent teachers to implement and conduct contemporary programs. Includes skill development and the philosophy needed for curriculum innovation.

Repeatable for credit.

ETE 5240 - Principles of Technology 
2-3 credits

Introduction to applied technology principles forming the basis for today’s society.

ETE 5500 - Student Teaching Seminar 
2 credits

Focuses on observations and problems arising during student teaching. Includes review of teaching plans, procedures, adaptive classroom practices, and evaluation.

Corequisite: ETE 5630.

ETE 5500 - Student Teaching Seminar 
2 credits

Focuses on observations and problems arising during student teaching. Includes review of teaching plans, procedures, adaptive classroom practices, and evaluation.

Corequisite: ETE 5630.

Pass/Fail only.

ETE 5630 - Student Teaching in Secondary Schools 
10 credits

Candidates assigned to cooperating teachers in public secondary schools within their major and minor subjects. Students have professional responsibilities with teaching.

Corequisite: ETE 5500.

Pass/Fail only.

ETE 5800 - Seminar - Technology Education 
1-3 credits

Provides opportunity for students to participate in
variety of enriching experiences, such as guest speakers, field trips, demonstrations, and conferences. Repeatable for credit.

ETE 5900 - Workshop in Engineering and Technology Education
1-4 credits

Special workshops for education or industry. May be repeated providing content varies. Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ETE 5910 - Special Problems in Engineering and Technology Education
1-4 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ETE 5920 - Related Technical Training
1-12 credits

Repeatable for credit.

ETE 6090 - Program Design
3 credits

Study of contemporary program design and development in technology and industrial education. Reviews complete curriculum developmental process.

Semester(s) Traditionally Offered: Summer

ETE 6100 - Contemporay Issues
3 credits

Study of present and future foundational professional developments in technology and industrial education. Students identify and investigate contemporary trends and issues affecting and facing technology and industrial education.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6150 - Evaluation and Assessment
3 credits

Study of various methods used to measure and evaluate student achievement, including cognitive, affective, and psychomatic. Reviews principles of learning and teaching, and of evaluation of instruction.

Semester(s) Traditionally Offered: Summer

ETE 6200 - Composite Manufacturing Processes and Repair
3 credits

Composite manufacturing processes, composite materials survey, tooling design and fabrication, autoclave processes, vacuum bag techniques, filament winding processes, equipment requirements, materials cutting and storage, and composite materials testing.

Semester(s) Traditionally Offered: Spring

ETE 6250 - Internship
1-6 credits

Advanced instruction through supervised work experience in teaching, supervising, or administering educational or industrial program.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6310 - Corrosion and Corrosion Control
2 credits

Analysis of corrosion mechanisms for ferrous metals, nonferrous metals, and nonmetallic materials, as well as the control of corrosion.

Prerequisite/Restriction: CHEM 1110 and MATH 1060.

Cross-listed as: ETE 4310.

ETE 6440 - Technology and Society
3 credits

Challenges students to develop an understanding of the dynamic interaction between science, technology, and society. Explores the responsibility of humans to direct the utilization of technology as a creative enterprise. Students critically investigate technological innovations, issues, and impacts on society from a global perspective.

Cross-listed as: ETE 4440.

Semester(s) Traditionally Offered: Fall, Spring
ETE 6450 - Administration and Organization
3 credits
Administrative and supervisory techniques for successful operation of technology education and applied technology education programs.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6520 - Explorations of Industry
3 credits
Study of contemporary industry, business, and service through a series of site visits. Includes various management and finance methods and techniques.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6750 - Research Methods and Design
3 credits
Introduction to practical research planning and design. Guides students from proposal selection to completed proposal to final research report.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6800 - Seminar
1-2 credits
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6900 - Readings and Conference
1-3 credits
Advanced individualized study on selected topics in technology and industrial education. Scheduled consultation with faculty member.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6910 - Experimental Laboratory
3 credits
Introduction to elements of a research report through selection and development of experimental study utilizing tools, equipment, materials, and processes for improving programs and teaching techniques.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6930 - Independent Study
1-6 credits
Advanced educational experience through individual investigation.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6960 - Master's Project
3-6 credits
Development of creative project emphasizing a thoroughly developed plan of action. Includes proposal, project paper, and final presentation.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6970 - Thesis Research
1-9 credits
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 6990 - Continuing Graduate Advisement
1-3 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7010 - The Role of Cognition in Engineering and Technology Education
3 credits
Study of cognitive science and research relating to engineering and technology education.
Semester(s) Traditionally Offered: Fall, Spring

ETE 7020 - Design Thinking in Engineering and Technology
3 credits
Engineering design as applied to technology education.
Semester(s) Traditionally Offered: Fall, Spring

ETE 7030 - Engineering Design and Analysis for Technology Education
3 credits
Engineering design methodology for technology education teacher educators. Focuses on science principles and predictive mathematics comprising the
engineering sciences needed to solve problems in a
design framework that is analytical, predictive, and
repeatable.

Semester(s) Traditionally Offered: Fall, Spring

ETE 7040 - Dynamic and Network Engineering Processes
for Technology Education
3 credits

Examines dynamic and network processes in engineering
through the use of simulation software. Students use
these techniques to develop standards-based engineering
curricular modules for use in grades 6 through 12.

Semester(s) Traditionally Offered: Spring

ETE 7230 - Foundations of Engineering and Technology
Education
3 credits

Investigation of the history, philosophy, and foundations
of engineering and technology education within social,
political, and economic contexts. Analysis of important
works of historical and modern philosophers, educators,
and leaders, to help students gain an understanding of
the status of engineering and technology education.

Semester(s) Traditionally Offered: Fall, Spring

ETE 7400 - Occupational Analysis and Curriculum
Development
3 credits

Students learn techniques for conducting an occupational
analysis (both job and task analysis) and for developing
performance-based or competency-based curriculum.
Explores industrial and educational applications for this
style of curriculum development.

Semester(s) Traditionally Offered: Fall, Spring

ETE 7460 - Finance and Grant Writing
3 credits

Procedures in financial administration of industrial
education monies. Budget preparation, budget operation
and control, and school accounting. In-depth review of
steps and techniques needed for grant writing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7500 - Internationalizing Institutions of Higher
Education
3 credits

Explores the need and methodology of internationalizing
higher education institutions, with the purpose of
understanding the global society and delivering
education worldwide.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7600 - Academic Issues and Politics in Higher
Education
3 credits

Study of higher education in Utah, the social political
impacts, and the role of faculty members in higher
education institutions.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7810 - Research Seminar
1 credit

Identification of research problems, consideration of
research strategies and methods, application of research
and statistical concepts in departmental focus, and
interaction with faculty.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7900 - Independent Study
1-3 credits

Individually directed reading and conference.

Prerequisite/Restriction: Approval of department.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7970 - Dissertation Research
1-15 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ETE 7990 - Continuing Graduate Advisement
1-3 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Engineering Drafting and Design Technology (USU Eastern)

EDDT 1010 - Technical Drafting
5 credits

Beginning course stressing the fundamentals of mechanical drafting as related to industry. Students will gain a knowledge of drafting instruments and their use, lettering, geometric construction, orthographic projection, sectional views, auxiliary views, and dimensioning standards. Additional procedures in geometric dimensioning, developments, threads and fasteners will be studied. Applications will include working drawings and assembly drawings.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

EDDT 1040 - CAD Level I: Intro to CAD (CIL)
CIL Computer and Information Literacy
3 credits

Covers the fundamentals of computer-aided-drafting (AutoCAD). Students will train using the basic operating features, menus, commands, file management, drawing set up, and plotting. Applications will include, orthographic projection, sections, dimensioning techniques, tracing, pictorial drawing and coordinate features will be included.

Prerequisite/Restriction: EDDT 1010 or basic drafting knowledge

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

EDDT 1070 - CAD Level II: Intro to 3-D
3 credits

Continuation of EDDT 1040 with additional emphasis on drawing productivity. Students will utilize the advance features of AutoCAD to produce industry quality drawings. Students will use the customizing commands of AutoCAD to create custom symbols, line types, and hatch patterns, 3D modeling capabilities, third party software applications, inserting CAD drawings into work processing programs, scanning, and advance plotting techniques. Students should be prepared to spend additional time outside of class in the CAD Lab to complete their assignments.

Prerequisite/Restriction: EDDT 1040

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

EDDT 1100 - Residential Architectural Drafting
3 credits

Designed to teach AutoCAD techniques utilized in architectural drafting. The student will apply architectural drafting standards in the preparation of a complete set of house plans. Students will learn architectural terminology and nomenclature as used in the building industry. Applications of advance AutoCAD features and third party software will be employed in the course. Students should have CAD skills and be prepared to spend extra time in the CAD lab to complete their assignments.

Prerequisite/Restriction: EDDT 1040

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

EDDT 1500 - Introduction to Geographic Information Systems
3 credits

Introduction for the Geographic Information System field. Students planning careers in Engineering, Drafting, Geology, Natural Resources, and Law Enforcement will find this elective class useful either for employment or transfer support. The course covers general GIS applications and teaches the use of software for research and problem solving. Class requires a computer lab experience. In class discussion and lecture methods are used to achieve course goals and objectives. This course is taught on an as needed basis. MATH 1050 is recommended.

Campus: USU Eastern only

EDDT 2100 - Commercial Architectural Drafting
3 credits

Designed to teach CAD techniques utilized in commercial architectural drafting. The student will apply architectural drafting standards in the layout, detailing,
and dimensioning, of commercial small building plans. Students will learn the architectural terminology and nomenclature associated with the building industry. Applications of advanced AutoCAD features and third party software will be employed in the course. Students should have CAD skills and be prepared to spend extra time in the CAD lab to complete their assignments. Completers should have sufficient entry level skills to work in an architectural design office.

Prerequisite/Restriction: EDDT 1100

Campus: USU Eastern only

EDDT 2500 - Introduction to Global Positioning Systems
3 credits

An overview to Global Positioning Systems (GPS) and emphasizes hands-on Trimble Resource and Mapping grade GPS experience. Covers general GPS technology, applications, research, field data collection techniques, differential correction and export to other computer softwares such as CAD and GIS. Class requires a computer lab experience. In-class discussion and lecture methods are interspersed with computer applications to achieve course goals and objectives. Course will be useful for teaching students methods to input data into GIS and CAD systems. It is useful preparation for careers in health care, business, agriculture, planning, law enforcement, transportation, engineering, surveying and natural resource development and conservation. GEOG 1010 or GEO 1110 or GEO 1115 are suggested prerequisites.

Prerequisite/Restriction: EDDT 1500 or GEOG 1800 or a basic CAD course

Campus: USU Eastern only

EDDT 2620 - 3-D Modeling Advanced
3 credits

Descriptive geometry and orthographic projection are the graphic tools of engineering. Students will learn to use the descriptive geometry to not only determine true size and shape, but also intersections, true distances, true distances of lines space, and exact piercing points. Students will solve practical problems applying the principles of descriptive geometry.

Prerequisite/Restriction: EDDT 1010

EDDT 2650 - Mechanical Blueprint Reading
2 credits

Support course to other departments. Designed to assist the technician in the interpretation of blueprints as they apply to industrial technology. Includes the introduction of technical drawing theory and practices. Students will be exposed to a wide variety of technical drawings in order to gain information about simple or complex parts, assemblies, systems, standards, and practices used in the world of manufacturing for precision and quality control.

Prerequisite/Restriction: EDDT 1500 or GEOG 1800 or a basic CAD course

Campus: USU Eastern only

EDDT 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in engineering drafting and design technology areas. Students meet with the instructor/Coordinator periodically to determine and evaluate learning objectives, hours to be worked, and credit.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

EDDT 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

English

ENGL 0010 - Writing Tutorial
3 credits

Provides additional instruction for students whose score on the ACT is 16 or less, or who are advised into the course on the basis of writing diagnosis given the first day of class in ENGL 1010. Remedial class not carrying USU or transfer credit.

Remedial
Semester(s) Traditionally Offered: Fall, Spring, Summer
ENGL 0900 - Developmental Language Arts
3 credits

Intensive practice in reading, writing, grammar, and analytical skills as preparation for composition courses.

Remedial
Campus: USU Eastern only

ENGL 0950 - English Skills Lab
1-3 credits

Laboratory course in which the students will perform activities and assignments to help them understand and reinforce the material taught during their English or ESOL courses. Will focus on listening, speaking, reading, vocabulary, spelling, grammar, sentence, paragraph, and essay skills. Assignments will be individually tailored to meet the needs of each student.

Remedial
Campus: USU Eastern only

ENGL 0960 - Intermediate Integrated English Language Skills
5 credits

Integrated language skills course for English Speakers of Other Languages at the intermediate level. Concentrates on reading comprehension and analysis, on writing for different purposes and audiences, on syntax and mechanics of English grammar, and on building an academic vocabulary base. Active listening and speaking activities are also part of the course to help students prepare for participation in the college classroom.

Remedial
Campus: USU Eastern only

ENGL 0970 - Advanced Integrated English Language Skills
5 credits

Integrated language skills course for English Speakers of Other Languages at the advanced level. It concentrates on reading comprehension and analysis, on writing for different purposes and audiences, on syntax and mechanics of English grammar, and on building an academic vocabulary base. Active listening and speaking activities are also part of the course to help students prepare for participation in the college classroom.

Remedial
Campus: USU Eastern only

ENGL 0980 - College Preparation: Reading and Vocabulary
5 credits

Basic language skills class that concentrates on reading comprehension and analysis, vocabulary development, and writing fluency in response to various genres. In addition to these skills, the course is designed to help students develop the analytical thinking appropriate for success at the college level.

Remedial
Campus: USU Eastern only

ENGL 0985 - College Preparation: Writing and Grammar
5 credits

Basic language skills class that concentrates on reading comprehension and analysis, vocabulary development, and writing fluency in response to various genres. In addition to these skills, the course is designed to help students develop the analytical thinking appropriate for success at the college level.

Remedial
Campus: USU Eastern only

ENGL 0990 - Developmental Composition
3 credits

Emphasizes basic composition skills: generating ideas, developing unified, coherent paragraphs, writing and revising short essays, and editing for clarity and grammatical correctness. Includes reading and analysis of short essays. Instructors use a variety of instructional methods including group work, lecture, and tests. Students demonstrate their competence primarily by writing and revising short papers.

Remedial
Campus: USU Eastern only

ENGL 1010 - Introduction to Writing: Academic Prose (CL1)
3 credits

Students learn skills and strategies for becoming successful academic readers, writers, and speakers: how
to read and write critically, generate and develop ideas, work through multiple drafts, collaborate with peers, present ideas orally, and use computers as writing tools.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 1020 - Individualized Writing Instruction
1-3 credits

For students in Distance Education international programs who need further practice in specific areas of writing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 1050 - Academic Reading
3 credits

Designed to provide general strategies for improving reading skills for academic course work. Includes critical reading, comprehension, analysis, synthesis and evaluation. Also encompasses skills in taking notes, preparing for exams, and interpreting visual aids.

Cross-listed as: ESOL 1050

Campus: USU Eastern only

ENGL 1055 - Vocabulary
2 credits

Emphasis is on academic vocabulary. Develops strategies for increasing vocabulary using context clues and word parts (root words, prefixes and suffixes). Class will prepare students for academic course work and standardized test taking.

Cross-listed as: ESOL 1055

Campus: USU Eastern only

ENGL 1070 - Introduction to Native American Literature and Philosophy (BHU)
BHU Breadth Humanities
3 credits

General education class intended for all students. Introduces general principles of Indian world view. The realm of mythology, legends and tales; trickster tales and religious drama; songs, poetry and figurative language; autobiography; contemporary Indian literature; and cross-cultural literary criticism.

Campus: USU Eastern only

ENGL 1110 - English Orientation
1 credit

Introduction to English as a profession. Reviews career opportunities for English majors.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 1120 - Elements of Grammar
3 credits

Introduction to the study of the English sentence. Discussion of punctuation and usage to facilitate editing, as well as clarity and precision in writing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 1600 - American Cultures in Film
3 credits

Introduction to major ethnic groups in America and their treatment in recent feature films.

Cross-listed as: HIST 1600.

Semester(s) Traditionally Offered: Fall

ENGL 2010 - Intermediate Writing: Research Writing in a Persuasive Mode (CL2)
CL2 Communications Literacy
3 credits

Writing of reasoned academic argument supported with appropriately documented sources. Focuses on library and Internet research, evaluating and citing sources, oral presentations based on research, and collaboration.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL1 requirement through coursework (C- or better in ENGL 1010) or examination.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 2030 - Great Books and Ideas
3 credits

Campus: USU Eastern only
English

ENGL 2040 - Introduction to Western American Literature (BHU)
BHU Breadth Humanities
3 credits

Offers students a comprehensive introduction to the literature of the American West including both historical and contemporary works of fiction, non-fiction, and poetry. Course material - ranging from literature that chronicles early explorations to Native American storytelling to the reality and myth of Hollywood’s vision of the “western” - will introduce students to the diversity and complexity that makes up Western American Literature. Instructional methods will include lecture, discussion, student presentations, and group projects.

Prerequisite/Restriction: Fulfillment of CL1 requirement through coursework or examination (ENGL 1010) recommended

Campus: USU Eastern only

ENGL 2050 - Literature by Women (BHU)
BHU Breadth Humanities
3 credits

Will focus on literature by primarily British and American women within the historical and cultural framework of their times. Lectures, videos, and class discussion, as well as some group work, will take place. Quizzes, examinations and at least one paper are required.

Prerequisite/Restriction: Fulfillment of CL1 requirement through coursework or examination (ENGL 1010) recommended

Campus: USU Eastern only

ENGL 2060 - Literature and Diversity (BHU)
BHU Breadth Humanities
3 credits

Open to all students. Gives students the opportunity to read literature representative of the diversity in America and world cultures, focusing on groups not usually covered in most traditional literature courses.

Campus: USU Eastern only

ENGL 2120 - Literary Magazine
1 credit

Course in which students work on the College's literary magazine, The Nighthawk Review. Student editors who enroll in the course will learn how to put together a manuscript with poems, stories, essays, and artwork provided by students. Annual journal shows off the excellent writing done by the CEU students who submit their work for publication.

Campus: USU Eastern only

ENGL 2130 - Literary Magazine
1 credit

Course in which students work on the College's literary magazine, The Nighthawk Review. Student editors who enroll in the course will learn how to put together a manuscript with poems, stories, essays, and artwork provided by students. Annual journal shows off the excellent writing done by the CEU students who submit their work for publication.

Campus: USU Eastern only

ENGL 2200 - Understanding Literature (BHU)
BHU Breadth Humanities
3 credits

Introduction to fiction, drama, and poetry of different periods and cultures.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 2210 - Introduction to Folklore (BHU)
BHU Breadth Humanities
3 credits

Introduction to major genres of folklore (folk narrative, custom, folk music and song, vernacular architecture and arts), folk groups (regional, ethnic, occupational, familial), and basic folklore research methods (collecting and archiving).

Cross-listed as: ANTH 2210 and HIST 2210.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 2220 - Introduction to Fiction (BHU)
BHU Breadth Humanities
3 credits

Readings in fiction, including novels, novellas, and stories. The course will examine elements of the genre such as character, plot, theme, and style. Various critical approaches and contexts will be discussed, as well as the historical development of the form.

Campus: USU Eastern only

ENGL 2240 - Introduction to Poetry (BHU)
BHU Breadth Humanities
3 credits

Emphasizes analytical reading: considering a poem's formal elements such as rhythm, diction, imagery, form and sound. Assuming that such understanding. Assists students in forming their own critical approaches and responses to poems by exploring a variety of major critical theories. Instructors employ a lecture and discussion format. Students demonstrate their understanding of course material by writing papers and/or essay examinations.

Prerequisite/Restriction: Fulfillment of CL1 requirement through coursework or examination (ENGL 1010) is highly recommended

Campus: USU Eastern only

ENGL 2250 - Creative Writing
3 credits

Techniques for writing fiction and poetry through reading contemporary works and work shopping student writing.

Campus: USU Eastern only

ENGL 2251 - Poetry Writing
3 credits

Techniques for writing poetry through reading contemporary works and work shopping student writing.

Campus: USU Eastern only

ENGL 2300 - Introduction to Shakespeare (BHU)
BHU Breadth Humanities
3 credits

Introduction to comedies, histories, tragedies, and nondramatic poetry for nonmajors.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 2330 - Introduction to Children’s Literature
3 credits

Review of the development of children's literature, past to present: types and characteristics of literature written for children; major award winners; practical uses within the classroom.

Campus: USU Eastern only

ENGL 2340 - Navajo Literature and Philosophy
3 credits

Survey course that examines Navajo literature in its many traditional and contemporary forms: mythology, tales, autobiography, fiction, and poetry. Lecture/discussion/reading/are the central activities of the course.

Campus: USU Eastern only

ENGL 2510 - Survey of American Literature I
3 credits

Materials covered in this course provide an overview of the major authors, works, and trends in American literature from the earliest narratives of encounter, through the colonial and national periods, to the end of the Civil War.

Campus: USU Eastern only

ENGL 2520 - Survey of American Literature II
3 credits

Materials covered in this course provide an overview of the major authors, works and trends in American literature from the Civil War period to the present.

Campus: USU Eastern only

ENGL 2600 - Literary Analysis
3 credits

Writing-intensive course in literary analysis and research. Introduces English majors to techniques and
problems of critical interpretation.

Prerequisite/Restriction: Enrollment limited to English majors only.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 2610 - Survey of British Literature I
3 credits

Selected readings in British literature from Beowulf to the 18th century. Writers covered include Chaucer, Spenser, Jonson, Shakespeare, Milton, Swift and Pope. British literature I is a standard English major course at the sophomore level, as preparation for upper division, more specific, more intensive courses.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Once every two years

ENGL 2620 - Survey of British Literature II
3 credits

Selected readings in British literature from the early 19th century to the present. Writers covered include Blake, Wordsworth, Keats, Browning, Conrad, Joyce, Woolf and Orwell. British literature II is a standard English major course at the sophomore level, as preparation for upper division, more specific, more intensive courses.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Once every two years

ENGL 2630 - Survey of American Culture (BHU)
BHU Breadth Humanities
3 credits

Introduces students to American Studies methodology through a broad selection of American literary, historical, artistic, and cultural works, allowing them to examine the roots of American culture. Focuses on interdisciplinary research.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 2720 - Survey of American Folklore
3 credits

Principal ethnic, regional, and occupational folk groups in America. Relations between folklore and American history, literature, and society. Key genres in American folklore (narrative, art, song, etc.) and their role in American culture.

Cross-listed as: ANTH 2720 and HIST 2720.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in literature. The student meets with the instructor/ coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, and credit agreements.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

ENGL 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit will be arranged.

Campus: USU Eastern only

ENGL 3020 - Perspectives in Linguistics (DHA)
DHA Depth Humanities and Creative Arts
3 credits

In-depth study of linguistics for nonmajors. Topics vary according to faculty expertise.

Semester(s) Traditionally Offered: Spring

ENGL 3030 - Perspectives in Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits

In-depth study of literature for nonmajors. Topics vary according to faculty expertise.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 3040 - Perspectives in Writing and Rhetoric (DHA)
DHA Depth Humanities and Creative Arts
3 credits

In-depth study of rhetoric and writing for nonmajors. Topics vary according to faculty expertise.
Semester(s) Traditionally Offered: Fall
ENGL 3050 - Masterpieces of World Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits
In-depth study of masterpieces of world literature from the earliest times to the present. For nonmajors.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3060 - British and Commonwealth Cultures (DHA)
DHA Depth Humanities and Creative Arts
3 credits
In-depth study of literatures and cultures from the British Isles and the Commonwealth nations. Topics vary according to faculty expertise. Taught alternate years.

Semester(s) Traditionally Offered: Alternate years
ENGL 3070 - Perspectives in Folklore (DHA)
DHA Depth Humanities and Creative Arts
3 credits
In-depth study of folklore for nonmajors. Topics vary according to faculty expertise.
Cross-listed as: HIST 3070.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Summer
ENGL 3080 - Introduction to Technical Communication (CI)
CI Communications Intensive
3 credits
Introduces students to a variety of technical documents and improves their written and oral communication skills. Available to nonmajors as a technical communication service course.
Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3300 - Period Studies in American Literature
3 credits
Exploration of single period or movement in literary history of the United States, or a comparative study of a topic during various periods. Periods and topics will vary.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3305 - Medieval Literary History
3 credits
Covers a variety of literary genres and movements from the medieval era

ENGL 3310 - Period Studies in British Literature
3 credits
Exploration of single period or movement in British literary history, or a comparative study of a topic during various periods. Periods and topics will vary.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3315 - Early Modern British Literary History
3 credits
Covers a variety of literary genres and movements from the early modern period (roughly the sixteenth and seventeenth centuries) in the British Isles

ENGL 3320 - Period Studies in World Literature
3 credits
Exploration of single period or movement in literary history outside the United States and Great Britain, or a comparative study of a topic during various periods. Periods and topics will vary.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3325 - Eighteenth-Century British Literary History
3 credits
Covers a variety of literary genres and movements from the eighteenth century in the British Isles

ENGL 3330 - Literary Theory
3 credits
Covers a range of different critical approaches to literature, helping students to analyze literature from a
variety of theoretical perspectives and preparing them for upper-division English major coursework.

Prerequisite/Restriction: ENGL 2600.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 3335 - Nineteenth-Century British Literary History
3 credits

Covers a variety of literary genres and movements from the nineteenth century in the British Isles

ENGL 3345 - Literary History of the British Isles Since 1900
3 credits

Covers a variety of literary genres and movements from the British Isles since 1900

ENGL 3355 - Literary History of the Early Americas
3 credits

Covers a variety of literary genres and movements from the Americas before 1800

ENGL 3365 - Nineteenth-Century American Literary History
3 credits

Covers a variety of literary genres and movements from the nineteenth century in the Americas

ENGL 3375 - Literary History of the Americas Since 1900
3 credits

Covers a variety of literary genres and movements from the Americas since 1900

ENGL 3385 - World Literary History Pre-1900
3 credits

Covers a range of pre-twentieth century texts in a variety of genres from outside the United States and the British Isles. Specific subject matter varies according to faculty expertise.

ENGL 3395 - World Literary History Since 1900
3 credits

Covers a range of texts in a variety of genres written since 1900 from outside the United States and the British Isles. Specific subject matter varies according to faculty expertise.

ENGL 3400 - Professional Writing (CI)
CI Communications Intensive
3 credits

Introduces students to workplace writing as a profession, emphasizing transition from writing for academic audiences to writing for readers of workplace documents. Students learn to design and write professional documents for science, industry, business, and/or government, including print portfolios and other job search materials.

Prerequisite/Restriction: Enrollment limited to English majors only.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 3410 - Professional Writing Technology
3 credits

Introduces students to technologies of professional writing. Surveys software used in the Professional and Technical Writing emphasis curriculum. Students learn to design and implement electronic portfolios documenting their work in the program.

Prerequisite/Restriction: Enrollment limited to English majors only.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 3420 - Fiction Writing
3 credits

Covers basic elements of writing fiction: form, structure, plot, theme, characterization, dialogue, point of view, and imagery.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 3430 - Poetry Writing
3 credits

Covers basic elements of writing poetry: language, detail, voice, tone, literal and figurative imagery, rhythm, open and closed form, structure, and theme.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 3440 - Creative Nonfiction Writing
3 credits
Focuses on the essay as creative nonfiction, emphasizing persona, audience, purpose, tone, and style. Students study difference between fiction and nonfiction. Goal is to write publishable nonfiction.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 3450 - Methods and Research in Professional and Technical Communication
3 credits
Teaches students to conduct research using methods employed by professional and technical communicators in the workplace. Students learn to work with Subject Matter Experts, gather data in organizational contexts, and design user-centered documents.
Semester(s) Traditionally Offered: Spring

ENGL 3460 - Modern Rhetorical Theory
3 credits
Teaches students to analyze rhetoric as it is enacted in a variety of texts and contexts. Students learn to define and understand rhetorical situations and to evaluate rhetorical strategies chosen by other writers.
Semester(s) Traditionally Offered: Fall

ENGL 3510 - Young Adult Literature
3 credits
Study of a variety of genres written specifically for adolescent audience. Intended for those interested in teaching secondary school English.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 3520 - Multicultural American Literature
3 credits
Introduction to study of diverse literatures of the United States, including Native American, Asian American, Hispanic/Latino, and African American.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 3530 - Children's Literature
3 credits
Study of aesthetic merit of poetry and prose available for children, ages 1-12. Intended for those interested in teaching or writing for children.
Semester(s) Traditionally Offered: Spring

ENGL 3620 - Native American Studies
3 credits
Multidisciplinary introduction to study of Native Americans, emphasizing folklore, history, anthropology, literature, traditions, and contemporary issues such as the environment.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 3700 - Regional Folklore (CI)
CI Communications Intensive
3 credits
Study of folklore and folklife as they relate to regional cultures.
Cross-listed as: HIST 3700.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 3710 - Folklore Colloquium (CI)
CI Communications Intensive
3 credits
Issues, problems, and methodologies in folklore study. Focus and instructor variable.
Cross-listed as: HIST 3710 and RELS 3710. Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ENGL 4200 - Linguistic Structures
3 credits
Introduction to linguistic science: phonetics, phonology, morphology, and syntax, especially as relating to English. Exposure to other aspects of linguistic analysis, including language origins and linguistic diversity.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 4210 - History of the English Language
3 credits
Introduction to linguistic history of English, beginning with its Indo-European roots and continuing through Old English and Middle English to Modern English. Covers sociolinguistic aspects of English use, as well as strict grammatical history.

Semester(s) Traditionally Offered: Spring

ENGL 4220 - Ethnic Literacy
3 credits

Examines the diversity of literacy skills in American ethnic groups and explores appropriate teaching methods. Topics include effects of socio-economic status, child-rearing practices, first and second language acquisition, American dialects, etc.

Semester(s) Traditionally Offered: Spring

ENGL 4230 - Language and Society
3 credits

Covers sciences of sociolinguistics and anthropological linguistics. Introduces concepts dealing with relationship of language to society and culture, and interaction of language with society and culture.

Semester(s) Traditionally Offered: Fall

ENGL 4250 - Playwriting
3 credits

Study of dramatic theory and sample plays, combined with practice in writing short plays. Students must write a minimum of three plays.

Prerequisite/Restriction: THEA 1713.

Cross-listed as: THEA 4250.

Semester(s) Traditionally Offered: Fall

ENGL 4300 - Shakespeare
3 credits

Selected works of William Shakespeare, with attention to biographical and cultural contexts.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4310 - American Writers
3 credits

Selected works of either a single author or a closely related group of authors based in the United States, with attention to biographical and cultural contexts.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4320 - British Writers
3 credits

Selected works of either a single author or a closely related group of authors based in Great Britain, with attention to biographical and cultural contexts.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4330 - World Writers
3 credits

Selected works of either a single author or a closely related group of authors based outside the United States, with attention to biographical and cultural contexts.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

ENGL 4340 - Studies in Prose
3 credits

Analysis of the genre of prose fiction and/or prose nonfiction, emphasizing nature and evolution of specific forms.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ENGL 4350 - Studies in Poetry
3 credits

Analysis of the genre of poetry, emphasizing nature and evolution of specific forms.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

ENGL 4360 - Studies in Drama/Film
3 credits
Analysis of dramatic and cinematic genres, emphasizing nature and evolution of specific forms.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring
ENGL 4370 - Studies in Nonfiction Prose
3 credits
Analysis of the genre of nonfiction prose, emphasizing nature and evolution of specific forms.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall
ENGL 4400 - Professional Editing (CI)
CI Communications Intensive
3 credits
Editing of technical and scientific documents; working with deadlines, different levels of editing and editing marks; working with groups of editors and clients; and revising document design.
Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.
Semester(s) Traditionally Offered: Fall, Spring
ENGL 4410 - Document Design and Graphics
3 credits
Explores elements of page layout, graphic design, type fonts, and design of documents to suit client's needs for print (F) or digital (Sp) media.
Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
ENGL 4420 - Advanced Fiction Writing (CI)
CI Communications Intensive
3 credits
Offers advanced study in art and skill of writing publishable fiction. Relies on workshop method.
Prerequisite/Restriction: ENGL 3420 or equivalent.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring
ENGL 4430 - Advanced Poetry Writing (CI)
CI Communications Intensive
3 credits
Provides course for undergraduate students desiring to write publishable poetry. Relies on workshop method.
Prerequisite/Restriction: ENGL 3430 or equivalent.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring
ENGL 4440 - Advanced Nonfiction Writing (CI)
CI Communications Intensive
3 credits
Offers advanced study in the art and skill of writing publishable literary or creative nonfiction.
Prerequisite/Restriction: ENGL 3440.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
ENGL 4500 - Teaching Writing (CI)
CI Communications Intensive
3 credits
Prepares students to teach writing at secondary level. Teaches appropriate pedagogical techniques for teaching writing for a variety of purposes and contexts to diverse students. Techniques taught include designing effective writing assignments, responding constructively to student writing, assessing student writing, and incorporating technology into writing courses.
Semester(s) Traditionally Offered: Fall, Spring
ENGL 4510 - Teaching Literature (CI)
CI Communications Intensive
3 credits
Prepares students to teach literature through a variety of texts. Explores multiple pedagogical strategies for teaching diverse literary traditions to students of various backgrounds and developmental levels.
Semester(s) Traditionally Offered: Fall, Spring
ENGL 4610 - Western American Literature
3 credits

Examines major themes and important writers (both “popular” and “literary”) in western regional writing. Investigation of significance of environment, history, gender, and ethnicity in a variety of genres. Appropriate for American Studies majors and minors.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4620 - Advanced Seminar in American Studies (CI)
CI Communications Intensive
3 credits

Practical introduction to theories and methods of American Studies, utilizing interdisciplinary research around a central theme, subject, or text(s). Strongly recommended for American Studies majors and American Studies minors. Open to students who have taken three courses in literature and/or history.

Cross-listed as: HIST 4620.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4630 - American Nature Writers
3 credits

Interdisciplinary study of historical, social, literary, and environmental contexts of nature writing. Examines key authors, major theories, enduring concerns (e.g., conservation, preservation, and management), and current issues (including gender and ethnicity). Appropriate for American Studies majors and minors.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4640 - Studies in the American West (CI)
CI Communications Intensive
3 credits

Interdisciplinary course in American Studies, exploring the region of the West through the analysis of literary texts, historical sources, and socio-cultural materials.

Cross-listed as: HIST 4640.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 4670 - Folk Material Culture
3 credits

Study of folk objects and their connections with culture and history.

Cross-listed as: HIST 4700.

Semester(s) Traditionally Offered: Spring

ENGL 4750 - Advanced Folklore Workshop: Fife Conference
3 credits

Focuses on a theme or topic in folklore, and offers lectures from nationally prominent scholars in the area. Taught during one week, every day and all day.

Cross-listed as: HIST 4750.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

ENGL 4900 - Internship/Cooperative Work Experience
1-15 credits

Offers credit for professional experience obtained outside the classroom, prior to graduation. Requires statement of professional goals and summary report following the experience.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 4910 - Tutoring Practicum
1 credit

Inservice training class for first-semester Writing Center staff members. Repeatable for up to 2 credits.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 5210 - Topics in Linguistics
3 credits

Provides students with opportunity to study topics which are not regularly taught, but which are designed to enrich understanding of linguistics. Typical topics include Old English, roots of English in Germanic, discourse analysis, and English as a world language.
ENGL 5300 - Literature, Arts and Culture (CI)  
CI Communications Intensive  
3 credits  
The interdisciplinary study of literature in relation to other arts and areas of culture. Topics vary.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall

ENGL 5320 - Literature, Politics and Society (CI)  
CI Communications Intensive  
3 credits  
The interdisciplinary study of literature in relation to political and social contexts. Topics vary.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring

ENGL 5340 - Literature, Science and Environment (CI)  
CI Communications Intensive  
3 credits  
The interdisciplinary study of literature in relation to science and environmental issues. Topics vary.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring

ENGL 5400 - Specialized Documents  
3 credits  
Students in the Professional and Technical Writing emphasis prepare documents frequently encountered in business and government, including proposals, environmental impact statements, brochures, and newsletters.

Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring

ENGL 5420 - Publications Production  
3 credits  
Students in the Professional and Technical Writing emphasis examine process of publishing printed documents, beginning with idea and ending with hard copy, printed and bound.

Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.

Semester(s) Traditionally Offered: Spring

ENGL 5430 - Professional Writing Capstone (CI)  
CI Communications Intensive  
3 credits  
Capstone course for students in Professional and Technical Writing emphasis, in which students develop a professional portfolio of their own writing. Should be taken during the senior year.

Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 5490 - Topics in Professional and Technical Writing  
3 credits  
Provides students with opportunity to study topics designed to enrich understanding of professional and technical writing. Typical topics include usability studies, career investigation, game theory, medical writing, and writing for magazines and journals.

Prerequisite/Restriction: Admittance to program and completion of ENGL 3400 and ENGL 3410 with grades of B- or better.

Repeatable for credit.  
Semester(s) Traditionally Offered: Spring
ENGL 5550 - English Teaching Capstone  
3 credits  
Students synthesize and assess their knowledge of the field and their teaching, reading, and writing strengths; and evaluate the program through formal reflection on their own professional growth.  
Prerequisite/Restriction: Enrollment limited to English majors only.  

ENGL 5690 - American Studies Capstone Seminar (CI)  
CI Communications Intensive  
3 credits  
Required for students majoring in American Studies. Enables students to synthesize American Studies theory and methods with interdisciplinary cognate courses. Supports senior thesis design and writing, allowing topics to reflect individual programs of study.  
Cross-listed as: HIST 5690.  
Semester(s) Traditionally Offered: Spring  

ENGL 5700 - Folk Narrative  
3 credits  
Forms and functions of folk narrative genres: myth, legend, folktale, memorate, and ballad. P.  
Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement and completion of a 3000-level course having an ANTH, ENGL, or HIST prefix.  
Cross-listed as: ANTH 5700 and HIST 5700.  
Semester(s) Traditionally Offered: Spring  

ENGL 5900 - Senior Honors Seminar  
1-3 credits  
Capstone course for students enrolled in English Honors Program.  
Prerequisite/Restriction: Enrollment in English Honors Program.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer  

ENGL 5910 - Senior Honors Thesis (CI)  
CI Communications Intensive  
1-6 credits  
Students work in conjunction with English faculty member to write a thesis.  
Prerequisite/Restriction: Enrollment in English Honors Program.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer  

ENGL 5920 - Directed Study  
1-3 credits  
Provides students with opportunity to work individually with faculty member. Contract for work to be completed must be signed by faculty member and student, then filed with English Department.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer  

ENGL 6320 - Literary Theory  
3 credits  
Introduces students to advanced literary theories and provides training in sophisticated critical method.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring  

ENGL 6330 - Topics in Literary Studies  
3 credits  
Allows in-depth study of specific literary topics and theoretical questions.  
Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring  

ENGL 6340 - British Literature and Culture  
3 credits  
Explores British literature and provides training in
literary and cultural criticism. Promotes research and writing skills.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6350 - American Literature and Culture
3 credits

Explores American literature and provides training in literary and cultural criticism. Promotes research and writing skills.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6360 - World Literature and Culture
3 credits

Explores world literature and provides training in literary and cultural criticism. Promotes research and writing skills.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6400 - Advanced Editing
3 credits

Examines complex roles editors assume in creating technical and nontechnical documents. Principal components include working with substance of documents, mediating the writer-reader relationship, and exemplifying the application of rhetorical theory in editing.

Cross-listed as: ENGL 7400.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6410 - Theory and Research in Professional Communication
3 credits

Introduction to contemporary theories of written discourse. Emphasizes the implications of these theories for research in professional communication.

Cross-listed as: ENGL 7410.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6420 - Usability Studies and Human Factors in Professional Communication
3 credits

Examines concepts and practices of usability studies and human factors in the design and production of print and online documents. Emphasizes developing objectives, criteria, and measures for conducting tests in the lab and field.

Cross-listed as: ENGL 7420.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6430 - Publications Management
3 credits

Covers processes for developing and producing publications, including information development cycles, supervision, and budgets.

Cross-listed as: ENGL 7430.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6440 - Studies in Culture and Professional Communication
3 credits

Covers topics in rhetorical, critical, and cultural theory, emphasizing their application to contemporary practices in professional communication.

Cross-listed as: ENGL 7440.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6450 - Reading Theory and Document Design
3 credits

Examines how reading theory interacts with rhetoric of graphics, layout, and type to influence the way documents are designed for maximum information and readability.

Cross-listed as: ENGL 7450.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 6460 - Studies in Digital Media
3 credits
Focuses on the production of advanced digital media documents. Examination of theories underlying such publications, plus the related hardware and software. Topics vary.
Cross-listed as: ENGL 7460.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6470 - Studies in Specialized Documents
3 credits
Focuses on writing and design of specific genres in professional communication. Genres include environmental impact statements, software documentation, proposals, manuals, annual reports, newsletters, and fact sheets. Topics vary.
Cross-listed as: ENGL 7470.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6480 - Studies in Technology and Writing
3 credits
Study of theoretical aspects of technologies affecting writing in professional contexts. Course topics may include an examination of the history of computing, rhetorics of hypertext, or theories of communication in virtual space. Topics vary.
Cross-listed as: ENGL 7480.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

ENGL 6490 - Portfolio
3 credits
Design and preparation of a portfolio containing at least five documents, each accompanied by a justification and discussion.

ENGL 6600 - American Studies Theory and Method
3 credits
Provides students with theory and method of graduate level research in American Studies.
Cross-listed as: HIST 6600.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ENGL 6610 - Seminar on the American West
3-4 credits
Readings and research on topics in the American West. Interdisciplinary focus suitable for graduate students in History and American Studies.
Cross-listed as: HIST 6610.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ENGL 6620 - Seminar in Native American Studies
3-4 credits
Readings and research on topics in Native American history and culture. Interdisciplinary focus suitable for graduate students in History and American Studies.
Cross-listed as: HIST 6620.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

ENGL 6630 - Studies in Film and Popular Culture
3 credits
Offered annually on a rotating basis by professors in folklore and English (Cultural Studies, Literature, British and Commonwealth). Topics and theoretical approaches vary, but the primary focus is on feature films.
Cross-listed as: HIST 6630.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ENGL 6700 - Folklore Theory and Method
3 credits
Serves as orientation for new graduate students in folklore. Introduces students to comparative annotation, folklore indices, oral-formulaic theory, performance theory, contextual analysis, and other approaches.
Cross-listed as: HIST 6700.
Semester(s) Traditionally Offered: Fall
ENGL 6710 - Space, Place and Folklore
3 credits

Study of expressive culture in relation to space and place in social theory. Perspectives range from ideas about landscape and region to globalization.

Cross-listed as: HIST 6710.

Semester(s) Traditionally Offered: Spring
ENGL 6720 - Folklore Fieldwork
3 credits

Basic methodology class for folklorists and oral historians. Students learn interviewing techniques and other methods for observing and recording the performance of tradition and traditional history.

Cross-listed as: HIST 6720.

Semester(s) Traditionally Offered: Spring
ENGL 6730 - Public Folklore
3 credits

Provides history and analysis of governmental involvement in protecting, promoting, and otherwise manipulating and utilizing cultural heritage.

Cross-listed as: HIST 6730.

Semester(s) Traditionally Offered: Fall
ENGL 6740 - Folk Narrative
3 credits

Covers principal narrative genres in folk tradition (myth, tale, legend, ballad) and the basic theories for their analysis and discussion.

Cross-listed as: HIST 6740.

Semester(s) Traditionally Offered: Spring
ENGL 6750 - Advanced Folklore Workshop: Fife Conference
3 credits

Intensive workshop focusing on a topic in folklore. Brings in nationally known experts as lecturers and discussants. Taught during one week, every day and all day.

Cross-listed as: HIST 6750.

Semester(s) Traditionally Offered: Summer
ENGL 6760 - Cultural and Historical Museums
3 credits

Examines outdoor cultural and historical museums, examining their function in modern multi-cultural societies.

Cross-listed as: HIST 6760.

Semester(s) Traditionally Offered: Spring
ENGL 6770 - Seminar in Folklore and Folklife
3 credits

Conducts close, professional-level study of major areas of folklore and folklife research. A.

Cross-listed as: HIST 6770.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall
ENGL 6800 - Theory and Practice of Online Education in Writing
3 credits

Examination of principles and their implementation in online writing instruction. Emphasis placed on writing instruction within English departments.

Cross-listed as: ENGL 7800.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring
ENGL 6810 - Introduction to Composition Studies
3 credits

Introduces students to scholarship in the field of composition studies. Students become acquainted with scholars, forums, themes, and methods of the field.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 6820 - Practicum in Teaching English
3 credits

Introduction to teaching writing, designed specifically for graduate instructors teaching in the English Department writing program. Focuses on theory and practice of teaching writing, specifically ENGL 1010, but also prepares graduate instructors for further teaching responsibilities.

Semester(s) Traditionally Offered: Fall

ENGL 6830 - Rhetorical Theory
3 credits

Covers intellectual traditions of rhetoric from classical times to the present. As students study major theories, theoreticians, and controversies in the field, they come to understand rhetoric as the study of relations between discourse, knowledge, and power.

Cross-listed as: ENGL 7830.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6850 - Advanced Studies in the Teaching of English
3 credits

Provides a critical approach to English pedagogy. Prepares students to teach English classes such as literature, composition, and creative writing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6860 - Teaching Technical Writing
3 credits

Prepares students to teach general purpose technical writing courses at the undergraduate level. Students read and discuss articles on technical writing and practice writing a series of technical documents.

Cross-listed as: ENGL 7860.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6880 - Topics in Creative Writing
3 credits

Examines field of creative writing as an art, concentrating on issues of craft and creation. May study the fundamentals of a particular genre, the history of a genre, theories of form, how writers work, how they approach their genre, etc., all with an eye toward craft and examined from a writer’s perspective.

Prerequisite/Restriction: Enrollment limited to graduate students only.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6882 - Fiction Writing Workshop
3 credits

Students write fiction and participate in writing workshops, where their work is critiqued by the class. Course also involves study of the art and craft of fiction, its history, form, and content, especially that of contemporary fiction examined from a writer’s perspective.

Prerequisite/Restriction: Enrollment limited to graduate students only.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6883 - Poetry Writing Workshop
3 credits

Students write poetry and participate in writing workshops, where their work is critiqued by the class. Course also involves study of the art and craft of poetry, its history, form, and content, especially that of contemporary poetry examined from a writer’s perspective.

Prerequisite/Restriction: Enrollment limited to graduate students only.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6884 - Creative Nonfiction Writing Workshop
3 credits

Students write creative nonfiction and participate in writing workshops, where their work is critiqued by the class. Course also involves study of the art and craft of creative nonfiction, its history, form, and content, especially that of contemporary creative nonfiction examined from a writer’s perspective.

Semester(s) Traditionally Offered: Fall, Spring, Summer
Prerequisite/Restriction: Enrollment limited to graduate students only.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6890 - Studies in Writing and Rhetoric
3 credits

Allows in-depth study of specific rhetorical topics and theoretical questions.

Cross-listed as: ENGL 7890.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 6900 - Graduate Internship
1-15 credits

Format and credit limit vary for different programs in the department. See program advisor for details and approval to enroll in this course.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6920 - Directed Study
1-6 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6970 - Thesis
1-6 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 6990 - Continuing Graduate Registration
1-6 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENGL 7000 - Advanced Research Methods in Professional Communication
3 credits

Survey of major research methods (qualitative and quantitative) for conducting professional communication research in academic and nonacademic settings. Coursework will culminate in a formal proposal to conduct a discipline-appropriate study in the workplace.

Semester(s) Traditionally Offered: Spring

ENGL 7400 - Advanced Editing
3 credits

Examines complex roles editors assume in creating technical and nontechnical documents. Principal components include working with substance of documents, mediating the writer-reader relationship, and exemplifying the application of rhetorical theory in editing.

Cross-listed as: ENGL 6400.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7410 - Theory and Research in Professional Communication
3 credits

Introduction to contemporary theories of written discourse. Emphasizes the implications of these theories for research in professional communication.

Cross-listed as: ENGL 6410.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7420 - Usability Studies and Human Factors in Professional Communication
3 credits

Examines concepts and practices of usability studies and human factors in the design and production of print and online documents. Emphasizes developing objectives, criteria, and measures for conducting tests in the lab and field.

Cross-listed as: ENGL 6420.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7430 - Publications Management
3 credits

Covers processes for developing and producing
publications, including information development cycles, supervision, and budgets.

Cross-listed as: ENGL 6430.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7440 - Studies in Culture and Professional Communication
3 credits

Covers topics in rhetorical, critical, and cultural theory, emphasizing their application to contemporary practices in professional communication.

Cross-listed as: ENGL 6440.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7450 - Reading Theory and Document Design
3 credits

Examines how reading theory interacts with rhetoric of graphics, layout, and type to influence the way documents are designed for maximum information and readability.

Cross-listed as: ENGL 6450.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7460 - Studies in Digital Media
3 credits

Focuses on the production of advanced digital media documents. Examination of theories underlying such publications, plus the related hardware and software. Topics vary.

Cross-listed as: ENGL 6460.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7470 - Studies in Specialized Documents
3 credits

Focuses on writing and design of specific genres in professional communication. Genres include environmental impact statements, software documentation, proposals, manuals, annual reports, newsletters, and fact sheets. Topics vary.

Cross-listed as: ENGL 6470.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7480 - Studies in Technology and Writing
3 credits

Study of theoretical aspects of technologies affecting writing in professional contexts. Course topics may include an examination of the history of computing, rhetorics of hypertext, or theories of communication in virtual space. Topics vary.

Cross-listed as: ENGL 6480.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7800 - Theory and Practice of Online Education in Writing
3 credits

Examination of principles and their implementation in online writing instruction. Emphasis placed on writing instruction within English departments.

Cross-listed as: ENGL 6800.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ENGL 7830 - Rhetorical Theory
3 credits

Covers intellectual traditions of rhetoric from classical times to the present. As students study major theories, theoreticians, and controversies in the field, they come to understand rhetoric as the study of relations between discourse, knowledge, and power.

Cross-listed as: ENGL 6830.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

ENGL 7860 - Teaching Technical Writing
3 credits

Prepares students to teach general purpose technical writing courses at the undergraduate level. Students read
and discuss articles on technical writing and practice writing a series of technical documents.

Cross-listed as: ENGL 6860.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 7890 - Studies in Writing and Rhetoric
3 credits

Allows in-depth study of specific rhetorical topics and theoretical questions.

Cross-listed as: ENGL 6890.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
ENGL 7900 - Research Internship
6 credits

Application of workplace field research and methods in an actual workplace setting.

Prerequisite/Restriction: ENGL 7000.

Semester(s) Traditionally Offered: Fall
ENGL 7920 - Directed Study
3 credits
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
ENGL 7970 - Dissertation Research
1-12 credits
Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer
ENGL 7990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.

English as a Second or Other Language (USU Eastern)
ESOL 1030 - International Student Orientation
1 credit
Provides first-semester students with knowledge of the services and regulations governing international students while attending USU Eastern. Course will aid in the student’s cultural transition to U.S. education and will provide particulars of complying with BCIS (Bureau of Citizenship and Immigration Service) rules and regulations governing F-1 visa holders. Course will include an overview of academic regulations, graduation requirements, USU Eastern policies and procedures. Class meets daily for the first three weeks of each semester. Course is required of all new F-1 international students at USU Eastern.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring, Summer
ESOL 1040 - Listening/Speaking
3 credits
Prepares non-native speakers of English to participate confidently in academic and social situations. Emphasizes activities in critical thinking, interactive listening, and pronunciation skills. Includes lectures, oral presentations and small group activities. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
ESOL 1050 - Academic Reading
3 credits
Designed to provide general strategies for improving reading skills for academic course work. Includes critical reading, comprehension, analysis, synthesis, and evaluation. Also encompasses skills in taking notes, preparing for exams, and interpreting visual aids. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Cross-listed as: ENGL 1050
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
ESOL 1055 - Vocabulary
2 credits
Emphasis is on academic content vocabulary. Develops strategies for increasing vocabulary using context clues and word parts. Root words, prefixes and suffixes will be examined in detail. Class will prepare students for academic course work and standardized test taking. Also includes some idioms and metaphors. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Cross-listed as: ENGL 1055

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1060 -  Academic Writing
3 credits
Perfecting sentences, paragraphs, and essays will be emphasized. Offers students writing practice strategies in responding to academic assignments. Basics of research and documentation are also presented. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1065 -  Grammar
2 credits
Basic review of English grammar, including mechanics and usage. Studies types of sentences, phases, clauses, modifiers, punctuation and other mechanics. Course is appropriate for any student wanting to improve their grammar skills. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1140 -  Listening/Speaking
3 credits
Prepares non-native speakers of English to participate confidently in academic and social situations. Emphasizes activities in critical thinking, interactive listening, and pronunciation skills. Includes lectures, oral presentations and small group activities. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1150 -  Academic Reading
3 credits
Designed to provide general strategies for improving reading skills for academic course work. Includes critical reading, comprehension, analysis, synthesis, and evaluation. Also encompasses skills in taking notes, preparing for exams, and interpreting visual aids. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1155 -  Vocabulary
2 credits
Emphasis is on academic content vocabulary. Develops strategies for increasing vocabulary using context clues and word parts. Root words, prefixes and suffixes will be examined in detail. Class will prepare students for academic course work and standardized test taking. Also includes some idioms and metaphors. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

ESOL 1160 -  Academic Writing
3 credits
Perfecting sentences, paragraphs, and essays will be emphasized. Offers students writing practice strategies in responding to academic assignments. Basics of research and documentation are also presented. International students who transfer to Logan before receiving an associate’s degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.
ESOL 1165 - Grammar
2 credits

Basic review of English grammar, including mechanics and usage. Studies types of sentences, phrases, clauses, modifiers, punctuation and other mechanics. Course is appropriate for any student wanting to improve their grammar skills. International students who transfer to Logan before receiving an associate's degree are required to take the IELI Placement Exam and begin courses as indicated by exam results.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

Environment and Society

ENVS 1200 - Native Americans and the Environment
3 credits

Examines historical and contemporary issues of Native American land use. Explores opposing views with information allowing critical assessment of issues. Folk and scientific resources will be used.

Campus: USU Eastern only

ENVS 1990 - Professional Orientation for Environment and Society
2 credits

Introduces new students to university scholarship and citizenship, careers in environmental and natural resources science and management, development of leadership and team skills, and analysis of issues relating to the diverse relationships between society and the natural environment.

Semester(s) Traditionally Offered: Fall

ENVS 2100 - Western Culture and Heritage Tourism
2 credits

Designed to help students understand the importance of western culture and heritage. Tourism in a rapidly growing recreation industry. May be a transfer credit depending on major. Students will investigate how to transform underdeveloped western culture and historic sites into value added enterprises. Business and marketing skills will be blended with recreation site development skills resulting in a comprehensive recreation enterprise. Class includes lecture, lab and field trip.

Prerequisite/Restriction: PRP 1100

Campus: USU Eastern only

ENVS 2250 - Introductory Internship/Co-op
1-3 credits

Introductory-level educational experience in internship/cooperative education position approved by department.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 2340 - Natural Resources and Society (BSS)
BSS Breadth Social Sciences
3 credits

Examines human values, uses, and management of natural settings at the individual, community, and societal levels. Topics include: psychological responses to nature, history of U.S. park and natural resource management, environmental sociology and politics, and nature in non-Western cultures.

Semester(s) Traditionally Offered: Fall

ENVS 3010 - Fundamentals of Natural Resource and Environmental Policy
3 credits

Examines policymaking for natural resources management and environmental protection, focusing on how issues are addressed among different stakeholders. Topics include policy development, policymaking, participants, and policy instruments. Analyses of specific laws and regulations demonstrate the importance and complexity of policymaking.

Semester(s) Traditionally Offered: Fall

ENVS 3300 - Fundamentals of Recreation Resources Management
3 credits

Principles of wildland recreation management including: characteristics of recreation use and users, introduction to planning concepts, management of wildland recreation facilities and infrastructure, and integration with other natural resource uses.

Semester(s) Traditionally Offered: Fall
ENVS 3330 - Environment and Society
3 credits

Emphasizes how human actions modify the physical environment and how physical systems affect human systems and the changes occurring in the meaning, use, and importance of resources at a global and regional scale.

Semester(s) Traditionally Offered: Spring
ENVS 3500 - Quantitative Assessment of Environmental and Natural Resource Problems (QI)
QI Quantitative Intensive
3 credits

Overview of analytical and sampling methods used for collecting, organizing, and interpreting numeric data to evaluate problems and monitor conditions relating to relationships between environment and society.

Prerequisite/Restriction: STAT 2000 or STAT 3000; MATH 1050

Semester(s) Traditionally Offered: Fall
ENVS 3600 - Living with Wildlife (DSC)
DSC Depth Life and Physical Sciences
3 credits

Reviews history and development of wildlife management programs in the United States. Explores diversity of attitudes toward wildlife, which affect development and evolution of wildlife management programs. Development and analysis of case histories of contemporary and controversial wildlife management decisions.

Semester(s) Traditionally Offered: Spring
ENVS 4000 - Human Dimensions of Natural Resource Management (DSS)

DSS Depth Social Sciences
3 credits

Focuses on balancing science and social values in ecosystem management and decision-making. Topics include environmental justice, communication and behavior change strategies, landscape perception and attitudes, resource-dependent communities, public involvement, and conflict management.

Semester(s) Traditionally Offered: Fall
ENVS 4110 - Fisheries and Wildlife Policy and Administration
3 credits

Cross-listed as: ENVS 6110.

Semester(s) Traditionally Offered: Fall
ENVS 4130 - Recreation Policy and Planning
3 credits

Examines the historical, legal, and political context of outdoor recreation policy on public lands; government agency culture, regulation, and partnering; relationship of outdoor recreation to tourism; and theory and application of principal planning tools for outdoor recreation settings.

Semester(s) Traditionally Offered: Spring
ENVS 4250 - Advanced Internship/Co-op
1-9 credits

Directed and evaluated cooperative education or work experience for undergraduates in public and private organizations.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
ENVS 4440 - Stegner Center Annual Symposium
1 credit
Offered through the University of Utah College of Law. Topics vary each year, but always focus on natural resource policy-related issues.

Cross-listed as: ENVS 6440.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ENVS 4500 - Wildland Recreation Behavior (CI)
CI Communications Intensive
3 credits

Social, psychological, and geographic influences on human behaviors in wildland recreation settings. Emphasis on critical problems affecting public land recreation management.

Semester(s) Traditionally Offered: Fall

ENVS 4600 - Natural Resource Interpretation
3 credits

Planning processes and techniques for providing interpretive programs developed for wildland recreation areas and visitor centers. Evaluation and planning of visitor information efforts.

Semester(s) Traditionally Offered: Fall

ENVS 4920 - Special Projects in Recreation Management
1-3 credits

Participation in special projects to assist public recreation agencies or nonprofit organizations, while gaining hands-on experience in recreation management, planning, and monitoring. Many experiences entail intensive, short-duration efforts away from campus. Prerequisite: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 4950 - Special Topics
1-3 credits

Individual study and research upon selected environmental and societal problems.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 4960 - Directed Readings
1-3 credits

Individual reading research on selected environmental and societal readings.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 4970 - Undergraduate Research
1-3 credits

Individual or team research.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 4980 - Undergraduate Seminar
1 credit

Intended to bring upperclassmen up-to-date on environmental and societal topics.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

ENVS 4990 - Environmental and Natural Resource Professionalism Seminar
2 credits

Introduces concepts of professionalism in natural resources, including ethical issues in science and management, organizational culture, and workplace expectations. Analyzes current issues with practicing professionals. Reinforces leadership and team-building skills.

Prerequisite/Restriction: ENVS 1990.

Semester(s) Traditionally Offered: Fall

ENVS 5000 - Collaborative Problem-Solving for Environment and Natural Resources
3 credits
Project-based capstone course for environmental studies majors. Students work in teams to develop plans and alternative solutions relevant to actual issues or land areas, integrating knowledge from a range of environmental and natural resource disciplines.

Prerequisite/Restriction: Senior standing and ENVS 4000

Semester(s) Traditionally Offered: Spring

ENVS 5110 - Environmental Education
3 credits

Covers teaching about the environment, and using the environment and the natural world to teach other subjects, with a strong emphasis on participation and on practicing teaching techniques.

Semester(s) Traditionally Offered: Spring

ENVS 5300 - Natural Resources Law and Policy
2 credits

Legal and administrative regulation of forests and associated resources (water, air, fish, wildlife, and scenery). Emphasis on agency organizational culture, federal legislation, court cases, administrative procedures, and federal natural resources agencies’ interactions with tribal, state, and local governments.

Semester(s) Traditionally Offered: Spring

ENVS 5550 - Sustainability: Concepts and Measurement
3 credits

Examines the challenges and opportunities of sustaining resources and ways of life. Develops a global and long-term perspective on concepts of sustainability, challenges, resources, courses of action to become sustainable, and how to measure progress toward sustainability goals.

Cross-listed as: ENVS 6550.

Semester(s) Traditionally Offered: Spring

ENVS 5570 - Sustainable Living
3 credits

Theories and techniques for decision-making about environmental impacts of consumer decision-making, and about alternatives for a sustainable future. Incorporates meanings of sustainable living, relationships between lifestyle choices and the environment, and feasible steps toward ecological sustainability.

Semester(s) Traditionally Offered: Spring

ENVS 5640 - Conflict Management in Natural Resources (CI)
CI Communications Intensive
3 credits

Introduction to conflict management techniques for those involved in natural resource management.

Cross-listed as: ENVS 6640 and SOC 5640/SOC 6640.

Semester(s) Traditionally Offered: Spring

ENVS 5800 - Field Studies in Collaborative Natural Resource Stewardship
3 credits

Two-week field course introduces students to methods and philosophical approaches incorporated in Tehabi, a summer-long internship program focusing on collaborative stewardship of natural resources. Enrollment limited to students accepted into the Tehabi program.

Semester(s) Traditionally Offered: Summer

ENVS 5810 - Internship in Collaborative Natural Resource Stewardship
3 credits

Mentored internship involving participation in the Tehabi program, which teaches collaborative stewardship of natural resources within a federal, state, or nonprofit agency. Enrollment limited to students accepted into the Tehabi program.

Semester(s) Traditionally Offered: Summer
ENVS 5820 - Field Studies in Environmental Conservation and Sustainability
3 credits

Allows Utah Conservation Corps members to explore land management issues and sustainability while engaging in service. Sessions during pre-service training focus on contextual factors defining environmental issues. During weekly field sessions, students focus on personally relevant aspects of sustainability.

Semester(s) Traditionally Offered: Summer

ENVS 6000 - Theoretical Foundations in Human Dimensions of Ecosystem Science and Management
3 credits

Overview of interdisciplinary theories and frameworks concerning how human societies affect, and are affected by, ecosystem processes at local, regional, and global scales. Focuses on systems theory, social and environmental sustainability, and scientific integration for ecosystem planning, policy, and management.

Cross-listed as: ENVS 7000.

Semester(s) Traditionally Offered: Fall

ENVS 6050 - Best Research Practices in the Natural Resources and Environmental Sciences
3 credits

Explores best research practices from top scientific articles for planning and carrying out reliable experiments in the natural resources and environmental sciences, conceiving and testing research hypotheses, establishing cause and effect, deducing new knowledge from existing knowledge, and more.

Semester(s) Traditionally Offered: Spring

ENVS 6110 - Fisheries and Wildlife Policy and Administration
3 credits

Examination of policy issues and administrative approaches in fish and wildlife management, with particular emphasis on nonbiological issues facing wildlife managers and administrators.

Cross-listed as: ENVS 4110.

Semester(s) Traditionally Offered: Fall

ENVS 6130 - Policy Aspects of Wildland Recreation
3 credits

Political, legal, and economic bases for wildland recreation management. Relationship between outdoor recreation and tourism. Lectures concurrent with ENVS 4130. Also includes weekly discussion session focusing on relevant scientific research and policy analyses.

Semester(s) Traditionally Offered: Spring

ENVS 6150 - Conservation Policy for Private Lands
3 credits

This discussion-based course covers a variety of topics related to policy issues involving the management and conservation of private lands and associated natural resources, and examines social science research methods as applied to policy analysis and development.

Semester(s) Traditionally Offered: Fall

ENVS 6200 - Bioregional Analysis and Planning
5 credits

Compilation and analysis of data for assessing biophysical and socio-economic features of landscapes, and for evaluating impacts of land-use policies across both landscapes and time. Provides real-world learning experience in working with stakeholders and agency decision-makers.

Semester(s) Traditionally Offered: Fall

ENVS 6210 - Bioregional Management and Policy
5 credits

Continuation of ENVS 6200. Assessment of land-use policies across landscapes and time, with an emphasis on evaluating consequences of community growth via the generation and analysis of future development and management alternatives.

Prerequisite/Restriction: ENVS 6200.

Semester(s) Traditionally Offered: Spring

ENVS 6240 - Graduate Internship/Co-op
1-9 credits
Graduate-level educational experience in internship/cooperative education position approved by department.

Prerequisite/Restriction: Approval of department.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 6300 - Social and Environmental Psychology of Natural Resources
3 credits

Examines how people respond as individuals to nature and environmental phenomena, drawing on theory and research from social psychology, environmental psychology, and behavior analysis.Emphasizes applications to knowledge, attitude, and behavior change strategies for improving environmental sustainability.

Cross-listed as: ENVS 7300.

Semester(s) Traditionally Offered: Spring

ENVS 6320 - Water Law and Policy in the United States
3 credits

Introduction to policies, laws, institutions, and practices guiding western water allocation, emphasizing how to efficiently and equitably allocate increasingly scarce supplies. Explores reserved water rights, water markets, stream adjudication, public trust doctrine, basinwide management, and riparian management.

Cross-listed as: ENVS 7320

Semester(s) Traditionally Offered: Spring

ENVS 6400 - Ecological Aspects of Wildland Recreation
3 credits

Assessment of current knowledge and knowledge gaps concerning impacts of wildland recreation on wildlife, plants, soil and water resources, and processes. Strategies for coexistence of recreation visitors and nonhuman ecosystem elements.

Semester(s) Traditionally Offered: Spring

ENVS 6440 - Stegner Center Annual Symposium
1 credit

Offered through the University of Utah College of Law. Topics vary each year, but always focus on natural resource policy-related issues.

Cross-listed as: ENVS 4440.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ENVS 6500 - Behavior Aspects of Wildland Recreation
3 credits

Social and psychological analysis of visitor behavior in outdoor recreation settings. Sources of recreation management problems and practical and theoretical basis for management practices. Lectures concurrent with ENVS 4500. Separate discussion sessions focus on research concerning recreation behavior.

Semester(s) Traditionally Offered: Fall

ENVS 6530 - Natural Resources Administration
2 credits

Organizational structures and processes common in natural resources administration on federal and state levels, and how they impact career development and land management.

Semester(s) Traditionally Offered: Fall

ENVS 6550 - Sustainability: Concepts and Measurement
3 credits

Examines the challenges and opportunities of sustaining resources and ways of life. Develops a global and long-term perspective on concepts of sustainability, challenges, resources, courses of action to become sustainable, and how to measure progress toward sustainability goals.

Cross-listed as: ENVS 5550.

Semester(s) Traditionally Offered: Spring

ENVS 6580 - Sustainable Nature-Based Tourism
3 credits

Explores how sustainable nature-based tourism can fit into natural resource management with benefits to individuals, communities, economies, society, and the
environment. Includes study of definitions and concepts, ecological and social impacts of nature-based tourism, and planning and management tools.

Semester(s) Traditionally Offered: Summer
ENVS 6600 - Advanced Natural Resource Interpretation
3 credits
Planning processes, techniques, and evaluation procedures for using information and education to influence human behavior and increase benefits to visitors in natural settings. Leadership of teams involved in producing interpretive plans and materials.

Semester(s) Traditionally Offered: Fall
ENVS 6610 - Foundations of Environmental Education
3 credits
Offers foundational knowledge of environmental education for persons working in education and public outreach settings who wish to incorporate environmental education into their activities. Covers history and goals, professional roles and instructional methods of environmental education.

Semester(s) Traditionally Offered: Spring
ENVS 6620 - Environment Education Practicum
4 credits
Hands-on practicum for persons working in education and public outreach settings. Students develop, evaluate, and improve environmental education programs.

Prerequisite/Restriction: ENVS 6610

Semester(s) Traditionally Offered: Summer
ENVS 6640 - Conflict Management in Natural Resources
3 credits
Introduction to conflict management techniques for those involved in natural resource management.

Cross-listed as: ENVS 5640 and SOC 6640/SOC 5640.

Semester(s) Traditionally Offered: Spring
ENVS 6700 - Research Approaches in Human Dimensions of Ecosystem Science and Management

3 credits
Experience conceptualizing and prioritizing research problems involving human societies and ecosystems. Reviews approaches for creating and testing interdisciplinary hypotheses pertaining to human-ecosystem interactions. Explores methods for integrating social and biophysical data.

Cross-listed as: ENVS 7700.

Semester(s) Traditionally Offered: Spring
ENVS 6800 - Environment and Society Departmental Seminar
1 credit

Cross-listed as: ENVS 7800.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring
ENVS 6810 - Research Techniques in Human Dimensions of Ecosystem Science and Management
3 credits
Experience using various quantitative and qualitative techniques and tools to collect and analyze data in research projects focused on human-ecosystem interactions. Topics range from survey sampling to use of simulation models and spatial statistics involving Geographic Information Systems (GIS).

Cross-listed as: ENVS 7810.

Semester(s) Traditionally Offered: Fall
ENVS 6840 - Graduate Introductory Seminar for Environment and Society
1 credit

Each faculty member meets with first-year graduate students in a seminar format to review and discuss in depth the faculty member's area of academic specialization.

Cross-listed as: ENVS 7840.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall
ENVS 6870 - Ecology Seminar
1 credit

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures. Students should register for fall semester, but attend through spring semester.

Cross-listed as: BIOL 6870, PSC 6870, WATS 6870, and WILD 6870.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

ENVS 6900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 6910 - Directed Study
1-6 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 6960 - Graduate General Ecology
4 credits

General concepts, history, and issues in all major areas of the science of ecology including: environmental biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic enviroments.

Cross-listed as: BIOL 6960, PSC 6960, WATS 6960, and WILD 6960.

Semester(s) Traditionally Offered: Fall

ENVS 6970 - Thesis Research
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 6990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 7000 - Theoretical Foundations in Human Dimensions of Ecosystem Science and Management
3 credits

Overview of interdisciplinary theories and frameworks concerning how human societies affect, and are affected by, ecosystem processes at local, regional, and global scales. Focuses on systems theory, social and environmental sustainability, and scientific integration for ecosystem planning, policy, and management.

Cross-listed as: ENVS 6000.

Semester(s) Traditionally Offered: Fall

ENVS 7300 - Social and Environmental Psychology of Natural Resources
3 credits

Examines how people respond as individuals to nature and environmental phenomena, drawing on theory and research from social psychology, environmental psychology, and behavior analysis. Emphasizes applications to knowledge, attitude, and behavior change strategies for improving environmental sustainability.

Cross-listed as: ENVS 6300.

Semester(s) Traditionally Offered: Spring

ENVS 7320 - Water Law and Policy in the United States
3 credits

Introduction to policies, laws, institutions, and practices guiding western water allocation, emphasizing how to efficiently and equitably allocate increasingly scarce supplies. Explores reserved water rights, water markets, stream adjudication, public trust doctrine, basinwide management, and riparian management.

Cross-listed as: ENVS 6320

Semester(s) Traditionally Offered: Spring
ENVS 7700 - Research Approaches in Human Dimensions of Ecosystem Science and Management
3 credits

Experience conceptualizing and prioritizing research problems involving human societies and ecosystems. Reviews approaches for creating and testing interdisciplinary hypotheses pertaining to human-ecosystem interactions. Explores methods for integrating social and biophysical data.

Cross-listed as: ENVS 6700.

Semester(s) Traditionally Offered: Spring

ENVS 7800 - Environment and Society Departmental Seminar
1 credit

Cross-listed as: ENVS 6800.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

ENVS 7810 - Research Techniques in Human Dimensions of Ecosystem Science and Management
3 credits

Experience using various quantitative and qualitative techniques and tools to collect and analyze data in research projects focused on human-ecosystem interactions. Topics range from survey sampling to use of simulation models and spatial statistics involving Geographic Information Systems (GIS).

Cross-listed as: ENVS 6810.

Semester(s) Traditionally Offered: Fall

ENVS 7840 - Graduate Introductory Seminar for Environment and Society
1 credit

Each faculty member meets with first-year graduate students in a seminar format to review and discuss in depth the faculty member's area of academic specialization.

Cross-listed as: ENVS 6840.

ENVS 7900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 7910 - Directed Study
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 7970 - Dissertation Research
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ENVS 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Family, Consumer, and Human Development

FCHD 1010 - Balancing Work and Family (BSS)
BSS Breadth Social Sciences
3 credits

Introduces students to issues facing families trying to balance work with family responsibilities. Examines integration of work and family across areas of marriage and family relationships, financial management, and child development and parenting.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 1100 - Critical Issues in Family, Consumer, and Human Development
1 credit
Introduction to the majors, minors, emphases, and disciplines in family, consumer, and human development. Emphasizes career opportunities and how scholars in this field address critical social issues.

FCHD 1500 - Human Development Across the Lifespan (BSS)
BSS Breadth Social Sciences
3 credits
Overview of human development across the lifespan, from conception to death.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 2030 - PE for Young Children
2 credits
A course for early childhood and elementary students which combines the philosophy of physical education with the practical planning and implementing of physical education experiences for children in the primary and elementary.
Campus: USU Eastern only

FCHD 2100 - Family Resource Management
3 credits
Explores the significance of values, goals, planning, and decision-making strategies in the development, management, and allocation of human, economic, and environmental resources.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 2200 - Introductory Workshop in Family, Consumer, and Human Development
1-12 credits
Introductory workshop. Topics of discussion vary each semester.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 2400 - Marriage and Family Relationships (BSS)
BSS Breadth Social Sciences
3 credits
Overview of couple and family relationships, including marriage, child bearing and rearing, intergenerational relationships, and alternative family forms.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 2450 - The Consumer and the Market (BSS)
BSS Breadth Social Sciences
3 credits
Explores how the marketplace operates, including factors influencing consumer purchases, current consumer problems, and assistance provided to consumers by federal and state agencies, businesses, and other organizations.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 2510 - Child Development Birth to Eight
3 credits
A required course for all early childhood and elementary education students which focuses on developmental characteristics, developmental processes, events and circumstances that influence the young child from birth through eight years of age. Special emphasis is on research that stresses the importance of development in the guidance and education of infants and young children.
Campus: USU Eastern only

FCHD 2600 - Seminar in Early Childhood Education
2 credits
Orientation to the profession of early childhood education, current philosophies, teaching techniques, and approaches to curricula found in programs for young children.
Prerequisite/Restriction: Admission to teacher education or permission of instructor.
Corequisite: FCHD 2630
Semester(s) Traditionally Offered: Fall, Spring

FCHD 2610 - Child Guidance (HR)
HR Human Relations
3 credits
Review of parenting styles and child guidance philosophies with emphasis on principles and techniques.
Semester(s) Traditionally Offered: Fall, Spring

FCHD 2620 - Planning Creative Experiences for Young Children
3 credits

A course for early childhood and elementary education students covering the development and use of creative materials, equipment, and the skills needed to plan and teach age, individually, and developmentally appropriate curriculum for young children. Lab experience to be arranged (2 hours per week)

Prerequisite/Restriction: FCHD 2510 and FCHD 2600

Campus: USU Eastern only

FCHD 2625 - Administration of Early Childhood Programs
2 credits

A required course for students seeking a certificate in early childhood development. Basic management principles in directing a preschool or child care program will be covered, including budgeting, personnel, building and equipment, licensing and health and safety as they pertain to early childhood programs.

Prerequisite/Restriction: FCHD 1500 and FCHD 2510 and FCHD 2600

Campus: USU Eastern only

FCHD 2627 - Storytelling
2 credits

Required by all early childhood students. Introduces students to the selection of literature for young children, and the telling of children's stores in a classroom setting. Emphasis is on the developmental needs of children and teaching opportunities afforded the teacher.

Campus: USU Eastern only

FCHD 2630 - Practicum in Early Childhood Education
2-5 credits

Students participate in developmentally appropriate preschool programs as classroom aides.

Prerequisite/Restriction: Admission to teacher education or instructor's permission.

Corequisite: FCHD 2600.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 2631 - Teaching Seminar
1 credit

A seminar for education students in the practicum teaching laboratory experience. The seminar format is used to discuss the strengths and challenges associated with teaching. Individualized training plans are developed, along with their application to the teaching of young children.

Prerequisite/Restriction: FCHD 2510 and FCHD 2600 and FCHD 2610 and FCHD 2620

Corequisite: FCHD 2630

Campus: USU Eastern only

FCHD 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in family life studies. The student meets with the instructor/coordinaator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

FCHD 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit will be arranged.

Campus: USU Eastern only

FCHD 2999 - Workshop
1-3 credits

Designed to meet the changing needs of the student in Family Life

Campus: USU Eastern only
FCHD 3100 - Abuse and Neglect in Family Context
3 credits
Causes, treatment, and laws regarding family violence, including child abuse and neglect, partner abuse, and elder abuse.
Prerequisite/Restriction: Sophomore standing, FCHD 1500, FCHD 2400.
Semester(s) Traditionally Offered: Fall, Spring

FCHD 3110 - Human Sexuality
3 credits
Development and expression of human sexual values, attitudes, and behaviors in family and cultural contexts.
Prerequisite/Restriction: FCHD 1500, FCHD 2400; fulfillment of Communications Literacy CL2 requirement; and junior standing.
Semester(s) Traditionally Offered: Fall

FCHD 3130 - Research Methods (QI)
QI Quantitative Intensive
3 credits
Common methodologies used in current family and human development research. Emphasis on becoming a knowledgeable and informed consumer of research.
Prerequisite/Restriction: STAT 1040. Enrollment limited to FCS and FCHD majors only.
Semester(s) Traditionally Offered: Fall, Spring

FCHD 3210 - Families and Cultural Diversity (CI)
CI Communications Intensive
3 credits
Similarities and differences in family patterns and functions in terms of race and ethnicity, gender, social class, and international development.
Prerequisite/Restriction: FCHD 1500, FCHD 2400, and fulfillment of Communications Literacy CL2 requirement. Enrollment limited to FCHD majors only.
Semester(s) Traditionally Offered: Fall, Spring

FCHD 3280 - Economic Issues for Individuals and Families
3 credits
Focuses on issues related to economic well-being of individuals and families, with special emphasis on income and wealth, poverty, consumption and saving, work and leisure, human capital investment, and aging.
Semester(s) Traditionally Offered: Spring

FCHD 3310 - Consumer Policy
3 credits
Examines different tools for policy analysis. Provides conceptual and analytical framework for understanding the role of consumer sciences professionals as political actors and the potential to influence the shaping of public policy, particularly consumer and government policies.
Semester(s) Traditionally Offered: Spring

FCHD 3340 - Housing: Societal and Environmental Issues
3 credits
Studies housing in the contemporary U.S., including affordability, access, expectations, aesthetic considerations, and effects of public and private policies on housing choices.
Semester(s) Traditionally Offered: Fall

FCHD 3350 - Family Finance (DSS)
DSS Depth Social Sciences
3 credits
Achieving personal and family financial goals, including financial planning and record keeping, different types of insurance, taxes, use of credit, investments, retirement, and estate planning.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 3450 - Consumer Credit Problems
3 credits
Consumer credit problems, debt reduction strategies, credit collection policies and practices, bankruptcy, and government assistance programs.
Prerequisite/Restriction: FCHD 3350.
Semester(s) Traditionally Offered: Fall
FCHD 3510 - Infancy and Early Childhood
3 credits
Development and growth of the child from conception to five years. Physical, social, and emotional growth; and parenting skills.
Prerequisite/Restriction: Junior standing and FCHD 1500, FCHD 2610.
Corequisite: FCHD 3550

Semester(s) Traditionally Offered: Fall, Spring
FCHD 3520 - Children in the Middle Years
3 credits
Growth and development of normal children. Guidance principles related to behavior of children at these age levels.
Prerequisite/Restriction: Junior standing and FCHD 1500, FCHD 2610.
Corequisite: FCHD 3560

Semester(s) Traditionally Offered: Fall
FCHD 3530 - Adolescence
3 credits
Social, psychological, and physical aspects of adolescence in modern societies. Social and cultural expectations and influences on adolescents stemming from the family, peers, school, and the community.
Prerequisite/Restriction: Junior standing and FCHD 1500.

Semester(s) Traditionally Offered: Fall, Spring
FCHD 3540 - Adult Development and Aging
3 credits
Interdisciplinary perspective on developmental issues in adulthood and old age. Biosocial, cognitive, and psychosocial changes in older adults in family, community, cultural, and socio-political contexts.
Prerequisite/Restriction: Junior standing and FCHD 1500.

Semester(s) Traditionally Offered: Spring
FCHD 3550 - Infant Lab
1 credit
Practical experience in laboratory setting with children birth through two years of age. Lab supplements/complements course content of FCHD 3510.
Prerequisite/Restriction: Junior standing, FCHD 1500, FCHD 2610.
Corequisite: FCHD 3510.

Semester(s) Traditionally Offered: Fall, Spring
FCHD 3560 - Middle Childhood Lab
1 credit
Practical experience in laboratory setting with children in the middle years. Lab supplements/complements course content of FCHD 3520.
Prerequisite/Restriction: Junior standing, FCHD 1500, FCHD 2610.
Corequisite: FCHD 3520.

Semester(s) Traditionally Offered: Fall, Spring
FCHD 4220 - Family Crises and Interventions
3 credits
Normative and nonnormative stressors provoking individual and family crises. Principles and techniques for family interventions.
Prerequisite/Restriction: Junior standing, FCHD 2400.

Semester(s) Traditionally Offered: Fall
FCHD 4230 - Family and Social Policy
3 credits
Local, state, and federal policies with implications for individuals and families across the lifespan.
Prerequisite/Restriction: Junior standing, FCHD 2400.
Semester(s) Traditionally Offered: Fall, Spring

FCHD 4240 - Social and Family Gerontology  
3 credits

Social, cultural, and family contexts of aging. Intergenerational family relations in later life. Social policies and services affecting older adults and their families.

Prerequisite/Restriction: Junior standing and FCHD 2400, FCHD 3540.

Semester(s) Traditionally Offered: Fall

FCHD 4330 - Family Finance Career Seminar  
1 credit

Exploration of career options through readings, guest lecturers, interviews of practitioners, and development of an internship and career plan.

Prerequisite/Restriction: FCHD 3350.

Semester(s) Traditionally Offered: Fall

FCHD 4350 - Advanced Family Finance  
3 credits

Managing personal and family financial resources to achieve goals relating to investments, retirement, and estate planning.

Prerequisite/Restriction: FCHD 3350.

Semester(s) Traditionally Offered: Spring

FCHD 4400 - Research Practicum in FCHD  
1-12 credits

Provides placement experience in applying skills and knowledge in a research setting.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4460 - Financial Counseling  
3 credits

Development and application of financial counseling and presentation skills. Analysis of various financial problems and development of appropriate solutions and resources.

Prerequisite/Restriction: FCHD 3350, FCHD 3450. Enrollment limited to FCHD majors with a Family Finance Emphasis.

Semester(s) Traditionally Offered: Spring

FCHD 4550 - Preschool Methods and Curriculum  
3 credits

Use of materials, equipment, and activities in planning and implementing curricula for preschool children.

Prerequisite/Restriction: Junior standing and FCHD 1500.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 4800 - Senior Project  
3 credits

Project in area of student’s choice, selected and prepared in conjunction with an advisor from the FCHD faculty.

Prerequisite/Restriction: Senior standing and enrollment in FCHD major.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4820 - Current Issues in Family Life Studies  
3 credits

Explores history, purpose, impact, and contemporary status of family life studies. Discussion of current issues, policies, ethics, and approaches to family life studies. Development of empirically-informed and methodologically-sound plans and strategies.

Prerequisite/Restriction: Approval of advisor. Enrollment limited to Family Life Studies majors.

Campus: Online.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4830 - Senior Capstone Project  
3 credits

Capstone course for the family life studies format. Prepares students as professionals, while providing professional development through research, teaching, and outreach. Development documented in portfolio,
Prerequisite/Restriction: Approval of advisor. Enrollment limited to Family Life Studies majors. Background check required.

Campus: Online.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4900 - Pre-Practicum Skills (CI)
CI Communications Intensive
3 credits

Acquisition and integration of interpersonal skills, conflict resolution, and ethical decision-making for active participation in FCHD practica.

Prerequisite/Restriction: Junior standing, FCHD 2610, FCHD 3100, and fulfillment of Communications Literacy CL2 requirement. Enrollment limited to FCHD majors only.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 4940 - Gerontology Integration
1 credit

Integration of gerontology coursework and practicum. Written paper requires approval by FCHD Gerontology Coordinator.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4950 - Practicum: Consumer Science
1-12 credits

Placement experience in applying skills and knowledge in community agencies. The application deadlines are: February 15 for fall semester, June 15 for spring semester, and October 15 for summer semester.

Prerequisite/Restriction: Junior standing, completion of 24 credits in major. Enrollment limited to Family and Consumer Sciences majors who have at least junior standing, or to FCHD majors with a Family Finance Emphasis, who have completed at least 30 credits in the major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4960 - Practice Teaching in Child Development Laboratories
3 or 6 credits

Intensive teaching practicum in the Child Development Lab program. Students must sign up at least three full semesters in advance in FL 205.

Prerequisite/Restriction: Junior standing, FCHD 4550, and permission of department.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4970 - Gerontology Practicum
1-3 credits

Placement experience in gerontology settings. Practical opportunities to apply theory, knowledge, and skills. Apply one semester in advance. The application deadlines are: February 15 for fall semester, June 15 for spring semester, and October 15 for summer semester.

Prerequisite/Restriction: Senior standing and FCHD 3540, FCHD 4240.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4980 - Practicum
1-12 credits

Placement experience in applying skills and knowledge in community agencies. The application deadlines are: February 15 for fall semester, June 15 for spring semester, and October 15 for summer semester.

Prerequisite/Restriction: Junior standing and FCHD 4900; must have completed a total of 30 FCHD credits and the practicum application. Enrollment limited to FCHD majors only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 4990 - Readings and Conference
1-6 credits

Directed independent study of topics preselected by faculty and student.

Prerequisite/Restriction: Permission of instructor required before registration.
FCHD 5340 - Housing Finance and Regulations
3 credits

Exploration of mortgage loan industry, with in-depth examination of various lending products and procedures. Study of regulations affecting housing, including Fair Housing, predatory lending, and mortgage default.

Prerequisite/Restriction: FCHD 3340, FCHD 3350. Enrollment limited to students in the Family Finance emphasis and FCS majors.

Semester(s) Traditionally Offered: Spring

FCHD 5540 - Family Life Education Methods
3 credits

Introductory course focused on theory, principles, and skills necessary to prepare, present, and evaluate family life education programs and workshops.

Prerequisite/Restriction: Junior standing, FCHD 1500 and FCHD 2400. Enrollment limited to FCHD majors only.

Semester(s) Traditionally Offered: Fall, Spring

FCHD 5950 - Financial Counseling Practicum
3 credits

Students apply their knowledge by conducting one-on-one counseling sessions, observing other counselors, and teaching workshops. Students develop valuable management, communication, and counseling skills. Students should sign up as far in advance as possible after being admitted to the Family Finance emphasis. The application deadlines are: February 15 for fall semester, June 15 for spring semester, and October 15 for summer semester.

Prerequisite/Restriction: FCHD 4220, FCHD 4460, FCHD 5340 (may be taken concurrently). Enrollment limited to FCHD majors with a Family Finance Emphasis.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 6010 - Survey: Family Relations
3 credits

Overview and critique of substantive areas of research in marriage and the family.

Prerequisite/Restriction: FCHD 2400 or equivalent.

Semester(s) Traditionally Offered: Spring

FCHD 6020 - Survey of Human Development Research
3 credits

Examines contemporary research and developmental issues. Highlights social development from social-historical and social change framework.

Prerequisite/Restriction: FCHD 1500 or equivalent.

Semester(s) Traditionally Offered: Spring

FCHD 6030 - Research Methods
3 credits

Overview of methods for studying family relations and human development, including sampling, measurement, research design, and data analyses/interpretations.

Prerequisite/Restriction: FCHD 3130 or equivalent. Research proposal required.

Semester(s) Traditionally Offered: Spring

FCHD 6040 - Family Economics
3 credits

Examination of contemporary research and current issues in family economics.

Semester(s) Traditionally Offered: Spring
FCHD 6050 - Consumer Science Theories  
3 credits  
Critical review and assessment of theories in consumer science.  
Semester(s) Traditionally Offered: Fall

FCHD 6060 - Human Development Theories  
3 credits  
Overview of major developmental theories, including contributions from philosophical, personality, and learning theories. Explores epistemology, ethology, and systems theories relating to human development.  
Prerequisite/Restriction: FCHD 1500 or equivalent.  
Semester(s) Traditionally Offered: Fall

FCHD 6070 - Family Theories  
3 credits  
Critical review and assessment of theories in family research, along with construction and application of family theory.  
Prerequisite/Restriction: FCHD 2400 or equivalent.  
Semester(s) Traditionally Offered: Fall

FCHD 6080 - Professional Development  
3 credits  
Capstone course for graduate students, emphasizing issues related to professional development (e.g., grant writing, publishing, vitae development, interview skills, developing a research agenda, networking, ethics, professional conduct, teaching, etc.).  
Cross-listed as: FCHD 7080.  
Semester(s) Traditionally Offered: Spring

FCHD 6210 - Cultural Diversity in Families  
3 credits  
Covers selected issues related to family patterns and functions associated with ethnicity, gender, and social class, as well as additional topics related to expertise of instructor.  
Cross-listed as: FCHD 7210.  
Semester(s) Traditionally Offered: Fall

FCHD 6220 - Interpersonal Family Relationships  
3 credits  
In accordance with expertise of instructor, covers selected interpersonal issues in intimate and family relations.  
Cross-listed as: FCHD 7220.  
Semester(s) Traditionally Offered: Fall

FCHD 6230 - Family and Social Policy  
3 credits  
In accordance with expertise of instructor, covers issues and implications of local, state, and federal policies relating to individuals and families across the lifespan.  
Cross-listed as: FCHD 7230.  
Semester(s) Traditionally Offered: Spring

FCHD 6310 - Survey of Marriage and Family Therapy  
3 credits  
Overview of marriage and family therapy models. Historical development of marriage and family therapy as a profession and a practice.  
Prerequisite/Restriction: Enrollment limited to FCHD Marriage and Family Therapy master's students only.  
Semester(s) Traditionally Offered: Fall

FCHD 6320 - Foundations of Marriage and Family Therapy  
3 credits  
Epistemological and philosophical directions of marriage and family therapy, beginning with early applications of
General Systems theories and cybernetics through constructivist and postmodern frameworks.

Semester(s) Traditionally Offered: Fall
FCHD 6330 - Traditional Marriage and Family Therapy Practice
3 credits

Traditional approaches to marriage and family therapy, with a focus on individual and couple issues, including sexuality and personality issues within a systems framework.

Prerequisite/Restriction: FCHD 3110 or equivalent.

Semester(s) Traditionally Offered: Spring
FCHD 6340 - Marriage and Family Therapy Practice II: Contemporary Approaches
3 credits

Contemporary approaches to marriage and family therapy. Focuses on couple and family interaction issues, including conflict, parenting, and other common family problems.

Semester(s) Traditionally Offered: Spring
FCHD 6350 - Clinical Practice in Marriage and Family Therapy
3 credits

Selected clinical issues in marriage and family therapy.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring
FCHD 6360 - Ethical and Professional Development
3 credits

Ethical, legal, and professional issues in marriage and family therapy.

Semester(s) Traditionally Offered: Fall
FCHD 6370 - Assessment in Marriage and Family Therapy
3 credits

Development, application, and interpretation of major individual and family assessment techniques used in marriage and family therapy practice and research.

Semester(s) Traditionally Offered: Spring
FCHD 6380 - Survey of Marital and Family Therapy Research
3 credits

Examines contemporary research issues in marriage and family therapy.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring
FCHD 6390 - Practicum in Marriage and Family Therapy
1-6 credits

Supervised clinical experience in marriage and family therapy. May be graded Pass/Fail, as determined by instructor or section.

Prerequisite/Restriction: Admission to Marriage and Family Therapy specialization and permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
FCHD 6400 - Topical Seminar in Consumer Science
3 credits

Selected issues in consumer science.

Cross-listed as: FCHD 7400.

Repeatable for credit.

Semester(s) Traditionally Offered: Will vary
FCHD 6410 - Family Financial Problems
3 credits

Review of research on family financial problems, including bankruptcy and related public policies.

Semester(s) Traditionally Offered: Spring
FCHD 6420 - Housing Policy and Issues
3 credits

Housing market forces and housing policies at the local, state, national, and international levels. Additional assignments required for FCHD 7420.
Cross-listed as: FCHD 7420.

Semester(s) Traditionally Offered: Fall

FCHD 6430 - Economics of Aging
3 credits

Explores economic behavior of the elderly, including financial preparation and security, health-wealth connection, labor force behavior, intergenerational transfers and supports, and living arrangements. Additional assignments required for FCHD 7430.

Cross-listed as: FCHD 7430

Semester(s) Traditionally Offered: Fall

FCHD 6500 - Topical Seminar: Human Development
3 credits

Selected issues in human development. Repeatable for credit.

Semester(s) Traditionally Offered: Will vary

FCHD 6510 - Development in Infancy
3 credits

Covers developmental period from birth to age three and the major developmental domains of physical, neurological, perception, cognition, language, emotion, and social development. Additional topics discussed relating to expertise of instructor. To receive credit for FCHD 7510, students must fulfill additional requirements.

Cross-listed as: FCHD 7510.

Semester(s) Traditionally Offered: Fall

FCHD 6520 - Development in Childhood
3 credits

Covers developmental period from age 3 to about age 12. Focuses on major developmental domains of physical, cognitive, and emotional/social development across context related to expertise of instructor. To receive credit for FCHD 7520, students must fulfill additional requirements.

Cross-listed as: FCHD 7520.

Semester(s) Traditionally Offered: Fall

FCHD 6530 - Development in Adolescence
3 credits

Covers developmental period from age 12 to about age 20. Focuses on major developmental domains associated with adolescence, including physical, cognitive, and emotional/social development across context related to expertise of instructor. To receive credit for FCHD 7530, students must fulfill additional requirements.

Cross-listed as: FCHD 7530.

Semester(s) Traditionally Offered: Spring

FCHD 6900 - Topical Seminar in Family, Consumer, and Human Development
1-3 credits

Selected issues in family, consumer, and human development. Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 6910 - Parenting
3 credits

Covers topic of parenting from perspectives of human development, family relations, and consumer science. Specific topics selected within each of these perspectives. To receive credit for FCHD 7910, students must fulfill additional requirements.

Cross-listed as: FCHD 7910.

Semester(s) Traditionally Offered: Spring

FCHD 6920 - Aging
3 credits

Explores research on aging from three perspectives: (1) individual, (2) marital/family relations, and (3) family financial/economic issues. Applies gerontology research to solve problems from each perspective.

Cross-listed as: FCHD 7920.

Semester(s) Traditionally Offered: Fall
FCHD 6960 - Readings/Conference
1-6 credits
Directed independent study of topics preselected by faculty and student.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 6970 - Thesis Research
1-6 credits
Research for master's thesis, arranged with advisor.
Prerequisite/Restriction: Permission of advisor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 6980 - Graduate Practicum
1-9 credits
Application of family and human development skills and knowledge in a supervised setting, as arranged by advisor.
Prerequisite/Restriction: Permission of advisor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 6990 - Continuing Graduate Advisement
1-9 credits
Continuing registration to complete thesis requirements.
Prerequisite/Restriction: Six credits of FCHD 6970.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

FCHD 7050 - Advanced Research and Theory in Consumer Science
3 credits
Critical review of research and theories in consumer science.
Prerequisite/Restriction: FCHD 6050.
Semester(s) Traditionally Offered: Fall

FCHD 7060 - Advanced Research and Theory in Human Development
3 credits
Critical review of research and theories in human development.
Prerequisite/Restriction: FCHD 6060 or equivalent.
Semester(s) Traditionally Offered: Spring

FCHD 7070 - Advanced Research/Theory in Family Relations
3 credits
Critical review of research and theories in marriage and family relationships.
Prerequisite/Restriction: FCHD 6070 or equivalent.
Semester(s) Traditionally Offered: Spring

FCHD 7080 - Professional Development
3 credits
Capstone course for graduate students, emphasizing issues related to professional development (e.g., grant writing, publishing, vitae development, interview skills, developing a research agenda, networking, ethics, professional conduct, teaching, etc.).
Cross-listed as: FCHD 6080.
Semester(s) Traditionally Offered: Spring

FCHD 7200 - Topical Seminar in Family Relations
3 credits
Selected issues for advanced professionals in family relations.
Repeatable for credit.
Semester(s) Traditionally Offered: Will vary

FCHD 7210 - Cultural Diversity in Families
3 credits
Covers selected issues related to family patterns and functions associated with ethnicity, gender, and social class, as well as additional topics related to expertise of instructor.

Cross-listed as: FCHD 6210.

Semester(s) Traditionally Offered: Fall

FCHD 7220 - Interpersonal Family Relationships
3 credits

In accordance with expertise of instructor, covers selected interpersonal issues in intimate and family relations.

Cross-listed as: FCHD 6220.

Semester(s) Traditionally Offered: Fall

FCHD 7230 - Family and Social Policy
3 credits

In accordance with expertise of instructor, covers issues and implications of local, state, and federal policies relating to individuals and families across the lifespan.

Cross-listed as: FCHD 6230.

Semester(s) Traditionally Offered: Spring

FCHD 7400 - Topical Seminar in Consumer Science
3 credits

Selected issues for advanced professionals in consumer science.

Prerequisite/Restriction: FCHD 6400.

Cross-listed as: FCHD 6400.

Repeatable for credit.

Semester(s) Traditionally Offered: Will vary

FCHD 7510 - Development in Infancy
3 credits

Covers developmental period from birth to age three and the major developmental domains of physical, neurological, perception, cognition, language, emotion, and social development. Additional topics discussed relating to expertise of instructor. To receive credit for 7510, students must fulfill additional requirements.

Cross-listed as: FCHD 6510.

Semester(s) Traditionally Offered: Fall

FCHD 7520 - Development in Childhood
3 credits

Covers developmental period from age 3 to about age 12. Focuses on major developmental domains of physical, cognitive, and emotional/social development across context related to expertise of instructor. To receive credit for 7520, students must fulfill additional requirements.

Cross-listed as: FCHD 6520.

Semester(s) Traditionally Offered: Fall
FCHD 7530 - Development in Adolescence
3 credits
Covers developmental period from age 12 to about age 20. Focuses on major developmental domains associated with adolescence, including physical, cognitive, and emotional/social development across context related to expertise of instructor. To receive credit for 7530, students must fulfill additional requirements.
Cross-listed as: FCHD 6530.
Semester(s) Traditionally Offered: Spring

FCHD 7900 - Topical Seminar in Family, Consumer, and Human Development
1-3 credits
Selected issues for advanced professionals in family, consumer, and human development.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 7910 - Parenting
3 credits
Covers topic of parenting from perspectives of human development, family relations, and consumer science. Specific topics selected within each of these perspectives. To receive credit for 7910, students must fulfill additional requirements.
Cross-listed as: FCHD 6910.
Semester(s) Traditionally Offered: Spring

FCHD 7920 - Aging
3 credits
Explores research on aging from three perspectives: (1) individual, (2) marital/family relations, and (3) family financial/economic issues. Applies gerontology research to solve problems from each perspective.
Cross-listed as: FCHD 6920.
Semester(s) Traditionally Offered: Fall

FCHD 7960 - Readings/Conference
1-6 credits
Directed independent study of topics preselected by faculty and student.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 7970 - Dissertation Research
1-9 credits
Research for dissertation, as arranged with advisor.
Prerequisite/Restriction: Permission of advisor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 7980 - Advanced Graduate Practicum
1-9 credits
Professional supervision of doctoral students, applying general principles from the study of research in family and human development.
Prerequisite/Restriction: Permission of advisor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCHD 7990 - Continuing Graduate Advisement
1-9 credits
Continuing registration to complete dissertation requirements.
Prerequisite/Restriction: Twenty credits of FCHD 7970.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 1140 - Introductory Sewing
2 credits
Introductory-level sewing techniques geared toward beginning sewing students. Includes use of sewing machines and sergers. No previous sewing experience
Pass/Fail only.

Semester(s) Traditionally Offered: Fall

FCSE 2040 - Clothing Production Principles
3 credits

Intermediate-level clothing construction techniques, pattern alteration and fitting, and use of sewing machine and serger. Previous sewing experience recommended.

Prerequisite/Restriction: Enrollment limited to FCSE majors only, or with permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

FCSE 2510 - Orientation to Family and Consumer Sciences Education
3 credits

Overview of the integrated Family and Consumer Sciences Education system. Students learn how family and human development, nutrition, finance, clothing production, and consumerism is planned, implemented, and evaluated through FCSE programs in the public schools.

Prerequisite/Restriction: Enrollment limited to FCSE majors only.

Semester(s) Traditionally Offered: Spring

FCSE 3030 - Textile Science (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
4 credits

Study of fibers, yarns, fabric constructions, and finishes related to suitability for desired end uses. Use of mathematics and descriptive statistics for reporting and interpreting data collected from lab experiments. Lectures and laboratory.

Prerequisite/Restriction: Must be an FCSE major and have completed at least 30 credits and C- or better in a QL course or permission of instructor.

Semester(s) Traditionally Offered: Spring

FCSE 3040 - Advanced Clothing Production Principles
3 credits

Flat pattern design and tailoring techniques.

Prerequisite/Restriction: FCSE 2040.

Semester(s) Traditionally Offered: Fall

FCSE 3080 - Dress and Humanity (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Explores relationship of dress and humanity. Collaborative group assignments, discussions of history related to dress, cultures as related to dress, and the influence dress has in today's society.

Prerequisite/Restriction: Completion of course having University Studies Breadth Humanities (BHU) designation.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 3300 - Family and Consumer Sciences Education Clinical Experience I
1 credit

Provides on-site experience for students to model a secondary family and consumer sciences education teacher. Students are expected to learn teaching and classroom management principles.

Prerequisite/Restriction: Admission to Secondary Education Professional Education Component.

Corequisite: FCSE 3300.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

FCSE 3400 - Family and Consumer Sciences Education Methods I
3 credits

Methods of successfully planning and maintaining family and consumer sciences work education programs in secondary schools. History and philosophy of applied technology education.

Prerequisite/Restriction: Admission to Secondary Education.

Corequisite: FCSE 3300 and 3400.
Semester(s) Traditionally Offered: Spring

FCSE 3790 - Housing and Interior Design Teaching Methods
3 credits

Online course mirroring Utah’s state standards for housing and interior design. Students review housing and interior design content, and then generate teaching strategies appropriate for teaching that content at the high school level.

Prerequisite/Restriction: ID 1790, FCSE 3400.
Enrollment limited to FCSE majors only.

Semester(s) Traditionally Offered: Fall, Spring

FCSE 4250 - Internship in Family and Consumer Sciences Education
1-12 credits

Midmanagement-level experience in a position approved by the department. One credit earned for each 60 hours of experience.

Prerequisite/Restriction: Junior standing.
Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 4300 - Family and Consumer Sciences Education Clinical Experience II
1 credit

Provides on-site experience for students to model a secondary family and consumer sciences education teacher. Students expected to learn teaching and classroom management principles.

Prerequisite/Restriction: FCSE 3300, FCSE 3400.
Pass/Fail only.

Semester(s) Traditionally Offered: Spring

FCSE 4400 - Family and Consumer Sciences Education Methods II
3 credits

Development of competency in curriculum planning, and skill and sensitivity in the use of various teaching-learning strategies and resources. Includes assessment for vocational education.

Prerequisite/Restriction: FCSE 3300, FCSE 3400.

Semester(s) Traditionally Offered: Fall

FCSE 4900 - Independent Study in Family and Consumer Sciences Education
1-5 credits

Prior to registration, students must identify a project of interest and discuss the project with instructor.

Prerequisite/Restriction: Junior standing and approval of faculty.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 5500 - Student Teaching Seminar
2 credits

Taken during student teaching in secondary schools to complement school experience. Focuses upon problems arising during student teaching. Includes teaching plans, procedures, adaptive classroom practices, and evaluation.

Prerequisite/Restriction: FCSE 4300, FCSE 4400.
Corequisite: FCSE 5630.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 5550 - Continuing Education in Family and Consumer Sciences Education
0.5-3 credits

Concentrated offerings to increase knowledge, skills, or creative expression in current Family and Consumer Sciences Education topics or curriculum areas.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 5630 - Student Teaching in Secondary Schools
10 credits

After assignment to a cooperating family and consumer sciences educator, students are given professional
responsibilities associated with teaching.

Prerequisite/Restriction: FCSE 4300, FCSE 4400.

Corequisite: FCSE 5500.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

FCSE 6140 - Evaluation and Ethics of Research in Education and Extension
3 credits

Investigation and reporting of current issues related to career and technical education and extension education research.

Semester(s) Traditionally Offered: Fall

FCSE 6180 - Administration and Program Planning
3 credits

Application of research and theory of administration and program planning to define and clarify the role of leadership in extension and formal education situations.

Semester(s) Traditionally Offered: Fall

FCSE 6220 - Volunteer Programs and Partnerships
3 credits

Explores the use and management of volunteers and partnerships in the development and implementation of extension, nonformal, and outreach education programs.

Semester(s) Traditionally Offered: Summer

FCSE 6300 - Advanced Teaching Strategies
3 credits

Explores advanced application of teaching strategies and theory, as well as the creation of innovative classroom materials.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

FCSE 6320 - Classroom Management, Student Motivation and Guidance
3 credits

Multiple-strategy approach for increasing teachers’ effectiveness and satisfaction in classroom management and discipline.

Semester(s) Traditionally Offered: Summer

FCSE 6340 - Curriculum Development, Testing and Evaluation
3 credits

Examines current trends in curriculum and program development related to specific educational outcomes. Includes curriculum development process.

Semester(s) Traditionally Offered: Summer

FCSE 6380 - Supervision and Mentoring
3 credits

Explores the role of supervision and mentoring in the success of teaching professionals. Reviews four components of professional practice. Examines techniques for observation and conferencing. Students reflect upon their own teaching/mentoring experiences and the impact upon professional practice.

Semester(s) Traditionally Offered: Spring

FCSE 6460 - Graduate Topics in Family and Consumer Sciences Education
1-3 credits

Surveys selected topics in family and consumer sciences education. Topics will be unique each time course is offered.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

FCSE 6900 - Graduate Independent Study in Career and Technical Education
1-4 credits

Independent study in an area of family and consumer sciences education. For approval of project and allowable credits, students should check with committee.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FCSE 6950 - Graduate Internship
1-6 credits
Designed for graduate students who wish to acquire or upgrade their experience in an occupational field related to their area of study. One credit earned for each 60 hours of experience. Repeatable for up to 6 credits.

Prerequisite/Restriction: Permission of instructor prior to enrollment.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Finance

FIN 3400 - Corporate Finance (QI)
QI Quantitative Intensive
3 credits

How corporations raise and manage capital. Study of modern financial principles, methods, policies, and institutions. Corporate organization, creation, and reorganization.

Prerequisite/Restriction: MATH 1050; ACCT 2010; choose one statistics course from: STAT 1040, STAT 2300, STAT 3000, or PSY 2800; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FIN 4300 - International Finance
3 credits

Overview of international financial management, including international financial markets, exchange rate behavior, and financing international trade.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

FIN 4410 - Financial Institutions
3 credits

Role of domestic and international financial institutions in supplying services to consumers, businessmen, and government.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

FIN 4420 - Insurance
3 credits

Studied from the standpoint of insurance services consumers, course explores types of life, property, and casualty insurance contracts; nature and uses of life and property insurance; and the organization, management, and government supervision of insurance companies.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

FIN 4430 - Real Estate Finance
3 credits

Covers theory, principles, and techniques of real estate investment, emphasizing present value and cash-flow approaches to real estate investment decisions.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

FIN 4450 - Fundamentals of Valuation
3 credits

Augments and extends the basic equity valuation material in corporate finance to the specific and complex setting of valuing equity securities. Covers valuation models (i.e., dividend discount model) as well as multiples and technical approaches.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

FIN 4460 - Investments
3 credits

Provides an understanding of security analysis and portfolio management. Market operations; risk and
return; stock, bond, and option analysis; and portfolio theory and creation.

Prerequisite/Restriction: Grade of B- (2.67) or better in FIN 3400; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

FIN 4470 - Investment Practicum I
1.5 credits

Students manage an actual portfolio. Topics include portfolio management and security analysis within the current macroeconomic context.

Prerequisite/Restriction: FIN 3400.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

FIN 4475 - Investment Practicum II
1.5 credits

Students manage an actual portfolio. Topics include portfolio management and security analysis within the current macroeconomic context.

Prerequisite/Restriction: FIN 3400, FIN 4470.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

FIN 4480 - Portfolio Theory and Risk Management
3 credits

Advanced topics in investment instruments, portfolio management, markets, and financial modeling techniques impacting financial decisions.

Prerequisite/Restriction: FIN 3400.

Semester(s) Traditionally Offered: Fall

FIN 4490 - Hedge Funds and Private Equity
3 credits

Focuses on the activities of hedge funds and private equity, their influence on corporate decision-making, and corporate measures taken to counter threats and exploit opportunities represented by these investors. Also analyzes competition and cooperation between investment banks and private equity and hedge funds.

Prerequisite/Restriction: FIN 3400.

Semester(s) Traditionally Offered: Spring

FIN 4495 - Investment Banking
3 credits

Focuses on the organizational structure of investment banking firms, products, risks, earnings, regulations, innovations, and competition. Analyzes banking, sales, and trading, along with other investment banking activities. Reviews innovative Wall Street securities and advisory products.

Prerequisite/Restriction: FIN 3400.

Semester(s) Traditionally Offered: Fall

FIN 4900 - Independent Research and Reading
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

FIN 4950 - Senior Honors Thesis/Project
3 credits

Creative project that will then be written up, and presented, as a Senior Thesis as required for an Honors Plan.

Semester(s) Traditionally Offered: Spring

FIN 5350 - Quantitative Financial Modeling and Applications
3 credits

Introduction to quantitative methods and computer applications applicable in financial modeling. Covers financial statement modeling, asset allocation, risk analysis, scenario generation, and option pricing through the introduction and proper uses of spreadsheet modeling, decision analysis, simulation, and optimization techniques.

Prerequisite/Restriction: FIN 3400 and MIS 2100.

Cross-listed as: MIS 5350.

Semester(s) Traditionally Offered: Spring
FIN 6300 - Fixed Income
3 credits

Fixed income expertise is a crucial skill set for success in a financial career. Course topics include interest rates, term structure, risk, valuation, and credit analysis of the major market segments (treasuries, corporates, asset-backed and international bonds).

Semester(s) Traditionally Offered: Spring

FIN 6320 - Computational Methods in Finance
3 credits

This course is an introduction to the use of computational tools that are useful in the implementation of quantitative financial theories. As such, it's very applied in nature. The focus will be on the implementation of ideas that you have learned in your courses such as econometrics, investments, and derivatives.

Semester(s) Traditionally Offered: Spring

FIN 6410 - Corporate Finance
3 credits

Among other financial principles, this course covers multiperiod capital budgeting under uncertainty, real options analysis, optimal capital structures, acquisition valuation, and optimal dividend policy.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

Semester(s) Traditionally Offered: Fall

FIN 6420 - Financial Problems
3 credits

Corporate finance case course, dealing with problems in working capital management, capital budgeting, cost of capital problems, and corporate restructuring.

Semester(s) Traditionally Offered: Spring

FIN 6440 - Financial Decision Making
3 credits

Presentation of financial modelling techniques impacting firm decisions.

Semester(s) Traditionally Offered: Spring

FIN 6460 - Investment Analysis
3 credits

This course presents analytical tools for quantitative investment analysis. Using SAS, we examine topics including fundamental analysis, return predictability, portfolio theory, and implications from market efficiency.

Semester(s) Traditionally Offered: Spring

FIN 6470 - Derivative Markets
3 credits

This course covers forwards, futures, swaps and options. By the end of the course, students will have a solid understanding of how these products work, how they are used, how they are priced and how financial institutions trade them for the purposes of speculation and hedging.

Semester(s) Traditionally Offered: Spring

French

FREN 1010 - French First Year I
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: Not open to those with more than one year high school French or equivalent.

Semester(s) Traditionally Offered: Fall

FREN 1020 - French First Year II
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: FREN 1010 or equivalent.
Semester(s) Traditionally Offered: Spring
FREN 1030 - Beginning French for Everyday Communication
3 credits

Development of basic conversational skills, communication strategies, and cultural knowledge through immersion in a French-speaking environment. Cannot be substituted for FREN 1010 or FREN 1020.

Pass/Fail only.
Campus: Offered only through USU's study abroad program in France.

Semester(s) Traditionally Offered: Summer
FREN 1050 - French First Year I Study Abroad
4 credits

Intensive first-year language course designed to increase proficiency in the four language skills and in intercultural knowledge.

Prerequisite/Restriction: Not open to those with more than one year high school French or equivalent.

Campus: Offered only through USU's study abroad program in France.

Semester(s) Traditionally Offered: Summer
FREN 1150 - French First Year II Study Abroad
4 credits

Intensive first-year language course designed to increase proficiency in the four language skills and in intercultural knowledge.

Prerequisite/Restriction: FREN 1010 or FREN 1050.

Campus: Offered only through USU's study abroad program in France.

Semester(s) Traditionally Offered: Summer
FREN 1820 - Beginning Independent Study: Experiencing Paris
2 credits

Beginning-level independent study project focusing on the city of Paris, its history, culture, and patterns of life.

Campus: Offered only through USU's summer study abroad program in France.

Semester(s) Traditionally Offered: Summer
FREN 2010 - French Second Year I
4 credits

Continued development of communicative competencies in the four language skills, with more emphasis on communication through reading and writing and continued exposure to cultures and customs.

Prerequisite/Restriction: FREN 1020 or equivalent.

Semester(s) Traditionally Offered: Fall
FREN 2020 - French Second Year II
4 credits

Continued development of communicative competencies in the four language skills, with more emphasis on communication through reading and writing and continued exposure to cultures and customs.

Prerequisite/Restriction: FREN 2010 or equivalent.

Semester(s) Traditionally Offered: Spring
FREN 2030 - Intermediate French for Everyday Communication
3 credits

Development of intermediate-level conversational skills, communication strategies, and cultural knowledge through immersion in a French-speaking environment. Cannot be substituted for FREN 2010 or FREN 2020.

Pass/Fail only.
Campus: Offered only through USU's study abroad program in France.

Semester(s) Traditionally Offered: Summer
FREN 2050 - French Second Year I Study Abroad
4 credits

Intensive second-year language course designed to increase proficiency in the four language skills and in intercultural knowledge, with more emphasis on communication through reading and writing.

Prerequisite/Restriction: FREN 1020 or equivalent.

Campus: Offered only through USU's study abroad program in France.
Semester(s) Traditionally Offered: Summer

FREN 2150 - French Second Year II Study Abroad
4 credits

Intensive second-year language course designed to increase proficiency in the four language skills and in intercultural knowledge, with more emphasis on communication through reading and writing. O.

Prerequisite/Restriction: FREN 2010 or FREN 2050 or equivalent.

Campus: Offered only through USU's summer study abroad program in France.

FREN 2820 - Intermediate Independent Study: Experiencing Paris
2 credits

Intermediate-level independent study project focusing on the city of Paris, its history, culture and patterns of life.

Campus: Offered only through USU's summer study abroad program in France.

FREN 2880 - Individual Readings
3 credits

Individual study of selected readings in French. Cannot be substituted for FREN 2010 or FREN 2020.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

FREN 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Francophone culture will also be emphasized. Significant reading and work outside of class are required.

FREN 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Francophone culture will also be emphasized. Significant reading and work outside of class are required.

FREN 3030 - Advanced French for Everyday Communication
3 credits

Development of advanced conversational skills, communication strategies, and cultural knowledge through immersion in a French-speaking environment. Cannot be applied to requirements for the major or minor in French.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

Pass/Fail only.

Campus: Offered only through USU's summer study abroad program in France.

FREN 3060 - French Conversation (CI)
CI Communications Intensive
3 credits

Designed to develop effective communication skills, to increase vocabulary, and to teach students to express and justify facts, opinions, ideas, and emotions in French. Not open to students with foreign experience. Designed for students who have not had extended residence in a francophone country or extended exposure to a francophone environment.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 3070 - Advanced French Study Abroad I
4 credits

Intensive upper-division language course combining grammar review, phonetics, advanced conversation and composition, and the study of culture, with an emphasis on current affairs.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

Campus: Offered only through USU's summer study abroad program in France.
FREN 3080 - Advanced French Study Abroad II
4 credits
Intensive upper-division language course combining grammar review, phonetics, advanced conversation and composition, and the study of culture, with an emphasis on current affairs.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

Campus: Offered only through USU's summer study abroad program in France.
Semester(s) Traditionally Offered: Summer

FREN 3090 - French Intermediate Written Communication (CI)
CI Communications Intensive
3 credits
Provides students with intensive practice in various types of writing (e.g., summary, description, narration, letter-writing, etc.) based on a process approach. Involves discussion, writing, and revising. Stresses grammar review.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 3500 - Topics in French Literature in Translation (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Reading, analysis, and discussion of important French literature in English translation. Topics and texts may vary. Course may be repeated for credit with different content.

Repeatable for credit.

FREN 3510 - Business French (CI)
CI Communications Intensive
3 credits
Study of vocabulary, idioms, and expressions used in French business communications and an introduction to French business practices.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 3550 - French Civilization (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Study of historical, social, political, economic, and cultural conditions and institutions of France from early to modern times.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 3570 - France Today
3 credits
Study of contemporary life in France, the French people, their daily habits, and their surroundings. What makes the French French. Extensive use of videos, films, and slides.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 3600 - Textual Analysis
3 credits
Introduction to the methods, terminology, and practice of textual analysis. Development of critical thinking and writing skills through the analysis of selected literary and nonliterary texts from different periods and genres, ranging from poetry, novels, and plays to film, painting, music, and art. Course may be repeated once for credit with different content.

Repeatable for credit.

FREN 3820 - Advanced Independent Study: Experiencing Paris
2 credits
Advanced-level independent study project focusing on the city of Paris, its history, culture, and patterns of life.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

Campus: Offered only through USU's summer study abroad program in France.
Semester(s) Traditionally Offered: Summer
FREN 3880 - Individual Readings
1-4 credits
Individual study of selected readings in French.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FREN 3900 - Topics in French and Francophone Studies
3 credits
Studies through literature, media, and film on specific topics or themes. Discussion, analysis, and interpretation of selected literary and/or nonliterary works. Occasionally taught in English.
Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.
Repeatable for credit.

FREN 4060 - Advanced French Conversation (CI)
CI Communications Intensive
3 credits
Designed for students who have already reached advanced proficiency in speaking through foreign experience, but need to continue the development of their conversational skills.
Prerequisite/Restriction: FREN 3060 or permission of instructor.

FREN 4090 - Advanced Written Communication (CI)
CI Communications Intensive
3 credits
Continued development of French written communication skills based on a process approach. Includes the more advanced concepts of French grammar and extensive writing practice in variety of genres.
Prerequisite/Restriction: FREN 3090 or permission of instructor.

FREN 4200 - Applied French Linguistics and Phonetics
3 credits
First part analyzes phonological and phonetic patterns of French. Second part deals with selected morphological and syntactic features of French.
Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 4520 - Information Technologies in French
3 credits
Practices, theoretical issues, and policy concerns of information technologies resulting from computers, networking, and videodisk. Use of computer with French programs. Taught in French.
Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

FREN 4610 - Period Studies in French Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Examination of a particular period or century. Involves close reading, discussion, analysis, and interpretation of selected literary and nonliterary texts. Sample topics include: The Medieval Period, The Renaissance, Classicism, Baroque, Romanticism, Naturalism, and Contemporary French Literature.
Prerequisite/Restriction: FREN 3600 or instructor's permission.

FREN 4620 - Genre Studies in French Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Examination of a particular genre or body of works from a variety of periods and authors (e.g., novel, play, poetry, short story, film). Involves close reading, discussion, analysis, and interpretation of selected literary and nonliterary texts. Sample topics include: Romance Novels from the Middle Ages to the Present, From Classical to Contemporary French Theatre, French poetry from Baudelaire to Ponge, The Nouveau Roman, New Wave French Cinema, and The Negritude Movement.
Prerequisite/Restriction: FREN 3600 or instructor’s permission.

FREN 4880 - Individual Readings
1-4 credits
Readings in scientific, technical, or literary French.
Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

FREN 4900 - Seminar in French and Francophone Studies
3 credits

In-depth exploration of issues central to understanding language, literature, and culture. Critical reading and viewing of written and nonwritten texts with emphasis on student presentations, independent research, and the completion of extended projects. Seminar topics may focus on authors, literary periods, important historical events and social movements, and aspects of francophone cultures. Used periodically for literature in translation.

Prerequisite/Restriction: FREN 2020 or demonstrate equivalent proficiency through testing.

Repeatable for credit.

FREN 4920 - French Language Tutoring
1 credit

Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.

Prerequisite/Restriction: FREN 2020 or permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

FREN 6200 - French Linguistics and Phonetics
3 credits

Analysis of selected phonological, morphological, syntactic, and semantic features of contemporary French, including a study of colloquial French, comparing pronunciation, vocabulary, and grammar with standard forms.

Prerequisite/Restriction: FREN 2020, another 3000-level or higher FREN course, or demonstrated proficiency through testing.

Geography

GEOG 1000 - Physical Geography (BPS)
BPS Breadth Physical Sciences
3 credits

Geographic analysis of physical processes and spatial distribution of natural elements (i.e., the atmosphere, hydrosphere, lithosphere, and biosphere).

Semester(s) Traditionally Offered: Fall

GEOG 1005 - Physical Geography Lab
1 credit

Laboratory exercises in natural physical geography. Provides initial field and laboratory experiences in the earth system. Required for all geography majors.

Prerequisite/Restriction: GEOG 1000 (may be taken concurrently.

Semester(s) Traditionally Offered: Fall

GEOG 1300 - World Regional Geography (BSS)
BSS Breadth Social Sciences
3 credits

Survey of world cultural regions, with an analysis of political, economic, and resource patterns in their physical setting.

Semester(s) Traditionally Offered: Fall

GEOG 1400 - Human Geography (BSS)
BSS Breadth Social Sciences
3 credits

Spatial study within selected socio-cultural settings, including cultural landscapes, rural-urban linkages, languages, religions, politics, and economic activities.

Semester(s) Traditionally Offered: Spring

GEOG 1800 - Introduction to Geographic Information Sciences
3 credits

Introduces students to background and theory behind global position systems and remote sensing. Through the use and development of maps, students learn to integrate information from different geographic sources. Includes
a weekly laboratory section.

Semester(s) Traditionally Offered: Fall

GEOG 1990 - Professional Orientation for Geography
1 credit

Introduction and orientation to careers in geography, geographic education, and related fields. Discussion of education, curricula, faculty, professional societies, and employment opportunities.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

GEOG 2130 - Population Geography
3 credits

Spatial analysis of demographic data emphasizing global distribution, population growth, measures of density, migration, settlement, and economic development.

Semester(s) Traditionally Offered: Spring

GEOG 3430 - Political Geography
3 credits

Study of relationship between Earth, people, and the state. Global political phenomena studied from a geographic perspective. Explores impact of natural resources territorial seas and the nature of the state.

Cross-listed as: POLS 3430.

GEOG 3610 - Geography of Rural/Urban Planning
3 credits

Analysis of the organization and interrelationships of urban-city and rural space. Emphasizes spatial planning of rural-urban environments to improve quality of life, internal structure of cities, and applied principles and practices of community planning. Field trips and applied class projects integrated into lectures and demonstrations.

Semester(s) Traditionally Offered: Fall

GEOG 4100 - Geographic Approaches to the Human-Environmental Relationship
3 credits

Introduces students to the study of human-environmental interactions from a geographic perspective, with special emphasis on the social and political dynamics of selected environmental problems and how these dynamics interrelate across different spatial and temporal scales.

Cross-listed as: GEOG 6100.

Semester(s) Traditionally Offered: Spring

GEOG 4120 - Environment and Development in Latin America (CI)
CI Communications Intensive
3 credits

Examines the changing environment and developmental geography of Latin America. Focuses on globalization throughout history, along with its impact on lives and environments in the region, varied and changing human-environment relationships, and processes of economic and social inequality.

Cross-listed as: GEOG 6120.

Semester(s) Traditionally Offered: Fall

GEOG 4140 - Violent Environments: Linking Ecology and Conflict in Sub-Saharan Africa
3 credits

Examines the relationship between violent conflict and natural resources, with particular attention given to human rights and political ecology perspectives. Through specific cases, conflict resources are explored, along with the threat they pose to national, regional, and global security. Also includes discussion of the diverse actors that profit from the persistence of conflict and civil unrest.

Cross-listed as: GEOG 6140.

Semester(s) Traditionally Offered: Spring

GEOG 4210 - Geography of Utah
3 credits

Applies principles and methods of physical, cultural, and human-environment geography to the study of Utah's people, places, and environments. Includes opportunities to build skills in GIS mapping, field studies of biophysical and social phenomena, and other forms of geographic inquiry.
Semester(s) Traditionally Offered: Summer

GEOG 4220 - International Regional Geography
3 credits

Critical analysis and synthesis of demographic, environmental, political, economic, and cultural characteristics of world regions, as viewed in the context of human and physical processes at continental to global scales. Can be repeated for credit as different regions are covered.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

GEOG 4300 - Geography Education Classroom Practicum
1-3 credits

Allows geography education students to participate in actual geography classroom teaching with experienced geography teachers. Students observe, work with individuals and groups of students, team-teach lesson(s) with the teacher, and self-teach individual lesson(s).

Cross-listed as: GEOG 6300.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 4800 - Teaching Geography
3 credits

Designed specifically for geography education/social studies education students preparing to teach grades K-12. Exploration of national and state standards and core curriculum, as well as state-of-the-art geography education technology and teaching resources. Students develop teaching lessons, and gain classroom teaching experience with local geography teachers.

Cross-listed as: GEOG 6800.

Semester(s) Traditionally Offered: Fall

GEOG 4850 - Cartographic Design
3 credits

Techniques used in design and construction of maps, charts, and map projections.

Semester(s) Traditionally Offered: Spring

GEOG 5130 - Geography Education Field Practicum
1-6 credits

Specifically designed for undergraduate students and graduate students (teachers) who need specific classroom teaching experience in order to improve their quality of teaching and/or to carry out special classroom curriculum research as part of their geography education degrees.

Cross-listed as: GEOG 6130.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 5650 - Developing Societies (DSS)
DSS Depth Social Sciences
3 credits

Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.

Cross-listed as: GEOG 6650 and ANTH 5650/ANTH 6650 and SOC 5650/SOC 6650.

Semester(s) Traditionally Offered: Fall

GEOG 5810 - Geography Education Inservice Workshop
3 credits

Assists classroom teachers in broadening their perspective of Geography Education through increased knowledge, improving their geographic techniques, methods, and teaching resources for their classrooms.

Cross-listed as: GEOG 6810.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 5900 - Graduate Special Topics
1-4 credits

Designed for geography students involved in field research and/or internships. Provides opportunity for students to gain practical applied experience in their specialized academic emphasis in geography.

Cross-listed as: GEOG 6900.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 5970 - Classroom Technology in Geography Education
3 credits

Design, development, and application of contemporary technologies and multimedia classroom teaching resources for preservice and inservice geography education teachers.

Semester(s) Traditionally Offered: Fall, Summer

GEOG 6100 - Geographic Approaches to the Human-Environmental Relationship
3 credits

Introduces students to the study of human-environmental interactions from a geographic perspective, with special emphasis on the social and political dynamics of selected environmental problems and how these dynamics interrelate across different spatial and temporal scales.

Cross-listed as: GEOG 4100.

Semester(s) Traditionally Offered: Spring

GEOG 6120 - Environment and Development in Latin America
3 credits

Examines the changing environment and developmental geography of Latin America. Focuses on globalization throughout history, along with its impact on lives and environments in the region, varied and changing human-environment relationships, and processes of economic and social inequality.

Cross-listed as: GEOG 4120.

Semester(s) Traditionally Offered: Fall

GEOG 6130 - Geography Education Field Practicum
1-6 credits

Specifically designed for undergraduate students and graduate students (teachers) who need specific classroom teaching experience in order to improve their quality of teaching and/or to carry out special classroom curriculum research as part of their geography education degrees.

Cross-listed as: GEOG 5130.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 6140 - Violent Environments: Linking Ecology and Conflict in Sub-Saharan Africa
3 credits

Examines the relationship between violent conflict and natural resources, with particular attention given to human rights and political ecology perspectives. Through specific cases, conflict resources are explored, along with the threat they pose to national, regional, and global security. Also includes discussion of the diverse actors that profit from the persistence of conflict and civil unrest.

Cross-listed as: GEOG 4140.

Semester(s) Traditionally Offered: Spring

GEOG 6200 - Advanced Regional Geography
3 credits

Critical analysis of world’s regions, focusing on analysis and synthesis of a region’s economic, political, population, and cultural themes in the context of physical environment and global processes. Repeatable for different regions.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 6300 - Geography Education Classroom Practicum
1-3 credits

Allows geography education students to participate in actual geography classroom teaching with experienced geography teachers. Students observe, work with individuals and groups of students, team-teach lesson(s) with the teacher, and self-teach individual lesson(s).

Cross-listed as: GEOG 4300.
GEOG 6650 - Developing Societies  
3 credits  
Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.  
Cross-listed as: GEOG 5650 and ANTH 6650/ANTH 5650 and SOC 6650/SOC 5650.  
Semester(s) Traditionally Offered: Fall

GEOG 6800 - Teaching Geography  
3 credits  
Designed specifically for geography education/social studies education students preparing to teach grades K-12. Exploration of national and state standards and core curriculum, as well as state-of-the-art geography education technology and teaching resources. Students develop teaching lessons, and gain classroom teaching experience with local geography teachers.  
Cross-listed as: GEOG 4800.  
Semester(s) Traditionally Offered: Fall

GEOG 6810 - Geography Education Inservice Workshop  
3 credits  
Assists classroom teachers in broadening their perspective of Geography Education through increased knowledge, improving their geographic techniques, methods, and teaching resources for their classrooms.  
Cross-listed as: GEOG 5810.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

GEOG 6900 - Graduate Special Topics  
1-4 credits  
Designed for geography students involved in field research and/or internships. Provides opportunity for students to gain practical applied experience in their specialized academic emphasis in geography.  
Cross-listed as: GEOG 5900.  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Geology

GEO 1010 - Introduction to Geology (BPS)  
BPS Breadth Physical Sciences  
3 credits  
Introduces plate tectonics, minerals, rocks, water resources, geological hazards, internal and external geologic processes, and a geologic history of the earth.  
Campus: USU Eastern only  
Semester(s) Traditionally Offered: Fall, Summer

GEO 1020 - Prehistoric Life  
3 credits  
Emphasizes the evolution and history of life on earth. Introduces the geologic time scale, the basics of minerals and rocks, and the tectonic history of the earth. Stresses methods of fossilization, interpretation of basic sedimentary environments, and examples of the major types of animal and plant fossils from each of the geologic eras.  
Semester(s) Traditionally Offered: Fall, Spring

GEO 1060 - Introduction to Environmental Geoscience (BPS)  
BPS Breadth Physical Sciences  
3 credits  
Explores the earth’s internal and external processes. Interprets the roles these processes play in human habitation of the planet. Evaluates the interplay occurring between humans and the earth, as in the distribution of resources and the development of civilization.  
Semester(s) Traditionally Offered: Spring

GEO 1110 - Physical Geology (BPS)  
BPS Breadth Physical Sciences  
3 credits  
Covers both the internal and external processes shaping the earth. Major topics covered include plate tectonics, minerals, volcanism, igneous, sedimentary and metamorphic rocks, earthquakes, mass wasting, and landforms associated with streams, ground water,
glaciation, deserts and coastal processes.

Corequisite: GEO 1115

Semester(s) Traditionally Offered: Fall, Spring

GEO 1115 - Physical Geology Laboratory
1 credit

Laboratory course designed to complement introductory earth science courses. Students will study minerals, rocks, topographic and geologic maps, and aerial photographs.

Prerequisite/Restriction: GEO 1010 or GEO 1060 or USU 1360 (all may be taken concurrently)

Corequisite: GEO 1110

Semester(s) Traditionally Offered: Fall, Spring

GEO 1220 - Historical Geology
3 credits

A study of the earth's tectonic and life history as inferred from the examination of rocks and fossils. Concerned with the origin and development of the earth's atmosphere, oceans, and life.

Prerequisite/Restriction: GEO 1010 or GEO 1110 and GEO 1115 (preferred)

Corequisite: GEO 1225

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

GEO 1225 - Historical Geology Laboratory
1 credit

Accompanying laboratory course for GEO 1220.

Corequisite: GEO 1220

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

GEO 1650 - Fossil Preparation
2 credits

Designed to familiarize students with a paleontological laboratory and teach them basic techniques of fossil preservation. Covers procedures, vocabulary, and includes hands-on experience. Students are introduced to fossil care, identification, preservation techniques, molding and casting, basic osteology, and collection laws.

Campus: USU Eastern only

GEO 2250 - Introductory Internship/Co-op
1-4 credits

Educational work experience

Repeatable for credit

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 2500 - Geology Field Excursions
1 credit

Geologic features and processes observed in the field.

Prerequisite/Restriction: GEO 1010 or GEO 1060 or GEO 1110 or USU 1360 (may be taken concurrently) or permission of instructor.

Repeatable for credit

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

GEO 2700 - Science Excursion
1 credit

Students will study the geology, geography, plant and animal life, astronomy, and historical aspects of the areas visited on a field trip. Students will be expected to attend one or more lectures preceding or following the trip. Assignments, reports and/or exams may be required. Variable fees will be charged, which may include transportation, food, course handouts, and rental fees for some of the necessary equipment. Participation will be up to the discretion of the instructor.

Campus: USU Eastern only

GEO 2988 - Special Problems
1-4 credits

Directed study of selected topics.

Prerequisite/Restriction: Permission of instructor

GEO 3100 - Natural Disasters (DSC)
DSC Depth Life and Physical Sciences
3 credits

Hazardous geologic processes affecting humans. Cause, prediction, avoidance, and frequency of natural disasters, including earthquakes, volcanic eruptions, tsunamis, landslides, floods, subsidence, meteorite impacts, and global changes. Topics discussed in the context of earth systems and cycles. Three lectures per week.

Prerequisite/Restriction: One Breadth Physical Sciences (BPS) course.

Semester(s) Traditionally Offered: Spring

GEO 3150 - Energy in the Twenty-first Century (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Provides science-based overview of energy resources. Compares and analyzes energy budgets and energy resources, including solar energy, fossil fuels, nuclear energy, and renewable sources. For the different energy sources, contrasts carbon emissions and potential impacts on climate change.

Prerequisite/Restriction: USU 1360 and Quantitative Literacy (QL) course or equivalent.

Cross-listed as: PHYS 3150

Semester(s) Traditionally Offered: Fall

GEO 3200 - The Earth Through Time (DSC)
DSC Depth Life and Physical Sciences
4 credits

Investigates dynamic nature of Earth’s physical and biological processes, and how these processes have shaped Earth’s 4.5 billion-year history. Emphasis on interpretation of the story of the geologic record (rocks and landforms) and Earth’s sequential physical and biological changes. Three lectures and one two-hour lab per week.

Prerequisite/Restriction: GEO 1010 or GEO 1110.

Semester(s) Traditionally Offered: Spring

GEO 3300 - Geology of the World’s Oceans (DSC)
DSC Depth Life and Physical Sciences
3 credits

Geologic evidence for the development of ocean basins and continental margins through plate tectonic processes. Also, the interaction of the geo- and biospheres and their effect on the evolution of the oceans and atmosphere. Discussion of shoreline and marine environments, the organisms inhabiting them, and the physical and chemical processes in operation therein. Three lectures per week.

Prerequisite/Restriction: One University Studies Breadth Physical Sciences (BPS) course.

Semester(s) Traditionally Offered: Spring

GEO 3500 - Minerals and Rocks
4 credits

Introduction to minerals and the principles of crystallography, focusing on rock-forming and ore minerals. Provides overview of petrology and introduction to igneous, sedimentary, and metamorphic rocks, including X-ray and optical identification techniques. Three lectures and one three-hour lab per week.

Prerequisite/Restriction: GEO 1110.

Corequisite: CHEM 1210.

Semester(s) Traditionally Offered: Fall

GEO 3550 - Sedimentation and Stratigraphy (CI)
CI Communications Intensive
4 credits

Classification and analysis of sedimentary rocks and structures, with an emphasis on the interpretation of ancient sedimentary environments. Controls on sedimentary processes over time. Principles of stratigraphic correlation. Three lectures and one lab per week.

Prerequisite/Restriction: GEO 3200.

Semester(s) Traditionally Offered: Spring

GEO 3600 - Geomorphology
4 credits

Geomorphic processes, origin of landforms and surficial deposits. Emphasizes fluvial and hillslope landscape
Prerequisite/Restriction: GEO 1010 or GEO 1110 or GEOG 1000.

Cross-listed as: WATS 3600.

Semester(s) Traditionally Offered: Fall

GEO 3700 - Structural Geology
4 credits

Geometries, mechanisms, and mechanics of rock deformation. Stress and strain relationships, fault and fold classification and description. Lab presents applications and techniques for representing deformed rocks in map, cross section, and three-dimensional views; interpretation of deformed rocks. Three lectures and one lab per week.

Prerequisite/Restriction: GEO 1110, GEO 3550.

Semester(s) Traditionally Offered: Spring

GEO 4250 - Advanced Internship/Co-op
1-4 credits

Advanced educational work experience.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 4900 - Special Problems
1-4 credits

Advanced directed study of selected topics. Written report required.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 5150 - Fluvial Geomorphology
3 credits

Focuses on physical processes in streams that control their shape, plan form, slope, bed material, and distribution of channel bars. Emphasizes field analysis of these topics, and application of geomorphology to aquatic ecology and environmental restoration.

Cross-listed as: GEO 6150 and WATS 5150/WATS 6150.

Semester(s) Traditionally Offered: Fall

GEO 5170 - Fluvial Geomorphology Lab
2 credits

Field analysis focuses on physical processes in streams which control their shape, plan form, slope, bed material, and distribution of channel bars. Application of geomorphology to aquatic ecology and environmental restoration.

Cross-listed as: GEO 6170 and WATS 5170/WATS 6170.

Semester(s) Traditionally Offered: Fall
GEO 5200 - Geology Field Camp
5 credits

Integrative approach to examining geologic relationships in the field, deciphering geologic evolution of map regions, and interpreting the structure and distribution of rocks. Results presented in reports, maps, cross-sections, and graphical formats. Requires 40-45 hours of lab per week for 3.5-4.0 weeks.

Prerequisite/Restriction: GEO 3500, GEO 3550, GEO 3600, GEO 3700, GEO 4700.

Semester(s) Traditionally Offered: Summer (even years)

GEO 5360 - Volcanology
3 credits

Provides students with a basic understanding of volcanic processes. Students gain an understanding of the range and scope of volcanoes and volcanic eruptions. Prehistoric volcanic eruptions reconstructed from their deposits. To receive graduate credit, student must write student grant proposal to do research in some area of volcanology relevant to hazards assessment.

Cross-listed as: GEO 6360.

Semester(s) Traditionally Offered: Fall

GEO 5430 - Paleontology
2 credits

Survey of prominent microfossil, invertebrate, and vertebrate groups, including their diagnostic morphologic features, stratigraphic ranges, and environmental tolerances. Equips students with the necessary information and techniques to enable them to recognize and utilize fossils in stratigraphic and paleoenvironmental interpretation. Three lectures and one lab per week. Half semester; may be paired with GEO 5440.

Prerequisite/Restriction: GEO 3200.

Semester(s) Traditionally Offered: Fall

GEO 5440 - Paleocology (CI)
CI Communications Intensive
2 credits

Interrelationships between various organisms and between organisms and their environment. Provides field, laboratory, and quantitative techniques for the interpretation of ancient environments and the analysis of past biotic interrelationships. Three lectures and one lab per week. Half semester; may be paired with GEO 5430.

Prerequisite/Restriction: GEO 5430.

Cross-listed as: GEO 6440.

Semester(s) Traditionally Offered: Fall

GEO 5460 - Advanced Physical Sedimentology
3 credits

Detailed interpretation of sedimentary rocks, based on petrography and sedimentary characteristics. Source terranes, tectonic settings, depositional environments, and diagenetic changes during burial. Three lectures and two labs per week. Half semester.

Prerequisite/Restriction: GEO 3500 and GEO 3550.

Cross-listed as: GEO 6460.

Semester(s) Traditionally Offered: Fall

GEO 5470 - Chemical Sedimentary Rocks
2 credits

Application of field observations, hand-sample, thin-section, and X-ray diffraction analyses to the interpretation of chemical sedimentary rocks. Emphasizes determination of depositional environment and evaluation of diagenetic changes. Three lectures and one lab per week. Half semester.

Prerequisite/Restriction: GEO 3500 and GEO 3550.

Semester(s) Traditionally Offered: Spring

GEO 5480 - Sedimentary Basin Analysis
2 credits

Detailed coverage of techniques of sedimentary basin analysis, including depositional systems, provenance, basin modeling, and fluid and heat flow history. Survey of types of sedimentary basins worldwide.

Prerequisite/Restriction: GEO 3500 and GEO 3550.
Semester(s) Traditionally Offered: Spring, Odd Years

GEO 5500 - Advanced Igneous Petrology
4 credits

Advanced concepts in the origin and evolution of magmatic systems, effects of different tectono thermal regimes on magma genesis, magma dynamics, and phase equilibria in magmatic systems. Concepts illustrated by rock suites from classic locations. Three lectures and three laboratory hours each week.

Prerequisite/Restriction: GEO 4500 or equivalent.

Cross-listed as: GEO 6500.

Semester(s) Traditionally Offered: Fall

GEO 5510 - Groundwater Geology (QI)
QI Quantitative Intensive
3 credits

Provides graduate students and senior undergraduates with understanding of fundamental principles of groundwater geology and hydrology, and helps prepare them for careers in hydrogeology or environmental geology. Three lectures per week.

Prerequisite/Restriction: GEO 1110 and MATH 1210 or permission of instructor; GEO 3600/WATS 3600 recommended.

Semester(s) Traditionally Offered: Fall

GEO 5520 - Techniques of Groundwater Investigations (CI)
CI Communications Intensive
3 credits

Survey of techniques used in groundwater investigations for collecting physical and chemical data. Includes well drilling and construction; water level, flow rate, and discharge measurements; hydraulic and tracer tests; and groundwater sampling.

Prerequisite/Restriction: GEO 5510 or permission of instructor.

Cross-listed as: GEO 6520.

Semester(s) Traditionally Offered: Spring (even years)

GEO 5530 - Petroleum Systems: Principles of Exploration and Development (QI)
QI Quantitative Intensive
3 credits

Analysis of the petroleum system from source to trap. Examines processes of generation, migration, and accumulation of oil and gas. Overview of petroleum economics and technology.

Prerequisite/Restriction: GEO 3550 and GEO 3700; or permission of instructor.

Semester(s) Traditionally Offered: Spring

GEO 5540 - Quantitative Methods in Geology (QI)
QI Quantitative Intensive
3 credits

Application of various quantitative methodologies to geologic problems. Two lectures and one lab per week. GEO 6540 requires student presentation on thesis research methodology.

Prerequisite/Restriction: GEO 3500 or GEO 3550 or GEO 3600 or GEO 3700.

Cross-listed as: GEO 6540.

Semester(s) Traditionally Offered: Fall

GEO 5550 - Geochemical Application of Electron Microprobe and X-Ray Fluorescence Analysis
4 credits

Theory and application of X-ray fluorescence spectrometry and the electron microprobe to problems in geochemistry and materials analysis. Two hours lecture and six hours laboratory per week.

Prerequisite/Restriction: CHEM 1210 or equivalent, or permission of instructor.

Cross-listed as: GEO 6550.

Semester(s) Traditionally Offered: Spring

GEO 5560 - Subsurface Analyses: Principles and Techniques
2 credits

Survey of techniques to characterize subsurface geologic
environments. Survey of three-dimensional analyses, deep drilling, coring, well-log analyses, subsurface geophysical methods, fluid and stress measurements, and petrophysical properties. Graduate students examine and interpret data sets related to research projects.

Prerequisite/Restriction: GEO 3550, GEO 3700, or permission of instructor.

Cross-listed as: GEO 6560.

Semester(s) Traditionally Offered: Spring

GEO 5600 - Geochemistry
3 credits

Application of thermodynamics, solution chemistry, phase diagrams, and both radioactive and stable isotopes to the understanding of earth processes. Three lectures per week.

Prerequisite/Restriction: GEO 3500.

Semester(s) Traditionally Offered: Spring (odd years)

GEO 5610 - Tectonic Evolution of North America
3 credits

Survey of tectonic styles and processes along plate margins, using the tectonic evolution of western North America as the prime example. Two lectures and one lab per week.

Prerequisite/Restriction: GEO 3700.

Cross-listed as: GEO 6610.

GEO 5620 - Global Geophysics (QI)
QI Quantitative Intensive
3 credits

Application of physics to understanding geologic processes, the earth’s interior, and the theory of plate tectonics. Two lectures and one two-hour lab per week.

Prerequisite/Restriction: GEO 3700 and PHYS 2220.

Cross-listed as: GEO 6620.

Semester(s) Traditionally Offered: Fall (even years)

GEO 5630 - Photogeology and Image Analysis
3 credits

Interpretation of geologic features on aerial photographs, satellite imagery, and digital elevation models. Three two-hour labs per week.

Prerequisite/Restriction: GEO 3600, GEO 3700.

Semester(s) Traditionally Offered: Spring

GEO 5640 - Introduction to Seismology
3 credits

This course introduces the mathematical fundamentals of the elastic wave equation, and some basic tools for characterizing seismic sources and imaging variations of material properties in the Earth's interior. For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Cross-listed as: GEO 6640

Semester(s) Traditionally Offered: Spring Odd Years

GEO 5650 - Senior Thesis
1-4 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 5660 - Applied Geophysics
4 credits

Field-oriented course involving data collection, data analysis, and overview/introduction of geophysical imaging and analysis of the subsurface. For GEO 6660, students must complete a written project and presentation.

Prerequisite/Restriction: MATH 1210, PHYS 2210, PHYS 2220; or permission of instructor.

Cross-listed as: GEO 6660.

Semester(s) Traditionally Offered: Spring (even years)

GEO 5670 - Inverse Theory
3 credits
This course introduces the mathematical tools for optimizing model parameters (and estimating uncertainties for a given set of observational measurements. For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Prerequisite/Restriction: MATH 1210 ; MATH 1220 or STAT 3000

Cross-listed as: GEO 6670

Semester(s) Traditionally Offered: Spring Odd Years

GEO 5680 - Paleoclimatology
3 credits
Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: GEO 6680 and PSC 5680/PSC 6680 and WATS 5680/WATS 6680.

Semester(s) Traditionally Offered: Spring

GEO 5690 - Geodynamics
3 credits
This course examines the physical processes that drive deformation and a wide variety of the other geological phenomena, including processes and observations of heat transfer, the role of gravity in stress and strain, and the various different flavors of rock rheology. Observational metrics (including geochemistry, laboratory measurements, and geophysical measurements of rock properties) will also be covered. For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Cross-listed as: GEO 6690

Semester(s) Traditionally Offered: Fall Even Years

GEO 5900 - Topics for Teachers
1-4 credits
Special topics in geology for elementary and secondary science teachers to provide an understanding of the geology of Utah and the Western United States. Emphasis on field and lab activities.

Prerequisite/Restriction: Introductory geology course or permission of instructor.

Repeatable for credit

GEO 6050 - Graduate Seminar in Tectonics (Topic)
1-3 credits
Advanced topics of current interest in tectonics and orogenesis.

Cross-listed as: GEO 7050

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 6100 - Graduate Seminar in Geomorphology (Topic)
1-3 credits
Advanced topics of current interest in geomorphology and landscape evolution.

Cross-listed as: GEO 7100.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 6120 - Advanced Geomorphology
3 credits
Process geomorphology seminar focusing on hillslope, tectonic, and climatic geomorphology research.

Cross-listed as: GEO 7120.

Semester(s) Traditionally Offered: Spring

GEO 6150 - Fluvial Geomorphology
3 credits
Focuses on physical processes in streams that control their shape, plan form, slope, bed material, and distribution of channel bars. Emphasizes field analysis of these topics, and application of geomorphology to
aquatic ecology and environmental restoration.

Cross-listed as: GEO 5150 and WATS 6150/WATS 5150.
Semester(s) Traditionally Offered: Fall

GEO 6170 - Fluvial Geomorphology Lab
2 credits

Field analysis focuses on physical processes in streams which control their shape, plan form, slope, bed material, and distribution of channel bars. Application of geomorphology to aquatic ecology and environmental restoration.

Cross-listed as: GEO 5170 and WATS 6170/WATS 5170.
Semester(s) Traditionally Offered: Fall

GEO 6200 - Graduate Seminar in Geochemistry (Topic)
1-3 credits

Advanced topics of current interest in geochemistry.

Cross-listed as: GEO 7200.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 6240 - Structural Analysis of Deformed Geological Materials
3 credits

Explores how rocks, sediments, ice, and soils deform. By examining the geometry, kinematics, mechanics, and mechanisms of deformation, students learn how to interpret deformed materials in the field and laboratory.

GEO 6250 - Mechanics and Processes in Earth Sciences
3 credits

Fundamentals of solid and fluid mechanics with applications to the earth sciences. Applications to rock deformation, fluid flow, glacier movement, and slope stability. Designed for graduate students in earth sciences and engineering. Two lectures, one lab per week.

Prerequisite/Restriction: MATH 1210, PHYS 2210, and graduate standing.

Cross-listed as: GEO 7250.

GEO 6260 - Volcanology
3 credits

Provides students with a basic understanding of volcanic processes. Students gain an understanding of the range and scope of volcanoes and volcanic eruptions. Prehistoric volcanic eruptions reconstructed from their deposits. To receive graduate credit, student must write student grant proposal to do research in some area of volcanology relevant to hazards assessment.

Cross-listed as: GEO 5360.
Semester(s) Traditionally Offered: Fall

GEO 6300 - Graduate Seminar in Petrology (Topic)
1-3 credits

Advanced topics of current interest in petrology of igneous, metamorphic, or sedimentary rocks.

Cross-listed as: GEO 7300.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 6350 - Graduate Seminar in Paleontology and Paleoecology (Topic)
1-3 credits

Advanced topics in paleontology and paleoecology.

Cross-listed as: GEO 7350.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 6360 - Volcanology
3 credits

Provides students with a basic understanding of volcanic processes. Students gain an understanding of the range and scope of volcanoes and volcanic eruptions. Prehistoric volcanic eruptions reconstructed from their deposits. To receive graduate credit, student must write student grant proposal to do research in some area of volcanology relevant to hazards assessment.

Cross-listed as: GEO 5360.
Semester(s) Traditionally Offered: Fall

GEO 6400 - Graduate Seminar in Sedimentary Geology (Topic)
1-3 credits

Advanced topics of current interest in sedimentary geology, depositional systems, and basin evolution.

Cross-listed as: GEO 7400.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
GEO 6440 - Paleoecology  
2 credits

Interrelationships between various organisms and between organisms and their environment. Provides field, laboratory, and quantitative techniques for the interpretation of ancient environments and the analysis of past biotic interrelationships. Three lectures and one lab per week. Half semester; may be paired with GEO 5430.

Prerequisite/Restriction: GEO 5430.

Cross-listed as: GEO 5440.

Semester(s) Traditionally Offered: Fall

GEO 6460 - Advanced Physical Sedimentology  
3 credits

Detailed interpretation of sedimentary rocks, based on petrography and sedimentary characteristics. Source terranes, tectonic settings, depositional environments, and diagenetic changes during burial. Three lectures and two labs per week. Half semester.

Prerequisite/Restriction: GEO 3500 and GEO 3550.

Cross-listed as: GEO 5460.

Semester(s) Traditionally Offered: Fall

GEO 6470 - Chemical Sedimentary Rocks  
2 credits

Application of field observations, hand-sample, thin-section, and X-ray diffraction analyses to the interpretation of chemical sedimentary rocks. Emphasizes determination of depositional environment and evaluation of diagenetic changes. Three lectures and one lab per week. Half semester.

Prerequisite/Restriction: GEO 3500 and GEO 3550.

Cross-listed as: GEO 5470.

Semester(s) Traditionally Offered: Spring

GEO 6500 - Advanced Igneous Petrology  
4 credits

Advanced concepts in the origin and evolution of magmatic systems, effects of different tectono thermal regimes on magma genesis, magma dynamics, and phase equilibria in magmatic systems. Concepts illustrated by rock suites from classic locations. Three lectures and three laboratory hours each week.

Prerequisite/Restriction: GEO 4500 or equivalent.

Cross-listed as: GEO 5500.

Semester(s) Traditionally Offered: Fall

GEO 6510 - Graduate Seminar in Hydrology (Topic)  
1-3 credits

Advanced topics of current interest in hydrology.

Cross-listed as: GEO 7510.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 6520 - Techniques of Groundwater Investigations  
3 credits

Survey of techniques used in groundwater investigations for collecting physical and chemical data. Includes well drilling and construction; water level, flow rate, and discharge measurements; hydraulic and tracer tests; and groundwater sampling.

Prerequisite/Restriction: GEO 5510 or permission of instructor.

Cross-listed as: GEO 5520.

Semester(s) Traditionally Offered: Spring

GEO 6540 - Quantitative Methods in Geology  
3 credits

Application of various quantitative methodologies to geologic problems. Two lectures and one lab per week. GEO 6540 requires student presentation on thesis research methodology.

Prerequisite/Restriction: GEO 3500 or GEO 3550 or GEO 3600 or GEO 3700 or permission of instructor.

Cross-listed as: GEO 5540.

Semester(s) Traditionally Offered: Fall
GEO 6550 - Geochemical Application of Electron Microprobe and X-Ray Fluorescence Analysis
4 credits

Theory and application of X-ray fluorescence spectrometry and the electron microprobe to problems in geochemistry and materials analysis. Two hours lecture and six hours laboratory per week.

Prerequisite/Restriction: CHEM 1210 or equivalent, or permission of instructor.

Cross-listed as: GEO 5550.

Semester(s) Traditionally Offered: Spring

GEO 6560 - Subsurface Analyses: Principles and Techniques
2 credits

Survey of techniques to characterize subsurface geologic environments. Survey of three-dimensional analyses, deep drilling, coring, well-log analyses, subsurface geophysical methods, fluid and stress measurements, and petrophysical properties. Graduate students examine and interpret data sets related to research projects.

Prerequisite/Restriction: GEO 3550, GEO 3700, or permission of instructor.

Cross-listed as: GEO 5560.

Semester(s) Traditionally Offered: Spring

GEO 6590 - Geodesy and Crustal Deformation
3 credits

This course introduces the fundamentals of measurement of the Earth's shape and gravity, and some basic tools for modeling temporal changes in the shape of the Earth's surface and its gravitational potential. 7000 level students will solve additional problems and require a theoretical development component for semester projects.

Cross-listed as: GEO 7590

Semester(s) Traditionally Offered: Fall, Odd years

GEO 6600 - Graduate Seminar in Geophysics (Topic)
1-3 credits

Advanced topics of current interest in geophysics.

Cross-listed as: GEO 7600.

Repeatable for credit.

GEO 6610 - Tectonic Evolution of North America
3 credits

Survey of tectonic styles and processes along plate margins, using the tectonic evolution of western North America as the prime example. Two lectures and one lab per week.

Prerequisite/Restriction: GEO 3700.

Cross-listed as: GEO 5610.

GEO 6620 - Global Geophysics
3 credits

Application of physics to understanding geologic processes, the earth's interior, and the theory of plate tectonics. Two lectures and one two-hour lab per week.

Prerequisite/Restriction: GEO 3700 and PHYS 2220.

Cross-listed as: GEO 5620.

GEO 6640 - Introduction to Seismology
3 credits

This course introduces the mathematical fundamentals of the elastic wave equation, and some basic tools for characterizing seismic sources and imaging variations of material properties in the Earth's interior. For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Cross-listed as: GEO 5640

Semester(s) Traditionally Offered: Spring Odd Years

GEO 6660 - Applied Geophysics
4 credits

Field-oriented course involving data collection, data analysis, and overview/introduction of geophysical imaging and analysis of the subsurface. For GEO 6660, students must complete a written project and presentation.
Prerequisite/Restriction: MATH 1210, PHYS 2210, PHYS 2220; or permission of instructor

Cross-listed as: GEO 5660.

GEO 6670 - Inverse Theory
3 credits

This course introduces the mathematical tools for optimizing model parameters (and estimating uncertainties for a given set of observational measurements. For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Prerequisite/Restriction: MATH 1210; MATH 1220 or STAT 3000

Cross-listed as: GEO 5670

Semester(s) Traditionally Offered: Spring Odd Years

GEO 6680 - Paleoclimatology
3 credits

Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: GEO 5680 and PSC 6680/PSC 5680 and WATS 6680/WATS 5680.

Semester(s) Traditionally Offered: Spring

GEO 6690 - Geodynamics
3 credits

This course examines the physical processes that drive deformation and a wide variety of the other geological phenomena, including processes and observations of heat transfer, the role of gravity in stress and strain, and the various different flavors of rock rheology. Observational metrics (including geochemistry, laboratory measurements, and geophysical measurements of rock properties) will also be covered.

For 6000-level graduate credit, students must complete a semester project and additional problem set assignments.

Cross-listed as: GEO 5690

Semester(s) Traditionally Offered: Fall Even Years

GEO 6700 - Graduate Seminar in Structural Geology (Topic)
1-3 credits

Advanced topics of current interest in structural geology.

Cross-listed as: GEO 7700.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 6800 - Seminar
1-4 credits

Repeatable for credit.

GEO 6900 - Graduate Internship/Co-op Experience
1-6 credits

Graduate educational work experience.

Prerequisite/Restriction: Approval of contract between student and department prior to enrollment.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 6970 - Thesis
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 7050 - Graduate Seminar in Tectonics (Topic)
1-3 credits

Advanced topics of current interest in tectonics and
orogenesis.

Cross-listed as: GEO 6050.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7100 - Graduate Seminar in Geomorphology (Topic)
1-3 credits

Advanced topics of current interest in geomorphology and landscape evolution.

Cross-listed as: GEO 6100.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7120 - Advanced Geomorphology
3 credits

Process geomorphology seminar focusing on hillslope, tectonic, and climatic geomorphology research.

Cross-listed as: GEO 6120.

Semester(s) Traditionally Offered: Spring

GEO 7200 - Graduate Seminar in Geochemistry (Topic)
1-3 credits

Advanced topics of current interest in geochemistry.

Cross-listed as: GEO 6200.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7250 - Mechanics and Processes in Earth Sciences
3 credits

Fundamentals of solid and fluid mechanics with applications to the earth sciences. Applications to rock deformation, fluid flow, glacier movement, and slope stability. Designed for graduate students in earth sciences and engineering. Two lectures, one lab per week.

Prerequisite/Restriction: MATH 1210, PHYS 2210, and graduate standing.

Cross-listed as: GEO 6250.

GEO 7300 - Graduate Seminar in Petrology (Topic)
1-3 credits

Advanced topics of current interest in petrology of igneous, metamorphic, or sedimentary rocks.

Cross-listed as: GEO 6300.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7350 - Graduate Seminar in Paleontology and Paleoecology (Topic)
1-3 credits

Advanced topics in paleontology and paleoecology.

Cross-listed as: GEO 6350.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7400 - Graduate Seminar in Sedimentary Geology (Topic)
1-3 credits

Advanced topics of current interest in sedimentary geology, depositional systems, and basin evolution.

Cross-listed as: GEO 6400.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7510 - Graduate Seminar in Hydrology (Topic)
1-3 credits

Advanced topics of current interest in hydrology.

Cross-listed as: GEO 6510.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

GEO 7590 - Geodesy and Crustal Deformation
3 credits

This course introduces the fundamentals of measurement of the Earth's shape and gravity, and some
basic tools for modeling temporal changes in the shape of
the Earth's surface and its gravitational potential. 7000
level students will solve additional problems and require
a theoretical development component for semester
projects.

Cross-listed as: GEO 6590

Semester(s) Traditionally Offered: Fall, Odd years

GEO 7600 - Graduate Seminar in Geophysics (Topic)
1-3 credits

Advanced topics of current interest in geophysics.

Cross-listed as: GEO 6600.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 7700 - Graduate Seminar in Structural Geology
(Topic)
1-3 credits

Advanced topics of current interest in structural geology.

Cross-listed as: GEO 6700.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

GEO 7800 - Graduate Seminar Series
1 credit

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 7970 - Dissertation Research
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GEO 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

German

GERM 1010 - German First Year I
4 credits

Communicative competencies in the four language skills:
speaking, listening, reading, and writing, with exposure
to cultures and customs.

Prerequisite/Restriction: Not open to those with more
than one year high school German or equivalent.

Semester(s) Traditionally Offered: Fall

GERM 1020 - German First Year II
4 credits

Communicative competencies in the four language skills:
speaking, listening, reading, and writing, with exposure
to cultures and customs.

Prerequisite/Restriction: GERM 1010 or at least one (but
not more than two) years of German in high school or
equivalent.

Semester(s) Traditionally Offered: Spring

GERM 1800 - German I Study Abroad
1-4 credits

Intensive study in a German-speaking country, advancing
proficiency in the four language skills and multicultural
knowledge at the beginning level.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

GERM 2010 - German Second Year I
4 credits

Further development of first-year competencies with
emphasis on language structure, vocabulary expansion,
reading, writing, and conversation in the context of cross-
cultural analysis.

Prerequisite/Restriction: GERM 1020 or equivalent.

Semester(s) Traditionally Offered: Fall

GERM 2020 - German Second Year II
4 credits

Further development of first-year competencies with
emphasis on language structure, vocabulary expansion,
reading, writing, and conversation in the context of cross-cultural analysis.

Prerequisite/Restriction: GERM 2010 or equivalent.

Semester(s) Traditionally Offered: Spring

GERM 2550 - German Civilization
3 credits

Covers the most important developments in German-speaking countries from the High Middle Ages to the present. Deals with political, social, literary, historical, and artistic expressions of an emerging culture. Taught in English.

GERM 2570 - Contemporary Germany
3 credits

Covers the most important elements of contemporary German culture in its literary, social, and artistic manifestations, and the political and historical dimensions of agents of change. Taught in English.

GERM 2800 - German II Study Abroad
1-4 credits

Intensive study in a German-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the second-year level.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

GERM 2880 - Individual Readings
1-4 credits

Individual study of selected readings in German.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

GERM 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. German culture will also be emphasized.

Significant reading and work outside of class are required.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

GERM 3000 - Introduction to German Studies (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Introduction to the discipline of German Studies (history, literature, the arts, philosophy, science, economics, politics, etc.), addressing information resources, research methods, student career goals, and practice. Advances oral and written language proficiency.

GERM 3040 - Advanced German Grammar and Composition (CI)
CI Communications Intensive
3 credits

GERM 3050 - Advanced German Grammar and Composition (CI)
CI Communications Intensive
3 credits

Thorough review of German grammar and style. Application of rules of writing to compositions. Oral presentations of contemporary topics with graded difficulty.

Semester(s) Traditionally Offered: Fall, Spring

GERM 3300 - Contemporary German Speaking Cultures (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Multidisciplinary examination of current trends in contemporary cultures. Written, oral, visual, and electronic texts from the post-World War II period will be analyzed and placed in sociopolitical, economic, historical, and literary contexts. Emphasis on Germany as a multicultural society, and on related popular and minority cultural discourse. Interactive format.

GERM 3510 - Business German (CI)
CI Communications Intensive
3 credits

Study of current German business and commercial
practices, terminology, and business-related communications skills in a multi-disciplinary and global world context. Advances the four language skills.

GERM 3540 - Techniques in Translating German Texts
(CI)
CI Communications Intensive
3 credits


GERM 3550 - Cultural History of German Speaking Peoples (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Overview and critical analysis of cultural, historical, and intellectual developments that have shaped the civilizations of German-speaking peoples from 800 A.D. until the end of World War II. Examination of written, oral, visual, and electronic texts integrated in the context of Western philosophy and humanist thought. Interactive format.

GERM 3600 - Survey of German Literature I (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Overview, with selected readings, of the major literary trends in German-speaking cultures from the medieval period to the early nineteenth century, including the study of genres, epochs, styles, and theories in the context of evolving cultures.

GERM 3610 - Survey of German Literature II (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Overview, with selected readings, of the major literary trends in German-speaking cultures from the early nineteenth century to the present, including the study of genres, epochs, styles, and theories in the context of evolving cultures.

GERM 3800 - German III Study Abroad
1-4 credits

Intensive study in a German-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the third-year level.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

GERM 3880 - Individual Readings
1-4 credits

Individual study of selected readings in German.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

GERM 4200 - Applied German Linguistics and Phonetics
3 credits

Discussion of syntactical and morphological problems of German, principles of language learning, and analysis of phonological and phonetic patterns.

GERM 4600 - Faust’s Legacy
3 credits

Examination of the legendary figure of Faust through historical and contemporary perspectives. Analysis of the Faust theme and character as presented in literature, films, stage productions, and musicals. Taught in English.

GERM 4610 - German Narratives
3 credits

Readings from a wide range of narrative texts representing various historical periods. Focus on literary traditions within historical contexts. Examination of styles, motifs, and the theory of the novel.

Repeatable for credit.

GERM 4650 - Trends in Modern German Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Study of literary movements, topics, and styles of modern (twentieth century) German literature. Concentration on texts representing a variety of aesthetic expressions, central to experiences of twentieth-century life.
GERM 4800 - German IV Study Abroad
1-4 credits
Intensive study in a German-speaking country, advancing proficiency in the four language skills and multicultural knowledge at the fourth-year level.
Repeatable for credit.
Semester(s) Traditionally Offered: Summer

GERM 4880 - Individual Readings
1-4 credits
Readings in technical, scientific, and literary German.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

GERM 4900 - Special Topics
3 credits
Selected critical topics and themes relating to German literature, culture, film, pedagogy, linguistics, and associated theories. Includes readings in English and German. Content determined by student need and interest.
Repeatable for credit.

GERM 4910 - German for Special Purposes
3 credits
Advances German communicative proficiency in the fields of business, science, and pedagogy. Promotes professional applications of German terminologies and procedures for science and commerce, as well as teaching methodology. Discipline-interactive projects advance the four language skills.

GERM 4920 - German Language Tutoring
1 credit
Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.
Prerequisite/Restriction: Permission of instructor.

GERM 6200 - German Linguistics and Phonetics
3 credits
Discussion of syntactical and morphological problems of German and principles of language learning. Phonological and phonetic patterns of the German language also discussed.
Prerequisite/Restriction: GERM 2020, another 3000-level or higher GERM course, or demonstrated proficiency through testing.

Greek

GRK 1010 - Beginning Ancient Greek I
5 credits
Basics of Greek grammar and vocabulary. Beginning readings.
Prerequisite/Restriction: LATN 1010, LATN 1020.
Semester(s) Traditionally Offered: Fall

GRK 1020 - Beginning Ancient Greek II
5 credits
Intermediate concepts of Greek grammar and vocabulary. Intermediate readings.
Prerequisite/Restriction: Minimum grade of B in GRK 1010.
Semester(s) Traditionally Offered: Spring

GRK 3300 - Intermediate Greek Prose
3 credits
Readings in ancient Greek prose.
Prerequisite/Restriction: Minimum grade of B in GRK 1020.
Semester(s) Traditionally Offered: Fall

GRK 3330 - Intermediate Greek Poetry
3 credits
Readings in Greek poetry.
Prerequisite/Restriction: Minimum grade of B in GRK 3300.

Semester(s) Traditionally Offered: Spring
GRK 4300 - Advanced Greek Readings
3 credits

Readings in Ancient Greek poetry and/or prose.

Prerequisite/Restriction: Minimum grade of B in GRK 3300 and GRK 3300.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
GRK 4930 - Directed Readings in Greek Poetry and Prose Authors
1-3 credits

Directed readings in advanced Greek poetry and prose authors.

Prerequisite/Restriction: Successful completion of at least three semesters of Greek.

Semester(s) Traditionally Offered: Fall, Spring, Summer
Health (USU Eastern)
HEAL 1020 - Responding to Emergencies
2 credits

First Aid for the non-major and is an elective course. This course will offer training for everyday use, by matching American Red Cross standards for Responding to Emergencies and Community CPR courses.

Campus: USU Eastern only
HEAL 1030 - Medical Assisting: Administrative Competencies
4 credits

Focuses on knowledge necessary to perform medical assistant administrative duties. Includes introduction to the medical assisting and health profession, ethics, safety, and security in the medical office, integrated administrative procedures, health insurance, medical coding and billing. Communication and management skills in leadership, conflict resolution, and customer service are emphasized.

Campus: USU Eastern only
HEAL 1600 - Medical Assisting
6 credits

Focuses on knowledge necessary to perform clinical competencies as a medical assistant. Includes emergency procedures and first aid, therapeutic approach, integrated clinical procedures, diagnostic procedures, and laboratory procedures.

Prerequisite/Restriction: NURS 1000 or concurrent enrollment in NURS 1000.

Campus: USU Eastern only
HEAL 1700 - Medical Assisting Internship
4 credits

Designed to provide for student attainment of the Entry Level Competencies for the Medical Assistant. Placement in an ambulatory health care setting is required. In an actual work situation, students will perform both administrative and clinical competencies. Administrative competencies include performance of clerical functions, bookkeeping procedures and preparation of special accounting entries. Clinical competencies include knowledge of fundamental principles, specimen collection, diagnostic testing and patient care. Transdisciplinary competencies will be integrated in both the clinical and administrative areas. These include communication, legal concepts, patient instruction and operational functions.

Prerequisite/Restriction: HEAL 1030 or HEAL 1600 or concurrent enrollment in HEAL 1030 or HEAL 1600.

Campus: USU Eastern only
HEAL 1860 - Phlebotomy and Clinical Laboratory
2 credits

Focuses on the knowledge and skill necessary to perform phlebotomy and specific clinical laboratory duties. Skills include drawing blood, obtaining blood cultures, using Lancet or a Microlance for a Microdraw or an Infant Heel Stick, and measuring bleeding time.

Campus: USU Eastern only
HEAL 2020 - Emergency First Response
3 credits

Designed to meet the skill requirements of students majoring in health related fields and for those working in fields requiring the individual to respond with first aid in the line of duty. Meets or exceeds American Red Cross standards for Emergency Response and CPR for the Professional Rescuer and standards for the Utah Emergency Medical Training Council First Responder Course.

Campus: USU Eastern only

HEAL 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in health. Students meet with the instructor/Coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

HEAL 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

Health Education and Promotion

HEP 2000 - First Aid and Emergency Care
2 credits

Provides instruction and practical experience for the development of first aid knowledge, skills, and personal judgment. Focuses on recognizing emergencies, activating EMS, and providing direct care.

Semester(s) Traditionally Offered: Fall, Spring

HEP 2300 - Cardiopulmonary Resuscitation
1 credit

Techniques and skills of adult, child, and infant airway management and cardiopulmonary resuscitation for the lay person (one rescuer). Taught according to current standards.

Semester(s) Traditionally Offered: Arranged

HEP 2500 - Health and Wellness
2 credits

Designed to enable students to enhance personal wellness by gaining understanding about the social, physical, spiritual, and emotional dimensions of health, and by applying different strategies for improving personal health behaviors.

Semester(s) Traditionally Offered: Fall, Spring

HEP 3000 - Drugs and Human Behavior
3 credits

Students evaluate the historical and modern use, misuse, and abuse of drugs in relation to current concepts of physical, social, and emotional wellness. Special emphasis on educational and community strategies for prevention of drug-related problems.

Semester(s) Traditionally Offered: Fall

HEP 3100 - School Health Programs
3 credits

Essentials of the existing paradigm of Comprehensive School Health Programs and their development in relation to current child health status. Assessment, planning, implementation, and evaluation.

Prerequisite/Restriction: Formal acceptance into the School Health Education Emphasis or School Health Minor or permission of instructor.

Semester(s) Traditionally Offered: Arranged

HEP 3200 - Consumer Health
3 credits

Focuses on helping students become discriminating consumers of health information, health products, and health services.

Campus: Online.

Semester(s) Traditionally Offered: Fall, Summer
HEP 3300 - Clinical Experience I
1 credit
Clinical experience in school health education.
Prerequisite/Restriction: Acceptance into School Health major or minor.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

HEP 3400 - Stress Management
3 credits
Concepts and principles of personal stress management, with special emphasis on effective stress management coping strategies, maximizing positive stress outcomes, and minimizing negative stress effects, to aid in obtaining and maintaining a balanced health homeostatic condition.
Campus: Online.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 3500 - Elementary School Health Education
2 credits
Explores child health status and the vital roles that the school/elementary teacher plays in enabling children to acquire healthful lifestyle behaviors while increasing their potential for academic success.
Semester(s) Traditionally Offered: Arranged

HEP 3600 - Introduction to Community Health (CI)
CI Communications Intensive
3 credits
Introduction to agencies, facilities, and programs playing a role in protection and promotion of health in the community. Special emphasis on competencies necessary for the health educator to function in a variety of community settings.
Semester(s) Traditionally Offered: Fall

HEP 3900 - Social Marketing in Health Education
3 credits
Explores social marketing techniques used in health promotion and examines the marketing process, which includes formative research, target audience analysis and segmentation, marketing mix, marketing strategies, pretesting, implementation, and evaluation.
Prerequisite/Restriction: HEP 2500

HEP 4100 - Foundations of Community Health
3 credits
Professional preparation course for health education majors. Primary emphasis on ethical issues, behavioral and sociological theories used in the profession, philosophical issues, technology, and health education methodologies.
Prerequisite/Restriction: HEP 2500.

HEP 4200 - Planning and Evaluation for Health Education (QI)
QI Quantitative Intensive
3 credits
Provides indepth study of planning, implementation, and evaluation of school and community health education programs. Students obtain hands-on experience planning a health education program.
Prerequisite/Restriction: HEP 3600; MATH 1050 or STAT 1040

HEP 4250 - Advanced Cooperative Work Experience
1-15 credits
Professional-level cooperative education work experience as student advances toward completion of the program.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 4300 - Clinical Experience II
1 credit
Clinical experience in school health education. G.
Prerequisite/Restriction: Acceptance into School Health major or minor.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

HEP 4400 - Creative Methods in Teaching Health Education
3 credits

Planning, designing, and evaluating comprehensive school health education curricula and instruction for secondary school students, utilizing various creative instructional strategies and materials. Participation in peer teaching experiences.

Prerequisite/Restriction: HEP 2500; Student in School Health Emphasis or School Health minor must be admitted to the Teacher Education Program.

Semester(s) Traditionally Offered: Fall, Spring

HEP 4500 - Sexuality Education Within the Schools
3 credits

Emphasizes broad understanding of human sexuality, with specific focus on adolescent sexuality/behavior, age and topic appropriate instruction, state law, and effective curriculum/strategies for human sexuality education within the secondary schools.

Prerequisite/Restriction: Formal acceptance into the School Health Education emphasis or School Health minor, or permission of instructor.

Semester(s) Traditionally Offered: Spring

HEP 4600 - Field Work in Health Education
1-9 credits

Supervised student participation in school or community health programs or directed projects.

Prerequisite/Restriction: HEP 3600, HEP 4100, HEP 4200 and permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 4700 - Honors Senior Thesis
1-6 credits

Requirements for the honors thesis include: (1) a detailed review of scholarly literature on the health topic of interest to the student, and (2) the collection of primary data on the topic of interest (e.g., through interviews, surveys, focus groups, etc.), which must include references. The student must meet regularly with the faculty mentor, who will help with the development of the honors thesis.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 5000 - Race, Culture, Class, and Gender Issues in Health (CI)
CI Communications Intensive
3 credits

Focuses on how multicultural issues affect health status and health choices. Special emphasis on how race, ethnicity, culture, socioeconomic status, and gender impact health status and access to health care.

Prerequisite/Restriction: Junior standing.

Semester(s) Traditionally Offered: Spring

HEP 5100 - Cultural and Complementary Medicine (CI)
CI Communications Intensive
3 credits

Provides in-depth view into health beliefs, traditions, and practices of various cultures and of the major minority groups in the U.S. Emphasizes ancient, eastern, and native health practices collectively known as complementary medicine and healing modalities.

Semester(s) Traditionally Offered: Arranged

HEP 5200 - International Health
3 credits

Explores meaning of “health” through the lens of different cultures. Provides an international comparison of health status, including morbidity and mortality data. Evaluates different programs, policies, and strategies for addressing international health problems.

Prerequisite/Restriction: Junior standing.

Semester(s) Traditionally Offered: Arranged
HEP 5300 - Grant Proposal Writing
3 credits

Teaches practical skills needed to plan and write proposals for federal, state, local, and private funding. Students develop proposals in an area in which they have developed expertise, and coordinate with a local agency for funding.

Prerequisite/Restriction: HEP 2500 and fulfillment of Communications Literacy CL2 requirement. Enrollment limited to Health Education and Public Health majors only.

Semester(s) Traditionally Offered: Spring

HEP 5500 - Student Teaching Seminar
2 credits

Weekly seminar dealing with the professional practice of school health education.

Prerequisite/Restriction: HEP 4400.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

HEP 5630 - Student Teaching
10 credits

Practical experience teaching health in the public school system.

Prerequisite/Restriction: HEP 4400.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

HEP 5700 - Special Topics in Health
1-6 credits

In-depth review and discussion of special topics in health. May be graded Pass/Fail, as determined by instructor or section.

Repeatable for credit.
Semester(s) Traditionally Offered: Arranged

HEP 5900 - Independent Study
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 5950 - Independent Research
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6000 - Evaluating Health-Promotion Programs
3 credits

Students learn to develop and carry out a health-promotion program evaluation, interpret the results of an evaluation, and identify implications for future program planning.

Semester(s) Traditionally Offered: Spring

HEP 6100 - Current Trends in Health Promotion
3 credits

Focuses on trends and issues in the promotion of health behaviors in a variety of settings. Analyzes and challenges prevailing assumptions and philosophies in relation to health promotion.

Semester(s) Traditionally Offered: Fall

HEP 6250 - Graduate Cooperative Work Experience
1-15 credits

Professional level of education work experience in a cooperative education position for graduate students.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6300 - Stress Management
3 credits

Explores concepts and principles of personal stress management, with special emphasis on effective stress management coping strategies, maximizing positive stress outcomes, and minimizing negative stress effects, thus aiding in obtaining and maintaining a balanced,
healthy homeostatic condition.

Semester(s) Traditionally Offered: Arranged

HEP 6500 - Proposal Seminar for Health Education
2 credits

During this seminar, second-year health education graduate students develop a thesis proposal adhering to departmental, college, and University guidelines. Students apply what they have learned in theory, research methods, and statistics courses for the final proposal.

Prerequisite/Restriction: EDUC 6570, EDUC 6600, and HEP 6800; or consent of instructor.

Pass/Fail only.

Semester(s) Traditionally Offered: Arranged

HEP 6600 - Field Work in Health Education
3-6 credits

Supervised student participation in school or community health projects or directed projects.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6700 - Special Topics in Health
1-6 credits

In-depth review and discussion of special topics in health.

Repeatable for credit.

Semester(s) Traditionally Offered: Arranged

HEP 6800 - Seminar in Health Behavior
3 credits

Explores current theoretical perspectives in relation to behaviors. Students critically examine theories commonly used in health education. Focuses on practical application of theory in health promotion programs.

Semester(s) Traditionally Offered: Fall

HEP 6900 - Independent Study
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6950 - Independent Research
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6970 - Thesis
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HEP 6990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Heavy Equipment and Trucking (USU Eastern)

HETR 1610 - General Maintenance
4 credits

Students will learn field troubleshooting on a variety of equipment including engines, transmissions, final drives, and electrical/battery systems. Safety training will be emphasized in all aspects of general maintenance.

Campus: USU Eastern only

HETR 1620 - Front End Loader Operation
2 credits

Students will learn theory and practical operation of a front end loader, and related pieces of equipment. Students will demonstrate all phases of operation from pre-shift to post-shift inspections, safety operation, truck loading, rough grading excavation, fueling, lubrication, and field troubleshooting.

Campus: USU Eastern only
HETR 1630 - Tractor Loader Backhoe Operation
2 credits

Students will learn theory and practical operation of tractor loader backhoe. Students will demonstrate competence in trenching, hazardous digging, demolition, truck loading, and grading. Field troubleshooting lubrication, general maintenance, and special emphasis on safety and hazard awareness.

Campus: USU Eastern only

HETR 1650 - Motor Grader Operation
2 credits

Students will learn theory and practical operation of a motor grader. Students will demonstrate competence in pre-shift and post-shift inspections, finish grading, road maintenance, snow removal, safety roading, grade stake reading, field troubleshooting, lubrication, and basic maintenance.

Campus: USU Eastern only

HETR 1660 - Dozer Operation
2 credits

Students will learn theory and practical operation of a dozer. Students will demonstrate competence in pre-shift and post-shift inspections. Students will also show competence in safe operation, excavation demolition, slot dozing, road building, push cat and cutting grade, fueling, lubrication, and field troubleshooting.

Campus: USU Eastern only

HETR 2760 - Dump and Trailering
2 credits

Students will learn theory and practical operation of a dump truck and drop deck low-boy trailer, the safest way to load and lash each piece of equipment for transport, P.T.O. operation, overhead hazards, safe backing, fueling, lubrication, chain and boomer safety, tire care, and safety.

Campus: USU Eastern only

HETR 2770 - Laws and Regulations
4 credits

Theory course which describes laws and regulations, defensive driving, principles of haulage and operation of equipment, safety procedures, and preparation for examination. This course, along with HETR 2780 and HETR 2790, is intended to prepare students for their Commercial Driver's License (CDL) and employment in the trucking industry. Intended to provide the material and experience necessary to pass the written exam for the class A Commercial Driver's License.

Campus: USU Eastern only

HETR 2780 - Maintenance
3 credits

Includes lubrication, fluid maintenance, tire and wheel maintenance, electrical maintenance, driving observation, and testing based on knowledge, skills and safety attitude. This course, along with HETR 2770 and HETR 2790, is intended to prepare students for their Commercial Drivers License (CDL) and employment with the trucking industry.

Campus: USU Eastern only

HETR 2790 - Behind the Wheel
6 credits

Covers on and off highway procedures, driving with and without loads, turning,cornering, backing, braking (gear and pedal), shifting, road speeds, traffic, signals, road signs, pre and post shift inspections. This course, along with HETR 2770 and HETR 2780, is intended to prepare students for their Commercial Driver's License (CDL) and employment in the trucking industry.

Campus: USU Eastern only

HETR 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in heavy/equipment and trucking. The student meets with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

HETR 2988 - Special Problems
1-3 credits
Individual work approved by the instructor. Time and credit to be arranged.

Campus: USU Eastern only

History

HIST 1060 - Introduction to Islamic Civilization (BHU)
BHU Breadth Humanities
3 credits

Survey of Islamic civilization from the Prophet Muhammad to the present.

HIST 1100 - Foundations of Western Civilization: Ancient and Medieval (BHU)
BHU Breadth Humanities
3 credits

Survey of institutions and developments of early and medieval Western civilization from its Mediterranean origins to the beginning of the early modern period.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 1110 - Foundations of Western Civilization: Modern (BHU)
BHU Breadth Humanities
3 credits

Survey of the institutions and developments in Western civilization from 1500 to the present.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 1500 - Cultural and Economic Exchange in the Pre-Nineteenth Century World (BHU)
BHU Breadth Humanities
3 credits

Surveys pre-Nineteenth Century cultural and economic interactions in important zones of exchange. Regional focus determined by instructor. Themes may include: trade, religious conversion, migration, slavery, warfare, and other types of cross-cultural exchange.

Semester(s) Traditionally Offered: Fall, Spring

HIST 1510 - The Modern World (BHU)
BHU Breadth Humanities
3 credits

Survey of world history from the beginning of the nineteenth century to the present.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 1600 - American Cultures in Film
3 credits

Introduction to major ethnic groups in America and their treatment in recent feature films.

Cross-listed as: ENGL 1600.

HIST 1700 - American Civilization (BAI)
BAI Breadth American Institutions
3 credits


HIST 2010 - Special Topics Seminar
3 credits

Study of special cross-cultural topics, including Imperial Paris, British India, Slavery in America, and Ute History.

HIST 2018 - Native American History and Culture (BSS)
BSS Breadth Social Sciences
3 credits

Provides a broad overview of Native American history from pre-history to the present. First half of the course emphasizes an anthropological approach to the study of the origins and reality of historical and contemporary Native American peoples. Topics include early colonization of North America, diversity of aboriginal cultures, the great ancestral civilizations of Mesoamerica and South America, and Native America in the 20th and 21st centuries. Second half of the course examines the process and results of conquest and colonization, the United States government Indian policy, and the persistence of Native American culture and tribal identity throughout the modern era. Course employs discussion, lecture, independent reading and writing projects, participation in Native American cultural activities and Native American history in film.

Prerequisite/Restriction: Previous anthropology experience or coursework is suggested
Cross-listed as: ANTH 2018

Campus: USU Eastern only

HIST 2210 - Introduction to Folklore (BHU)
BHU Breadth Humanities
3 credits

Introduction to major genres of folklore (folk narrative, custom, folk music and song, vernacular architecture and arts), folk groups (regional, ethnic, occupational, familial), and basic folklore research method (collecting and archiving).

Cross-listed as: ANTH 2210 and ENGL 2210.

Semester(s) Traditionally Offered: Fall, Spring

HIST 2700 - United States to 1877 (BAI)
BAI Breadth American Institutions
3 credits

Survey of the development of American society, economy, culture, and politics to 1877.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 2710 - United States 1877-Present (BAI)
BAI Breadth American Institutions
3 credits

Survey of the development of American society, economy, culture, and politics since 1877.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 2720 - Navajo History and Culture
3 credits

Principal ethnic, regional, and occupational folk groups in America. Relations between folklore and American history, literature, and society. Key genres in American folklore (narrative, art, song, etc.) and their role in American culture.

Cross-listed as: ENGL 2720 and ANTH 2720.

Semester(s) Traditionally Offered: Spring

HIST 2730 - Navajo History and Culture
3 credits

This is an introductory course in the survey of Navajo history and culture, ranging from prehistoric through contemporary times on both a local and trans-southwestern level. Lecture, discussion, film and readings provide the student with a visual and interactive approach to learning.

Campus: USU Eastern only

HIST 2810 - History of American Southwest
3 credits

Provides a broad survey of the West in America’s history. Themes include territorial expansion, economic and environmental development in the West, the social history of western peoples from the frontier era through the 20th century, and the idea of the West in popular culture. Includes lectures, readings, films, and use of the World Wide Web. Students are required to demonstrate learning through exams, written and/or multimedia assignments, and classroom presentations and/or participation.

Prerequisite/Restriction: Fulfillment of CL1 requirement through coursework or examination (ENGL 1010) and HIST 1700 or HIST 2710 or HIST 2720 recommended.

Campus: USU Eastern only

HIST 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training. Students meet with the instructor/ coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, and credit.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

HIST 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

HIST 3010 - Introduction to Buddhism
3 credits
General survey of historical development, basic doctrine, and practice of Hinayana and Mahayana Buddhism.

Cross-listed as: RELS 3010.

**HIST 3020 - Introduction to Hinduism**
3 credits

Surveys history, doctrinal developments, and sociological concerns of Hinduism from the Vedic Period through the Modern Period. Focuses primarily on Hindu religious thought as applied to Hindu life through various modes of religious action.

Cross-listed as: RELS 3020.

**HIST 3070 - Perspectives in Folklore (DHA)**
DHA Depth Humanities and Creative Arts
3 credits

In-depth study of folklore for nonmajors. Topics vary according to faculty expertise.

Cross-listed as: ENGL 3070.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Summer

**HIST 3110 - Ancient Near East (DHA/CI)**
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Survey of history and civilization of ancient Mesopotamia, Egypt, and Israel, from prehistory to 500 B.C. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Cross-listed as: ARTH 3110.

Semester(s) Traditionally Offered: Spring

**HIST 3130 - Greek History (DHA/CI)**
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

History of Greece from Neolithic period to modern times. Special emphasis on politics, art, literature, and civilization. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Cross-listed as: CLAS 3160.

**HIST 3150 - Roman History (CI)**
CI Communications Intensive
3 credits

History of Rome from Neolithic era to “fall” of the Western Empire. Special emphasis on politics, art, literature, and civilization. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Spring

**HIST 3160 - Classical Drama and Society**
3 credits

Review and analysis of the nature and function of ancient Greek and Roman drama in its theatrical, historical, and social context. Focuses on the major dramatists of classical antiquity.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

**HIST 3220 - Medieval European Civilization, 500-1500 (DHA/CI)**
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Provides students with overview of major themes in medieval European history from 500 to 1500 A.D. Also introduces major historiographical problems related to this period. Writing intensive and document based.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Fall, Spring

**HIST 3230 - Early Modern Europe**
3 credits

Explores major themes of early modern European history, such as secularization, the rise of the nation...
state, the Reformation, and the birth of capitalism. Introduces major historiographical issues of the period. Reading and writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3240 - Modern Europe from 1789 to the Present
3 credits

Historical survey of Europe from the French Revolution to the present, with special emphasis on political and cultural implications of imperialism.

Prerequisite/Restriction: HIST 1110.

HIST 3250 - Renaissance Europe 1300 to 1520 (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Emphasizing writing and primary sources, covers significant changes in Europe in government, society, and intellectual life caused by the Black Death, the humanist revolution in arts and literature, and the centralizing efforts of popes and monarchs.

HIST 3260 - History of Spain and Portugal
3 credits

History of Iberian peninsula from fifteenth century to the present. Age of Exploration, conquest and colonization in the Americas and Africa, eighteenth century reforms, constitutional monarchies, civil wars, and twentieth century dictatorships. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3280 - East Central Europe Since 1520
3 credits

Examines history of East Central Europe, with special emphasis on growth of nationalism and establishment of the states of Czechoslovakia, Hungary, and Poland. Emphasizes research and writing.

HIST 3310 - Balkans Since 1389
3 credits

Examines history of Balkan peninsula, with special emphasis on growth of nationalism and establishment of Bulgaria, Albania, Greece, Romania, and Yugoslavia. Emphasizes research and writing.

HIST 3320 - Tsarist Russia
3 credits

Political, economic, and cultural development of Russian people to 1917. Writing and computer intensive.

HIST 3330 - The Soviet Union and its Heirs
3 credits

Beginning with the Russian Revolution, surveys political, cultural, and economic history of the Soviet Union and the regional states emerging in its wake. Writing and computer intensive.

HIST 3410 - The Modern Middle East
3 credits

Examines history of the Middle East (Arabian peninsula, Fertile Crescent, Egypt, Iran, and Turkey), with special emphasis on social and political currents which have shaped the area's history.

HIST 3460 - Comparative Asian History
3 credits

Surveys history of Asian continent, analyzing common patterns in the cultures of West, South, Southeast, and East Asia.

HIST 3480 - History of China
3 credits

Development of traditional Chinese culture and effect on that culture of the growth of Western influence. Writing and computer intensive.

HIST 3489 - Medieval Japan
3 credits

This course is a survey of the History of Japan from the last years of the Tokogawa Period (1850's). From that point it will explore the development of Japan's culture, social, and economic evolution. It will cover Japan's transition form a Feudal society, virtually hidden from
the world, to a competitive world power. It will then analyze the conditions and issues of Japan Today.

HIST 3490 - Modern Japan
3 credits

This course is a survey of the History of Japan from the last years of the Tokogawa Period (1850’s). From that point it will explore the development of Japan’s culture, social, and economic evolution. It will cover Japan’s transition from a Feudal society, virtually hidden from the world, to a competitive world power. It will then analyze the conditions and issues of Japan Today.

Semester(s) Traditionally Offered: Fall

HIST 3510 - Africa and the World
3 credits

Explores foundation of Africa’s contemporary problems. Surveys Africa’s history of interactions with Asia and Europe. In addition to writing several short essays covering readings and films, students investigate an aspect of cultural, political, or economic interaction and prepare a short research paper.

HIST 3530 - African Environmental History
3 credits

Surveys changing historical relationship between Africans and their physical environment. Readings cover ecological change in arid, savanna, rain forest, and montane environments. Students also survey and evaluate the methods and sources used by environmental historians to explain environmental stress, degradation, and rehabilitation.

HIST 3550 - Culture of East Asia (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Helps students explore and appreciate the culture of three East Asian countries: China, Japan and Korea. Students gain sincere view and understanding of these East Asian cultures through readings, hands-on cultural activities, viewing video materials, writing, and discussions. Topics include: major historical and social events, customs and traditions, thoughts and beliefs, people, food, contemporary issues, art, literature, and film.

Cross-listed as: ANTH 3550 and LANG 3550.

HIST 3620 - History of Colonial Latin America
3 credits

Surveys art, culture, religion, and social organization of the Aztecs, Incas, and Mayas, and of the European dominated post-conquest. Introduces students to major historiographical problems in the field.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3630 - History of Modern Latin America
3 credits

Introduces history and historiography of Latin America from the wars of independence to the contemporary era. Writing intensive.

HIST 3640 - History of Social Movements in Latin America
3 credits

Examines the changing nature of social movements in Latin America from the nineteenth century to the present. Topics include social movements concerning citizenship, religion, unions, feminism, torture, poverty, indigenous rights, and environmentalism.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3650 - Caribbean History
3 credits

Surveys the Caribbean from pre-Columbian cultures to the present, with special emphasis on slavery, colonialism, piracy, immigration, independence and revolutionary movements, nation-building, artistic creation, and tourism.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3660 - History of Mexico
3 credits

Surveys Mexico from the rise of indigenous states to the present, with special emphasis on indigenous culture, colonialism, independence, the U.S.-Mexican War, the French Intervention, the Mexican Revolution, political reform, everyday life, globalization, and border issues.
Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3670 - Slavery in the Atlantic World
3 credits

Examines slavery in the Americas from the Atlantic perspective (including Africa and Europe) from the Fifteenth Century until abolition, with special emphasis on the slave trade, the plantation system, daily life, slavery and race, resistance, the Haitian Revolution, and abolition in the Americas.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

HIST 3700 - Regional Folklore (CI)
CI Communications Intensive
3 credits

Study of folklore and folklife as they relate to regional cultures.

Cross-listed as: ENGL 3700.

Semester(s) Traditionally Offered: Fall, Spring

HIST 3710 - Folklore Colloquium (CI)
CI Communications Intensive
3 credits

Issues, problems, and methodologies in folklore study. Focus and instructor variable.

Cross-listed as: ENGL 3710 and RELS 3710.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

HIST 3720 - Colonial America
3 credits

Advanced survey of North American Colonies, emphasizing British experience, from their founding to 1763. Addresses major issues of interpreting America’s beginnings.

Semester(s) Traditionally Offered: Fall

HIST 3730 - The New American Nation
3 credits

Advanced survey of American history from 1763 to 1800, with special emphasis on historiography of the Revolution, creation of a Republic, and efforts to define the New Nation.

Semester(s) Traditionally Offered: Spring

HIST 3740 - United States in the Age of Jefferson and Jackson
3 credits

Examines history of United States from 1800 to 1846, from election of Jefferson to outbreak of war with Mexico.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Fall

HIST 3750 - Civil War and Reconstruction
3 credits

Analysis of most trying period in U.S. history, with special emphasis on the course and results of the war.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Spring

HIST 3755 - The Gilded Age (U.S. 1877-1900)
3 credits

Examines national politics, culture, and social and economic change in late nineteenth-century America.

HIST 3760 - The United States, 1900-1945 (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Analyzes scholars’ approaches to U.S. history in the early twentieth century, with attention to socio-economic change, political reform, and transforming impact of American involvement in two world wars. Writing intensive.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Spring
HIST 3770 - Contemporary America, 1945-Present
3 credits

Domestic and foreign policy since World War II. Emphasizes Cold War, Civil Rights, and the political and social developments of contemporary United States. Contains intensive writing component.

Semester(s) Traditionally Offered: Fall

HIST 3840 - Twentieth Century American West
3 credits

Considers emerging scholarly literature about the American West in the twentieth century, with attention to economic, environmental, and demographic questions.

Semester(s) Traditionally Offered: Spring

HIST 3850 - History of Utah (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Prehistory to the present. Examines environment and peoples of Utah, emphasizing use of primary documents to view and interpret Utah's past. Reading and writing intensive. Requires use of USU Special Collections and Archives.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Spring

HIST 3950 - Environmental History (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Surveys writings from a relatively new genre of historical scholarship that attempts to explain the relationship between human society and the natural world. Readings focus on North America, but students also have opportunity to survey materials from the non-Western world. Course is reading and writing intensive, and requires students to conduct a research project in which they construct the history of a particular landscape.

HIST 4010 - Buddhism in the West
3 credits

One-semester introduction to Buddhism in the Western world for nonspecialists in Buddhism. Focuses on development of Buddhism as a Western religious phenomenon. Presents interpretive, historical introduction to Buddhism in the West.

Cross-listed as: RELS 4010.

HIST 4210 - Celtic Europe
3 credits

History of Celtic peoples in British Isles, Scandinavia, and continental Europe, from Neolithic times to the Norman Conquest in 1066. Computer intensive.

Cross-listed as: ARTH 4210.

Semester(s) Traditionally Offered: Fall

HIST 4230 - The History of Christianity in the West (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Introduces students to history of Christian spirituality, asking how Christianity has been lived and how it has shaped lives over two thousand years. Uses original sources to introduce both the history and the historiographical problems surrounding the Christian religion. Writing intensive.

HIST 4250 - The Reformation in Britain: 1450-1688
3 credits

Focuses on major research questions in the field of early modern studies. Explores causes and consequences of English Reformation and British Civil War. Writing and research intensive.

HIST 4290 - Europe and the French Revolution, 1700-1815
3 credits

Examines causes and consequences of the French Revolution, introducing students to major themes in its interpretation.

HIST 4310 - History of Nationalism
3 credits

Examines development of nationalism. Addresses
different theories of nationalism, and then tests these theories with various case studies. Emphasizes research and writing.

HIST 4330 - Modern Germany with Special Emphasis on the Twentieth Century
3 credits

Historical survey of Germany beginning with Frederick the Great of Prussia, and considering the parallel history of the Habsburg empire and the Germany of the Kleinstaaterei. Considers wars and economic and political developments beginning in 1871, which produced the Nazi period.

Prerequisite/Restriction: HIST 1110.

HIST 4350 - Greek Intellectual History
3 credits

Through reading and discussing Greek literature and philosophy, attempts to understand the major Greek philosophers, in the context of the major literary authors of the period and contemporary political developments.

Prerequisite/Restriction: CLAS 3210.

Semester(s) Traditionally Offered: Spring

HIST 4390 - British Imperialism from 1688 to the Present
3 credits

Topical survey of British Imperialism from 1688 to the present. Topics include the interaction of British imperialism with foreign policy; social, economic, and political institutions; the life of the mind and senses; and non-European cultures.

Prerequisite/Restriction: HIST 1110.

HIST 4400 - History of Aviation and Aeronautics (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Traces aeronautics from its origins to the present day. Examines selected topics concerning flight within the earth’s atmosphere from an international perspective, with particular emphasis on the United States of America.

HIST 4510 - The History of Urban America
3 credits

Examines the history of communities, cities, and suburbs in American history, from the Colonial era to the present. Explores how forces, including immigration, economic growth, and technological change, shaped American cities. Also examines subjects connected to urban history, including architectural history, as well as the history of landscape architecture and urban planning.

HIST 4550 - Women and Gender in America (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Writing intensive course drawing on film, primary documents, and readings to trace the history of women, emphasizing race, class, and gender influences of each era.

Cross-listed as: WGS 4550.

Semester(s) Traditionally Offered: Fall

HIST 4560 - Women in Islam (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Within a religious and historical framework, it explores topics such as gender and social roles, women’s rights, veiling and dress, female circumcisions, arranged marriages, education, employment, parenting, honor killings, and politics in the lives of Islamic women. A basic knowledge of Islam is recommended before enrolling.

Cross-listed as: RELS 4560

HIST 4600 - The History of the American West (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Traces major themes in nineteenth century history of the land between the Mississippi River and the Pacific Coast. In a writing intensive course, students use primary documents and secondary materials to discover the race, class, and gender issues that shaped the American West.

HIST 4610 - Themes and Methods in Economic History
3 credits

Themes and methods in economic history, drawing on various societies and time periods. Designed to prepare future historians to work in their field.
Prerequisite/Restriction: Fulfillment of Quantitative Literacy (QL) requirement through coursework or examination (General Education Requirements)

HIST 4620 - Advanced Seminar in American Studies (CI)
CI Communications Intensive
3 credits

Practical introduction to theories and methods of American Studies, utilizing interdisciplinary research around a central theme, subject, or text(s). Strongly recommended for American Studies majors and American Studies minors. Open to students who have taken three courses in literature and/or history.

Cross-listed as: ENGL 4620.

Semester(s) Traditionally Offered: Fall, Spring

HIST 4630 - The History of Mexican Americans
3 credits

Reading-intensive and writing-intensive course, examining the historical experiences of Mexican Americans, from prior to the U.S. annexation of Northern Mexico in 1848 to the present. Special emphasis given to immigration and migration, labor, gender, race and ethnicity, and the social and cultural evolution of Mexican Americans within American society.

HIST 4640 - Studies in the American West (CI)
CI Communications Intensive
3 credits

Interdisciplinary course in American Studies, exploring the region of the West through the analysis of literary texts, historical sources, and socio-cultural materials.

Cross-listed as: ENGL 4640.

Semester(s) Traditionally Offered: Fall, Spring

HIST 4700 - Folk Material Culture
3 credits

Study of folk objects and their connections with culture and history.

Cross-listed as: ENGL 4700.

Semester(s) Traditionally Offered: Spring

HIST 4710 - American Indian History
3 credits

Prehistory to the present. Emphasizes ethnohistory and the Western U.S., focusing on intercultural contacts, subsistence and environmental change, and contemporary political and economic issues, while analyzing primary documents and secondary readings.

Semester(s) Traditionally Offered: Fall

HIST 4711 - Northern Ute History
3 credits

This course will cover the history of the Northern Utes from the earliest records up to the present. Historical analysis and methodology will also be taught and specific assignments given to assist each student understand methodology from within the context of Ute History.

HIST 4720 - The Civil Rights Movement (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits

Traces struggle of black Americans for equality since emancipation, with emphasis on the post-World War II period. Focuses on the individuals and social trends that laid the groundwork for change by the mid-Twentieth Century.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Fall, Spring

HIST 4730 - History of Black America (CI)
CI Communications Intensive
3 credits

Study of African-American experience from slavery to freedom, as well as the difficult quest for democracy and equality in contemporary America. Includes both creative and research writing components.

Semester(s) Traditionally Offered: Spring

HIST 4740 - American Immigration History
3 credits

Examines history of immigration to the United States from Europe, Africa, Latin America, and Asia. Requires...
library research, especially in government documents, and use of oral history techniques.

Semester(s) Traditionally Offered: Fall

HIST 4750 - Advanced Folklore Workshop: Fife Conference
3 credits

Focuses on one theme or topic in folklore, and offers lectures from nationally prominent scholars in the area. Taught during one week, every day and all day.

Cross-listed as: ENGL 4750.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

HIST 4780 - American Financial History (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Explores American financial history from the nineteenth century to the present. Covers historical development of the U.S. banking system, the stock market, coins and currency, the Federal Reserve system, accounting practices, credit, monetary policy, taxation, and personal finance.

Semester(s) Traditionally Offered: Spring

HIST 4790 - American Religious History
3 credits

Varieties of American religious experience from settlement to the present.

Cross-listed as: RELS 4790.

Semester(s) Traditionally Offered: Fall

HIST 4795 - Biography, Autobiography and Joseph Smith
3 credits

Examines the life and thought of one of America’s most complex and creative religious figures.

Cross-listed as: RELS 4795.

HIST 4800 - The Supreme Court and American Constitutional History
3 credits

Examines many of the major arguments made about the Constitution, which were presented before the Supreme Court of the United States.

Cross-listed as: POLS 4800.

HIST 4810 - American Military History
3 credits

Covers evolution of the military in American history and society from 1775 to the present.

HIST 4820 - World War II in Europe
3 credits

Focuses exclusively on World War II developments in the ETO. That is, the efforts of the Allied forces, mainly the United States, Britain, the Soviet Union, Free France, Canada, and resistance fighters and British Commonwealth soldiers against the expansion and occupation of most of Eurasia by Nazi Germany and/or Fascist Italy. Covers the chronology of 1939 to 1945. Included in the course’s scope is the Holocaust.

Semester(s) Traditionally Offered: Spring

HIST 4821 - World War II in Asia (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Focuses on Japanese and Allied fighting in the Pacific and the Asian mainland from 1937 to 1945. British, French, and Dutch losses in Asia to Japan, as well as efforts to recover them. U.S.-Japanese conflict in the Pacific Theater.

Semester(s) Traditionally Offered: Spring

HIST 4840 - The American Republic in the World to 1920 (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Examines the sources, implications, and meaning of the American republic’s interaction with the world to 1920. Extends beyond conventional American foreign relations to consider transnational perspectives. Topics include the Industrial Revolution, American economic and territorial expansion, and World War I.

Semester(s) Traditionally Offered: Spring
HIST 4841 - The American Republic in the World since 1890 (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Examines the sources, implications, and meaning of the American republic's interaction with the world since 1890. Extends beyond conventional American foreign relations to consider transnational perspectives. Topics include World Wars I and II, the Cold War, and globalization.

Semester(s) Traditionally Offered: Fall

HIST 4850 - Interpreting the Past for Teachers
3 credits

Focuses on nonformal educational experiences open to secondary school students outside of the classroom. Interpretive modes examined include historical film, documentaries, living history programs, history fairs and festivals, and historical novels and magazines.

Semester(s) Traditionally Offered: Fall, Spring

HIST 4860 - Teaching History
3 credits

Designed to introduce history teaching majors to ethical and methodological issues arising in history classroom.

Semester(s) Traditionally Offered: Fall

HIST 4870 - Teaching World History: Themes, Approaches, and Materials
3 credits

For history teaching majors and minors only. Introduces students to a number of approaches to the study and teaching of world history. Students survey theoretical and pedagogical literature, then assemble a course package, which is presented to their peers.

Semester(s) Traditionally Offered: Spring

HIST 4880 - History Workshop: Special Topics
1-3 credits

Focuses on a theme or topic in history.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 4890 - Cold War in Asia (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Explores history of the Cold War conflicts in Korea and Vietnam, from Asian and American perspectives. Students ascertain the economic, political, military, environmental, diplomatic, psychological, and demographic implications of these conflicts for the U.S., as well as for the Asians involved.

Semester(s) Traditionally Offered: Fall, Spring

HIST 4891 - Cold War: Vietnam and Afghanistan (DHA)
DHA Depth Humanities and Creative Arts
3 credits


HIST 4910 - Special Studies in History
3 credits

Examination of special areas and themes in history.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 4930 - Directed Readings
1-3 credits

Directed readings in any special historical field. For each credit granted, minimum of four books must be read.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

HIST 4940 - Historical Internship
1-3 credits

Directed internship involving participation in a historical research or cultural management project.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 4945 - Archives Management/Archives Internship
3 credits

Through a mixture of lecture, discussion, and hands-on activities, provides an introduction to archives and
archival practices. Examines archival practices in the real world, and discusses how archival institutions interact with the public in general and with historians in particular. Drawing on his experience as a professional archivist, the instructor uses materials held in USU Special Collections and Archives to teach this course.

Cross-listed as: HIST 6840.

HIST 4990 - Special Topics in History (CI)
CI Communications Intensive
3 credits

Senior history seminar emphasizing historiographical literacy, research, and writing skills in relation to a specific historical topic. Prerequisites: Lower- and upper-division courses in areas relating to topic in question.

Prerequisite/Restriction: Enrollment limited to history majors with senior standing only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 5690 - American Studies Capstone Seminar (CI)
CI Communications Intensive
3 credits

Required for students majoring in American Studies. Enables students to synthesize American Studies theory and methods with interdisciplinary cognate courses. Supports senior thesis design and writing, allowing topics to reflect individual programs of study.

Cross-listed as: ENGL 5690.

Semester(s) Traditionally Offered: Spring

HIST 5700 - Folk Narrative
3 credits

Forms and functions of folk narrative genres: myth, legend, folktale, memorate, and ballad.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement and completion of a 3000-level course having an ANTH, ENGL, or HIST prefix.

Cross-listed as: ANTH 5700 and ENGL 5700.

Semester(s) Traditionally Offered: Spring
topics in early modern European history.

Repeatable for credit.

HIST 6160 - Special Topics: Modern European History
3 credits

Intensive readings and group discussions of selected topics in modern European history.

Repeatable for credit.

HIST 6200 - Special Topics: Comparative World History
3 credits

Intensive readings and group discussions of selected topics in comparative world history.

Repeatable for credit.

HIST 6230 - Special Topics: Middle Eastern History
3 credits

Intensive readings and group discussions of selected topics in middle eastern history.

Repeatable for credit.

HIST 6260 - Special Topics: Asian History
3 credits

Intensive readings and group discussions of selected topics in Asian history.

Repeatable for credit.

HIST 6300 - Special Topics: African History
3 credits

Intensive readings and group discussions of selected topics in African history.

Repeatable for credit.

HIST 6330 - Special Topics: Latin American History
3 credits

Intensive readings and group discussions of selected topics in Latin American history.

Repeatable for credit.

HIST 6400 - Special Topics: American History
3 credits

Intensive readings and group discussions of selected topics in American history.

Repeatable for credit.

HIST 6410 - Special Topics in Mormon History and Culture
3 credits

Intensive readings and group discussions of selected topics in Religious Studies. A.

Cross-listed as: RELS 6410.

Repeatable for credit.

HIST 6420 - Special Topics in Religious History
3 credits

Intensive reading and group discussions of selected topics in Religious History

Cross-listed as: RELS 6420

Repeatable for credit

HIST 6430 - Special Topics: Western American History
3 credits

Intensive readings and group discussions of selected topics in Western American history.

Repeatable for credit

HIST 6460 - Seminar in Environmental History
3 credits

Focuses on historical writings seeking to explain relationship between society and nature. Many of assigned readings are set in the non-Western world.

HIST 6500 - Archiving Internship
2-4 credits

Directed internship at a regional archive. Internship should reflect eight to sixteen hours of work per week during the semester.
HIST 6520 - Editing Internship
2 credits

Training in requirements of editorial work in scholarly journals and books. Emphasis placed on editing techniques and mechanics of editorial work. Can be repeated once for credit.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6540 - Museum Internship
2-4 credits

Directed internship at a regional museum. Internship should reflect eight to sixteen hours of work per week during the semester.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6560 - Professional Internship
2-4 credits

Directed internship involving participation in a historical research project for a government agency, corporation, municipality, or some other entity.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6580 - Teaching Internship
2 credits

Involves working with the teacher of an upper-division undergraduate course. Intern prepares, explains, and grades one of the written assignments in the course, as well as completing work required of the undergraduates. Can be repeated once for credit.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6600 - American Studies Theory and Method
3 credits

Provides students with theory and method of graduate-level research in American Studies.

Cross-listed as: ENGL 6600.

Semester(s) Traditionally Offered: Fall

HIST 6610 - Seminar on the American West
3-4 credits

Readings and research on topics in the American West. Interdisciplinary focus suitable for graduate students in History and American Studies.

Cross-listed as: ENGL 6610.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

HIST 6620 - Seminar in Native American Studies
3-4 credits

Readings and research on topics in Native American history and culture. Interdisciplinary focus suitable for graduate students in History and American Studies.

Cross-listed as: ENGL 6620.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

HIST 6630 - Studies in Native American Studies
3 credits

Offered annually on a rotating basis by professors in folklore and English (Cultural Studies, Literature, British and Commonwealth). Topics and theoretical approaches vary, but the primary focus is on feature films.

Cross-listed as: ENGL 6630.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

HIST 6700 - Folklore Theory and Method
3 credits

Serves as orientation for new graduate students in folklore. Introduces students to comparative annotation,
folklore indices, oral-formulaic theory, performance theory, contextual analysis, and other approaches.

Cross-listed as: ENGL 6700.

Semester(s) Traditionally Offered: Fall

HIST 6710 - Space, Place and Folklore
3 credits

Study of expressive culture in relation to space and place in social theory. Perspectives range from ideas about landscape and region to globalization.

Cross-listed as: ENGL 6710.

Semester(s) Traditionally Offered: Spring

HIST 6720 - Folklore Fieldwork
3 credits

Basic methodology class for folklorists and oral historians. Students learn interviewing techniques and other methods for observing and recording the performance of tradition and traditional history.

Cross-listed as: ENGL 6720.

Semester(s) Traditionally Offered: Fall, Spring

HIST 6730 - Public Folklore
3 credits

Provides history and analysis of governmental involvement in protecting, promoting, and otherwise manipulating and utilizing cultural heritage.

Cross-listed as: ENGL 6730.

Semester(s) Traditionally Offered: Fall, Spring

HIST 6740 - Folk Narrative
3 credits

Covers principal narrative genres in folk tradition (myth, tale, legend, ballad) and the basic theories for their analysis and discussion.

Cross-listed as: ENGL 6740.

Semester(s) Traditionally Offered: Spring

HIST 6750 - Advanced Folklore Workshop: Fife Conference
3 credits

Intensive workshop focusing on a topic in folklore. Brings in nationally known experts as lecturers and discussants. Taught during one week, every day and all day.

Cross-listed as: ENGL 6750.

Semester(s) Traditionally Offered: Summer

HIST 6760 - Cultural and Historical Museums
3 credits

Examines outdoor cultural and historical museums, examining their function in modern multi-cultural societies.

Cross-listed as: ENGL 6760.

Semester(s) Traditionally Offered: Spring

HIST 6770 - Seminar in Folklore and Folklife
3 credits

Conducts close, professional-level study of major areas of folklore and folklife research.

Cross-listed as: ENGL 6770.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6800 - Paleography
3 credits

Skills course covering subjects such as technology of writing, interpretation of hands, and mastery of abbreviations. Useful to any student working with old manuscripts, it is essential for those writing theses in medieval or early modern European history.

HIST 6820 - Writing Scholarly Reviews
3 credits

Prepares students for writing, editing, and publishing reviews in their chosen discipline. Taught by book review editors at Western American Literature and Western Historical Quarterly.
HIST 6840 - Archives Management/Archives Internship
3 credits

Through a mixture of lecture, discussion, and hands-on activities, provides an introduction to archives and archival practices. Examines archival practices in the real world, and discusses how archival institutions interact with the public in general and with historians in particular. Drawing on his experience as a professional archivist, the instructor uses materials held in USU Special Collections and Archives to teach this course.

Cross-listed as: HIST 4945.

HIST 6860 - Historical Criticism: Practicum
1-3 credits

Preparation of critiques for student-presented projects entered into Utah History Fair state-wide competition. Operation of one-day workshop for History Fair finalists.

HIST 6880 - Special Topics: Advanced History Workshop
1-3 credits

From teaching values of democracy in public school setting to writing publishable biographies, Department of History sponsors advanced credit workshops on a range of subjects.

Repeatable for credit.

HIST 6900 - Directed Studies
1-3 credits

Directed readings in any special historical field. For each credit granted, a minimum of four books must be read. Instructor signature required.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6970 - Thesis Research
1-6 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

HIST 6990 - Continuing Graduate Advisement
1-6 credits

Repeatable for credit.

HONR 1300 - U.S. Institutions (BAI)
BAI Breadth American Institutions
3 credits

Interdisciplinary course providing basic understanding of history, principles, form of government, and economic system of the United States.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall

HONR 1320 - Civilization: Humanities (BHU)
BHU Breadth Humanities
3 credits

Interdisciplinary course providing basic understanding of broad range of themes cutting across human history and continuing to be important in contemporary society. Covers both Western and non-Western civilization.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall, Spring

HONR 1330 - Civilization: Creative Arts (BCA)
BCA Breadth Creative Arts
3 credits

Interdisciplinary course providing basic understanding of broad range of themes cutting across human history and continuing to be important in contemporary society. Covers both Western and non-Western civilization.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall, Spring

HONR 1340 - Social Systems and Issues (BSS)
BSS Breadth Social Sciences
3 credits

Interdisciplinary course that considers how a society of self-interested individuals can live together in peace and
Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall, Spring

HONR 1350 - Integrated Life Science (BLS)
BLS Breadth Life Sciences
3 credits

Interdisciplinary course focusing on basic concepts of life science. Demonstrates role of modeling, prediction, and observation in the process of scientific discovery, which occurs within an historical and social context.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall

HONR 1360 - Integrated Physical Science (BPS)
BPS Breadth Physical Sciences
3 credits

Interdisciplinary course focusing on basic concepts of physical science, including structure of matter and magnitude and character of the forces of nature. Demonstrates role of modeling, prediction, and observation in the process of scientific discovery, which occurs within an historical and social context.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall, Spring

HONR 2000 - Scholars Forum
1 credit

Includes orientation to the Honors Program and to undergraduate research. Gateway to the Honors Program for entering first-year students.

Campus: Online.
Semester(s) Traditionally Offered: Fall

HONR 2100 - Honors Inquiry Seminar
1 credit

Introduces students to the nature of inquiry in their field or major. Sections are major-specific. Assists students in planning their undergraduate education to enable them to graduate with Honors.

Prerequisite/Restriction: Admission to Honors Program. Required for Honors in University Studies.

Semester(s) Traditionally Offered: Spring

HONR 2200 - Honors Enrichment
0.5 credit

Provides opportunity for Honors students to enhance their academic experience by attending and reflecting on a series of colloquia, as well as cultural and arts events. During the semester, students attend activities chosen from a menu prepared by the Honors Program. Each event affords an opportunity to react in writing, as well as orally during the bimonthly seminars. Grading based on attendance, participation, and written work.

Prerequisite/Restriction: Admission to Honors Program.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

HONR 3010 - Special Topics: Life and Physical Sciences (DSC)
DSC Depth Life and Physical Sciences
3 credits

Focuses on basic scientific concepts and methods of inquiry used by scientists. Considers science from a broad perspective, showing how various disciplines are related.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Semester(s) Traditionally Offered: Fall, Spring

HONR 3020 - Special Topics: Humanities/Creative Arts (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Humanities section focuses on important historical and contemporary cultural themes, both Western and non-Western. Creative Arts section examines one or more art forms across cultures. Covers several forms of art. Students attend concerts, visit galleries, and attend
theatrical performances.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

HONR 3030 - Special Topics: Social Sciences (DSS)
DSS Depth Social Sciences
3 credits

Examines one or more social institutions and asks how we live within these structures from the perspectives of different disciplines.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

HONR 3900 - Independent Study
1-3 credits

Independent research, library and/or laboratory work, or creative effort working in a one-to-one relationship with a faculty member.

Prerequisite/Restriction: Limited to students actively pursuing an Honors degree.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

HONR 4000 - Reading Seminar
1-3 credits

Opportunity to read, discuss, and write about books and current events.

Prerequisite/Restriction: Open only to students enrolled in USU Honors Program.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

HONR 4700 - Honors Fellows
0.5 credit

Upper-division Honors students assist in leading Honors seminars and tutorials.

Semester(s) Traditionally Offered: Fall, Spring

HONR 4800 - Thesis/Project Seminar
1 credit

Oral presentation and discussion of Honors senior theses/projects. Guest presentations focus on essential contrasts and similarities in “ways of knowing” among various academic specialties.

Semester(s) Traditionally Offered: Fall, Spring

HONR 4900 - Senior Thesis/Project
1-3 credits

All Honors students are required to submit a senior thesis/project for graduation with an Honors degree. Thesis/project may be in any area of student's choice, prepared in cooperation with an advisor drawn from the faculty at large.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 1000 - Information Literacy
3 credits

Designed to develop ability to locate, evaluate, and use information. Develops competencies needed for lifelong pursuits of information through the use of libraries and electronic resources.

Semester(s) Traditionally Offered: Fall, Spring

INST 3500 - Technology Tools for Secondary Teachers
1 credit

Integration of technology into the teaching/learning environment. Practical, hands-on experience for preservice secondary teachers. Use of a variety of technological tools. Introduction to current standards for teachers. Application of technology as both process and product.

Prerequisite/Restriction: Admittance to teacher education.

INST 4010 - Principles and Practices of Technology for Elementary Teachers
3 credits
Integrated experience for pre-service elementary teachers to apply instructional design principles in their instruction. Hands-on experience using a wide variety of technological tools in practical learning environments. Application of technology as both process and product.

Prerequisite/Restriction: Admittance to teacher education.

INST 4015 - Technology Tools and Integration for Teachers
1-3 credits

Integrated experience for pre-service teachers to apply instructional design principles in their instruction. Hands-on experience using a wide variety of technological tools with integration in practical learning environments. Application of technology as both process and product.

Prerequisite/Restriction: Admittance to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

INST 4210 - Information Access and Literacy Skills
2 credits

Information problem-solving skills basic to lifelong information access in today’s networked world. Used as part of the Engineering and Technology Education/Instructional Technology minor program.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Spring

INST 4210 - Introduction to Learning Theories
3 credits

Detailed study of communication and learning theories as applied to instructional design process. Examines principles and research upon which instructional design and instructional technology are based. Used as part of the Engineering and Technology Education/Instructional Technology minor program.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Spring

INST 4230 - Introduction to Adult Learning
3 credits

Covers philosophical and theoretical foundations of adult education, as well as practical applications for incorporating them into current educational settings. Used as part of the Engineering and Technology Education/Instructional Technology minor program.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Spring

INST 4250 - Instructional Design I
3 credits

Guided experience in analysis, design, and development of instructional product development utilizing the ADDIE model. Used as the first project experience for the Engineering and Technology Education degree and the Instructional Technology undergraduate minor.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Spring

INST 4260 - Instructional Design II
3 credits

Guided experience in development, implementation, and evaluation of instructional product development utilizing the ADDIE model. Used as the second project experience for the Engineering and Technology Education degree and the Instructional Technology undergraduate minor.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Spring

INST 4290 - Applying Instructional Design
3 credits

Individual experience in instructional product development utilizing the ADDIE model. Used as the capstone experience for the Engineering and Technology Education degree and the Instructional Technology undergraduate minor.

Campus: Taught off campus through special programs.
Semester(s) Traditionally Offered: Fall

INST 4300 - Clinical Experience in School Library Media
1 credit

School library media clinical observation experience. Students involved in observing management and assisting in middle and secondary library media centers,
Prerequisite/Restriction: Minimum of 40 hours of observation experience required.

Semester(s) Traditionally Offered: Spring

INST 4500 - Integration and Innovation of Technology in Education
1 credit

Based on current educational standards, and using appropriate tools, students design and create an electronic/digital portfolio specific to content area(s) of their anticipated teaching license. Emphasizes integration of technology as both product and process.

Prerequisite/Restriction: Admittance to teacher education.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 4910 - Undergraduate Research and Creative Opportunity
1-3 credits

Cooperative process of discovery, investigation, research, or creativity between faculty and one or more students. Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 5000 - SLM Foundations and Information Management
3 credits

Introduction to historical and philosophical foundations of library media programs. Examines role of library media programs in schools and their contributions to the curriculum. Explores circulation, cataloging, automation tools, technical services, policies, and techniques. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6060.

Campus: Also taught off campus.

Northern campus.

INST 5015 - SLM Collection Development and Literature
3 credits

Focuses on building, maintaining, and evaluating collections for library media programs. Discusses policy development for selection, protecting intellectual freedom, and reviewing, evaluating, and maintaining materials in all formats. Explores children’s and young adult literature. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6015.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Fall

INST 5025 - SLM Programs and Instructional Development
3 credits

Presents a wide variety of activities which are integral to a school library media program, including reading guidance, instructional development, curriculum development, media skill instruction, and information literacy. Emphasizes collaboration within schools. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6025.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Spring

INST 5030 - Information Access, Literacy, and Technology
3 credits

Introduction to finding information and resources using print and electronic sources. Emphasizes reference services, knowledge of basic reference/information sources, and resource sharing; and teaching information retrieval strategies within a school library media program. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6030.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Fall

INST 5040 - SLM Center Administration and Leadership
3 credits

Includes study of organization, personnel, budgets, programs, and management of a library media center.
Students define their role within a school setting and in relation to that of the principal and teachers. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 5000/INST 6060 and INST 5025/INST 6025 or permission of instructor.

Cross-listed as: INST 6040.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Summer or Arranged

INST 5090 - School Library Media Practicum
1-6 credits

Observation and guided field experience in a library media center under professional library media specialists and instructional technology professionals. Bridge of theory into practice. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 5025/INST 6025, INST 5040/INST 6040; or permission of instructor.

Cross-listed as: INST 6090.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 5105 - Distance Education Tools
3 credits

Focuses on issues and methods of teaching and learning in distance education. Students develop strategies for effectively integrating technologies and facilitating learning at a distance. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6105.

Semester(s) Traditionally Offered: Summer

INST 5120 - Distance Education Projects
3 credits

Application of theory, principles, and practice, providing instruction to learners separated from the instructor by distance and/or time. Addresses characteristics, technologies, and current issues of distance education. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6120.

Semester(s) Traditionally Offered: Fall

INST 5130 - Technology and its Role in the Transformation of Education
1-3 credits

Explores the critical role of educational technology as one tool in the transformation of education. Involves students in change-related projects in the local environment. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6730.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Summer

INST 5140 - Producing Distance Education Resources
3 credits

Focuses on production of Internet-based instructional resources for use in distance, flexible, and open learning. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6140.

Semester(s) Traditionally Offered: Fall, Spring

INST 5160 - Distance Learning K-12
3 credits

Designed for classroom teachers. Discusses technologies and applications of distance education to elementary and secondary school settings. Focuses on instructional strategies for effective teaching and learning at a distance. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6160.

Campus: Taught off-campus.
Semester(s) Traditionally Offered: Spring

INST 5195 - Practicum in Distance Learning
3 credits
Students demonstrate effective practice by applying instructional development principles for designing, implementing, and evaluating instruction for distant learners. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 5105/INST 6105, INST 5120/INST 6120.

Cross-listed as: INST 6195.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

INST 5200 - Principles and Practices of Technology for Secondary Teachers
2 credits

Integrated experience for pre-service secondary teachers to apply instructional design principles in their instruction. Hands-on experience using a wide variety of technological tools in practical learning environments. Application of technology as both process and product.

Prerequisite/Restriction: Admittance to teacher education.

Semester(s) Traditionally Offered: Fall, Spring

INST 5205 - Computer Applications for Instruction and Training
3 credits

Introduction to use of computer applications, with special emphasis on software used in instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6205.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 5215 - Digital Video Capture and Production
3 credits

Fundamental theories and practice in design and development for camera and computer-based audio and video production, including recording, editing, and digitizing audio and video segments for education and training applications. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6215.

Semester(s) Traditionally Offered: Fall, Summer

INST 5225 - Digital Audio
3 credits

Explores basic concepts of digital audio, synthesis, and sign processing. Establishes proficiency with sound programs, as well as audio editing and sound design tools. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6225.

Semester(s) Traditionally Offered: Spring, Summer

INST 5230 - Instructional Graphic Production
3 credits

Fundamental practices of using the computer to design and produce a wide variety of instructional graphics and animations. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6230.

Semester(s) Traditionally Offered: Fall, Spring

INST 5235 - DVD Design and Production
3 credits

Fundamental theories and practice in the design and development of Digital Video Disc (DVD) based instructional resources. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6235.

Semester(s) Traditionally Offered: Fall, Summer

INST 5245 - Interactive Multi-Media Production
3 credits

Covers fundamental programming concepts, in addition to fundamentals of the interactive multi-media environment. Students finishing this course will have at least one completed fully-functional project for their portfolios. To receive graduate-level credit, students must fulfill additional requirements.
INST 5255 - Computer-Based Instruction Authoring
3 credits

Fundamentals of programming computer-based instruction utilizing current authoring systems. Overview of computer-based design issues, including interface/screen design, instructional strategy and interaction, and computer program logic. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: Basic computer competencies.

Cross-listed as: INST 6255.

Semester(s) Traditionally Offered: Spring, Summer

INST 5265 - Internet Development
3 credits

Teaches web publishing primarily using HTML (Hyper-Text Markup Language). Explores current web technologies and includes design, development, and evaluation. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6265.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 5275 - Multimedia Special Topic Studio I
3 credits

Selected special topics related to the development of multimedia products for instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6275.

Repeatable for credit.

INST 5285 - Multimedia Special Topic Studio II
3 credits

Selected special topics related to the development of multimedia products for instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6285.

INST 5290 - Multimedia Production for Instruction and Training
3 credits

Geared toward assisting master's students in completing their degrees. Provides continuity from the first semester and encourages continued professional development in the discipline. Can be used as capstone experience for multimedia development minor. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 5215/INST 6215, INST 5230/INST 6230, INST 5255/INST 6255, INST 5265/INST 6265.

Cross-listed as: INST 6290.

Semester(s) Traditionally Offered: Spring

INST 5405 - Educational Technology Tools Fundamentals
3 credits

Designed for practicing classroom teachers. Guides teachers in using research-based principles to apply and teach using technology tools to support their classroom assessment and curriculum standards. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6405.

Semester(s) Traditionally Offered: Summer

INST 5410 - Assessment and Educational Standards
3 credits

Designed for practicing classroom teachers. Focuses on basic fundamentals of backward design and instructional practices. Also examines practice examples. Development of backward design unit applied to personal teaching situations. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6410.
Semester(s) Traditionally Offered: Summer

INST 5415 - Implementation of Technology in Education K-12
3 credits

Designed for practicing classroom teachers. Examines educational value of project-based learning and the constructionist model of effective learning. Focuses on practical application of research. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6415.

Semester(s) Traditionally Offered: Summer

INST 5420 - Educational Technology Tools Integration
3 credits

Designed for practicing classroom teachers. Using their own classroom, participants do a class study on low-performance students, create a technology intervention to enhance student performance, and document changes in student behavior and attitudes. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6420.

Semester(s) Traditionally Offered: Fall

INST 5425 - Technology and Inquiry Based Lessons
3 credits

Designed for practicing classroom teachers. Backward design model used to create powerful, inquiry-based lessons. Investigates role of technology in engaging students in meaningful educational experiences. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6425.

Semester(s) Traditionally Offered: Fall

INST 5430 - Educational Technology K-12 Practicum
3 credits

Designed for practicing classroom teachers. Provides opportunities for teachers to work with small groups of children and a master teacher having experience in directing technology in a classroom setting. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 6430.

Semester(s) Traditionally Offered: Summer

INST 5750 - Instructional Technology Workshop
1-4 credits

Special training and experience in latest concepts and innovations in instructional technology. Content changes to reflect most recent topics and problems facing the profession.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

INST 5900 - Independent Study
1-4 credits

Individually directed study and projects.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6015 - SLM Collection Development and Literature
3 credits

Focuses on building, maintaining, and evaluating collections for library media programs. Discusses policy development for selection, protecting intellectual freedom, and reviewing, evaluating, and maintaining materials in all formats. Explores children's and young adult literature. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5015.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Fall

INST 6025 - SLM Programs and Instructional Development
3 credits

Focuses on building, maintaining, and evaluating collections for library media programs. Discusses policy development for selection, protecting intellectual freedom, and reviewing, evaluating, and maintaining materials in all formats. Explores children's and young adult literature. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5015.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Fall

INST 6025 - SLM Programs and Instructional Development
3 credits

Focuses on building, maintaining, and evaluating collections for library media programs. Discusses policy development for selection, protecting intellectual freedom, and reviewing, evaluating, and maintaining materials in all formats. Explores children’s and young adult literature. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5015.

Campus: Also taught off campus.
development, media skill instruction, and information literacy. Emphasizes collaboration within schools. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5025.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Spring

INST 6030 - Information Access, Literacy, and Technology
3 credits

Introduction to finding information and resources using print and electronic sources. Emphasizes reference services, knowledge of basic reference/information sources, and resource sharing; and teaching information retrieval strategies within a school library media program. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5030.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Spring

INST 6040 - SLM Center Administration and Leadership
3 credits

Includes study of organization, personnel, budgets, programs, and management of a library media center. Students define their role within a school setting and in relation to that of the principal and teachers. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 6060/INST 5000 and INST 6025/INST 5025 or permission of instructor.

Cross-listed as: INST 5040.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Summer or Arranged

INST 6060 - SLM Foundations and Information Management
3 credits

Introduction to historical and philosophical foundations of library media programs. Examines role of library media programs in schools and their contributions to the curriculum. Explores circulation, cataloging, automation tools, technical services, policies, and techniques. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5000.

Campus: Also taught off campus.
Semester(s) Traditionally Offered: Fall

INST 6090 - School Library Media Practicum
1-6 credits

Observation and guided field experience in a library media center under professional library media specialists and instructional technology professionals. Bridge of theory into practice. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 6025/INST 5025, INST 6040/INST 5040; or permission of instructor.

Cross-listed as: INST 5090.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6101 - Strategies and Skills for Online Learning
2 credits

Addresses critical topics related to time and space management, network connections, information management, desktop skills, and working in a virtual environment.

Prerequisite/Restriction: Matriculation into ITLS Department.

Semester(s) Traditionally Offered: Summer

INST 6105 - Distance Education Tools
3 credits

Focuses on issues and methods of teaching and learning in distance education. Students develop strategies for effectively integrating technologies and facilitating learning at a distance. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5105.
Semester(s) Traditionally Offered: Summer

INST 6120 - Distance Education Projects
3 credits
Application of theory, principles, and practice, providing instruction to learners separated from the instructor by distance and/or time. Addresses characteristics, technologies, and current issues of distance education. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 6105/INST 5105.

Cross-listed as: INST 5120.

Semester(s) Traditionally Offered: Fall

INST 6140 - Producing Distance Education Resources
3 credits
Focuses on production of Internet-based instructional resources for use in distance, flexible, and open learning. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5140.

Semester(s) Traditionally Offered: Fall, Spring

INST 6160 - Distance Learning K-12
3 credits
Designed for classroom teachers. Discusses technologies and applications of distance education to elementary and secondary school settings. Focuses on instructional strategies for effective teaching and learning at a distance. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5160.

Campus: Taught off campus.

Semester(s) Traditionally Offered: Spring

INST 6195 - Practicum in Distance Learning
3 credits
Students demonstrate effective practice by applying instructional development principles for designing, implementing, and evaluating instruction for distant learners. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 6105/INST 5105, INST 6120/INST 5120.

Cross-listed as: INST 5195.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

INST 6205 - Computer Applications for Instruction and Training
3 credits
Introduction to use of computer applications, with special emphasis on software used in instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5205.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6215 - Digital Video Capture and Production
3 credits
Fundamental theories and practice in design and development for camera and computer-based audio and video production, including recording, editing, and digitizing audio and video segments for education and training applications. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5215.

Semester(s) Traditionally Offered: Fall, Summer

INST 6225 - Digital Audio
3 credits
Explores basic concepts of digital audio, synthesis, and sign processing. Establishes proficiency with sound programs, as well as audio editing and sound design tools. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5225.

Semester(s) Traditionally Offered: Spring, Summer
INST 6230 - Instructional Graphic Production
3 credits

Fundamental practices of using the computer to design and produce a wide variety of instructional graphics and animations. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5230.

Semester(s) Traditionally Offered: Fall, Spring

INST 6235 - DVD Design and Production
3 credits

Fundamental theories and practice in the design and development of Digital Video Disc (DVD) based instructional resources. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5235.

Semester(s) Traditionally Offered: Fall, Summer

INST 6245 - Interactive Multi-Media Production
3 credits

Covers fundamental programming concepts, in addition to fundamentals of the interactive multi-media environment. Students finishing this course will have at least one completed fully-functional project for their portfolios. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5245.

Semester(s) Traditionally Offered: Spring, Summer

INST 6255 - Computer-Based Instruction Authoring
3 credits

Fundamentals of programming computer-based instruction utilizing current authoring systems. Overview of computer-based design issues, including interface/screen design, instructional strategy and interaction, and computer program logic. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: Basic computer competencies.

Cross-listed as: INST 5255.

Semester(s) Traditionally Offered: Spring, Summer

INST 6265 - Internet Development
3 credits

Teaches web publishing primarily using HTML (Hyper-Text Markup Language). Explores current web technologies and includes design, development, and evaluation. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5265.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6275 - Multimedia Special Topic Studio I
3 credits

Selected special topics related to the development of multimedia products for instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5275.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6285 - Multimedia Special Topic Studio II
3 credits

Selected special topics related to the development of multimedia products for instruction and training. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5285.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6290 - Multimedia Production for Instruction and Training
3 credits
Geared toward assisting master's students in completing their degrees. Provides continuity from the first semester and encourages continued professional development in the discipline. Can be used as capstone experience for multimedia development minor. To receive graduate-level credit, students must fulfill additional requirements.

Prerequisite/Restriction: INST 6215/INST 5215, INST 6230/INST 5230, INST 6255/INST 5255, INST 6265/INST 5265.

Cross-listed as: INST 5290.

Semester(s) Traditionally Offered: Spring

INST 6300 - MEd Orientation
1 credit

Geared toward assisting master's students in completing their degrees. Provides continuity from the first semester and encourages continued professional development in the discipline.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Semester(s) Traditionally Offered: Summer

INST 6310 - Foundations of Educational Technology
3 credits

Explores foundations, history, perspectives, and literature in the field. Enables students to think more critically about their efforts and career goals.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Semester(s) Traditionally Offered: Fall

INST 6325 - Communication, Instruction and the Learning Process
3 credits

Examination of learning theory and communication theory, and their implications for instruction.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Campus: Taught off campus.

Semester(s) Traditionally Offered: Spring

INST 6350 - Instructional Design Process I
3 credits

Examines key techniques in design of instruction. Applies principles to specific design problems. Introduces techniques for developing instructional products according to completed designs.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Campus: Taught off campus.

Semester(s) Traditionally Offered: Summer

INST 6355 - Instructional Design Process II
3 credits

Continued exposure to design models, principles, and techniques. Integrates project management skills with design procedures. Based on their situation, students design and develop an instructional product.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Semester(s) Traditionally Offered: Fall

INST 6370 - Design and Development of Computer-Based Instruction
3 credits

Overview of computer-based design issues, including interface/screen design, instructional strategy and interaction, and computer program logic. Includes hands-on experience with authoring systems.

Campus: Taught off-campus through EDNET.

Semester(s) Traditionally Offered: Fall

INST 6390 - Planning, Resources, and Implementation for Technology
3 credits

Principles and practice of implementing innovations into real-world settings and evaluating their effectiveness.

Prerequisite/Restriction: Matriculation into Instructional Technology MEd program.

Campus: Taught off campus.

Semester(s) Traditionally Offered: Summer

Semester(s) Traditionally Offered: Spring
INST 6405 - Educational Technology Tools Fundamentals
3 credits
Designed for practicing classroom teachers. Guides teachers in using research-based principles to apply and teach using technology tools to support their classroom assessment and curriculum standards. To receive graduate-level credit, students must fulfill additional requirements.
Cross-listed as: INST 5405.
Semester(s) Traditionally Offered: Summer

INST 6410 - Assessment and Educational Standards
3 credits
Designed for practicing classroom teachers. Focuses on basic fundamentals of backward design and instructional practices. Also examines practice examples. Development of backward design unit applied to personal teaching situations. To receive graduate-level credit, students must fulfill additional requirements.
Cross-listed as: INST 5410.
Semester(s) Traditionally Offered: Summer

INST 6415 - Implementation of Technology in Education K-12
3 credits
Designed for practicing classroom teachers. Examines educational value of project-based learning and the constructionist model of effective learning. Focuses on practical application of research. To receive graduate-level credit, students must fulfill additional requirements.
Cross-listed as: INST 5415.
Semester(s) Traditionally Offered: Summer

INST 6420 - Educational Technology Tools Integration
3 credits
Designed for practicing classroom teachers. Using their own classroom, participants do a class study on low-performance students, create a technology intervention to enhance student performance, and document changes in student behavior and attitudes. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5420.
Semester(s) Traditionally Offered: Fall

INST 6425 - Technology and Inquiry Based Lessons
3 credits
Designed for practicing classroom teachers. Backward design model used to create powerful, inquiry-based lessons. Investigates role of technology in engaging students in meaningful educational experiences. To receive graduate-level credit, students must fulfill additional requirements.
Cross-listed as: INST 5425.
Semester(s) Traditionally Offered: Fall

INST 6430 - Educational Technology K-12 Practicum
3 credits
Designed for practicing classroom teachers. Provides opportunities for teachers to work with small groups of children and a master teacher having experience in directing technology in a classroom setting. To receive graduate-level credit, students must fulfill additional requirements.
Cross-listed as: INST 5430.
Semester(s) Traditionally Offered: Summer

INST 6501 - MS Orientation
1 credit
Geared toward transitioning students to become successful graduate-level students. Provides continuity and interaction between local and distance students to create a single learning community. Encourages continued professional development in the discipline.
Prerequisite/Restriction: Matriculation into Instructional Technology MS program.
Semester(s) Traditionally Offered: Fall

INST 6505 - Foundations of Instructional Technology
3 credits
Considers the present, past, and future of instructional technology, while helping individual student to develop personal understanding of and orientation to the field.
Prerequisite/Restriction: Matriculation into Instructional Technology MS program.

Semester(s) Traditionally Offered: Fall

INST 6510 - Research and Evaluation in Instructional Technology
3 credits

Detailed study of methodologies for needs assessment, product evaluation, validation, and research. Includes methodological models, data collection, and data interpretation for both formative and summative evaluation.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring

INST 6520 - Projects in Instructional Technology
3 credits

Introduction to the process of Instructional Systems Design (ISD) using Analysis, Design, Development, Implementation, and Evaluation (ADDDIE). Includes introductory combination of theory and application to create an instructional product using the ISD process.

Prerequisite/Restriction: Matriculation into Instructional Technology MS program.

Semester(s) Traditionally Offered: Fall

INST 6530 - Instructional Design and Development Studio
3 credits

Focuses on the utilization and critique of not only finished instruction, but also Instructional Design Theory, as well as a reverse-engineered look at Instructional Systems Design (ISD).

Prerequisite/Restriction: INST 6520 and matriculation into Instructional Technology MS program.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

INST 6540 - Learning Theory
3 credits

Detailed study of communication and learning theories as applied to the instructional design process. Examines principles and research upon which instructional design and instructional technology are based.

Prerequisite/Restriction: Matriculation into Instructional Technology MS program.

Semester(s) Traditionally Offered: Fall

INST 6570 - Performance Systems
3 credits

Application of theory, principles, and practice of organizational systems and human competence in designing performance support systems, job aids, and just-in-time instruction.

Semester(s) Traditionally Offered: Fall

INST 6630 - Instructional Simulations
3 credits

Application of theory, principles, and practice of instructional simulations for use within organizational systems and improvement of human performance.

Semester(s) Traditionally Offered: Fall

INST 6650 - Research Seminar
1 credit

Provides opportunity for exchange of ideas by Instructional Technology master's students pursuing a Plan A option. Includes discussion of publications and products.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6710 - Instructional Development Tools
3 credits

Detailed study of processes, tools, and techniques for guiding and aiding the instructional design process. Emphasizes tools for project management, analysis, and design.

Semester(s) Traditionally Offered: Fall

INST 6720 - Instructional Technology in Adult Education
3 credits
Application of theory, principles, and practice of instructional technology in providing instruction to adult learners.

Semester(s) Traditionally Offered: Spring, Summer

INST 6730 - Technology and its Role in the Transformation of Education
1-3 credits

Explores the critical role of educational technology as one tool in the transformation of education. Involves students in change-related projects in the local environment. To receive graduate-level credit, students must fulfill additional requirements.

Cross-listed as: INST 5130.

Campus: Also taught off campus.

Semester(s) Traditionally Offered: Summer

INST 6740 - Instructional Evaluation
2 credits

Examines theories and implementation of both formative and summative evaluation of instruction. Includes expert and learner feedback, rapid prototyping, and cost analysis.

Prerequisite/Restriction: Matriculation into Instructional Technology MS program.

Semester(s) Traditionally Offered: Spring

INST 6750 - Instructional Technology Workshop
1-4 credits

Special training and experience in the latest concepts and innovations in instructional technology. Content changes reflecting the most recent topics and problems facing the profession.

Repeatable for credit.

Semester(s) Traditionally Offered: Summer

INST 6760 - Grant Writing
3 credits

Introduction to the many facets of grant writing. Students write a grant proposal for submission to a funding agency and reflectively critique other proposals.

Semester(s) Traditionally Offered: Taught on demand

INST 6770 - Practicum in the Improvement of Instruction
1-4 credits

A field-based program focused upon characteristics of effective teaching methodologies, teaching performance, curriculum decision making, value guidelines, and the characteristics of the learner.

Repeatable for credit.

Semester(s) Traditionally Offered: Taught on demand

INST 6775 - Computers in Education for In-service Teachers
3 credits

Introduction to microcomputer applications in education for in-service teachers. Includes hands-on experiences with range of software tools for design, production, and administration.

Campus: Taught off campus.

Semester(s) Traditionally Offered: Taught on demand

INST 6780 - Instructional Technology Programs
1-3 credits

Designed primarily as an in-service experience for teachers, trainers, administrators, and instructional technology personnel to improve local programs and services.

Repeatable for credit.

Semester(s) Traditionally Offered: Taught on demand

INST 6790 - Instructional Technology in Education and Training
1-3 credits

Offered on request to instructional designers, teachers, administrators, and media personnel who have special needs related to instructional technology and seek assistance in improving their local programs.

Repeatable for credit.

Semester(s) Traditionally Offered: Taught on demand

INST 6870 - Current Issues Seminar
1-3 credits
Allows exploration of new cutting-edge topics in the field. Topics vary and are announced the semester prior to registration. Topics may be theory or practice based.

Repeatable for credit.
Semester(s) Traditionally Offered: Arranged

INST 6900 - Independent Study
1-6 credits
Individually directed study and projects.

Prerequisite/Restriction: Permission of department.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6910 - Independent Research
1-6 credits
Individually directed research.

Prerequisite/Restriction: Permission of department.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6940 - Internship
1-6 credits
An on-site experience in which the student applies knowledge and skills in a work environment. Used as culminating experience for the MS or MEd, Plan C.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6960 - Creative Project
1-6 credits
Individual experience in instructional product development. May be used as the culminating experience for the MEd and MS Plan C.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6970 - Thesis
1-6 credits
Individual work in MS thesis and Plan B report writing with guidance and criticism.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 6990 - Continuing Graduate Advisement
1-8 credits
Allows students access to faculty and facilities to complete graduate thesis, project, and papers.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7000 - Pro-seminar I in Instructional Technology
3 credits
Lectures and discussions on advanced topics in instructional technology and related disciplines. Required for Instructional Technology EdS and PhD students.

Prerequisite/Restriction: Admission to PhD program in Instructional Technology and Learning Sciences or admission to EdS program in Instructional Technology is required prior to enrollment.

Semester(s) Traditionally Offered: Fall

INST 7010 - Pro-seminar II in Instructional Technology
3 credits
Continuation of INST 7000. Lectures and discussions on advanced topics in instructional technology and related disciplines. Required for Instructional Technology EdS and PhD students.

Prerequisite/Restriction: INST 7000. Admission to PhD program in Instructional Technology and Learning Sciences or admission to EdS program in Instructional Technology is required prior to enrollment.

Semester(s) Traditionally Offered: Spring

INST 7150 - Advanced Seminar in Instructional Technology
3 credits

In-depth study of various topics including learning theory, instructional design, instructional theory, instructional development tools, production techniques, and instructional applications in different cultures. Specific topics for each semester will be announced.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7200 - Quantitative and Design Research in Instructional Technology
3 credits

Examines current trends, applications, methods, and research questions that are appropriate to the use of quantitative and design research within the field of instructional technology.

Semester(s) Traditionally Offered: Fall

INST 7300 - Research in Instructional Technology and Learning Sciences
3 credits

Provides doctoral students with opportunities to achieve further depth in their research skills, as well as opportunities for obtaining additional knowledge by critiquing existing designs and approaches of instructional technology and learning sciences investigation. Emphasizes building research designs, with the intention of creating more exposure and experience regarding the role technology plays in the way people learn.

Semester(s) Traditionally Offered: Fall

INST 7450 - Internship in Program Evaluation
1-4 credits

Experience in practical aspects of program evaluation through planned, supervised evaluation project. Participation must be approved by student's supervisory committee.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7460 - Internship in Research
1-4 credits

Experience in conducting research through planned, supervised evaluation project. Participation must be approved by student's supervisory committee.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7820 - Practicum in Instructional Technology
2 credits

Requires four practica selected from the following: funding proposal, product/research, review product development, evaluation, empirical investigation, and teaching.

Prerequisite/Restriction: Permission of instructor. Enrollment limited to Instructional Technology EdS and PhD students only.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7870 - Current Issues Seminar
1-3 credits

Allows exploration of new cutting edge topics in the field. Topics vary and are announced the semester prior to registration. Topics may be theory or practice based.

Repeatable for credit.
Semester(s) Traditionally Offered: Arranged

INST 7900 - Independent Study
1-6 credits

Individually directed study and projects.

Prerequisite/Restriction: Permission of department.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7910 - Independent Research
1-6 credits

Provides for individually directed research.

Prerequisite/Restriction: Permission of department.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7920 - College Teaching Seminar
1-3 credits
Develops skills and knowledge necessary for college teaching. Activities are designed to help participants in a variety of areas, including instructional development and presentation skills development.

Semester(s) Traditionally Offered: Arranged

INST 7960 - Practicum, Educational Specialist
1-9 credits
Culminating project/externship in partial fulfillment of the Educational Specialist degree.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7970 - Dissertation
1-18 credits
Individual work on research problems in the PhD program.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

INST 7990 - Continuing Graduate Advisement
1-9 credits
Allows graduate students access to faculty and facilities to complete graduate dissertation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Intensive English Language Institute
IELI 1120 - Writing I
4 credits
Develops writing skills at the high-beginning level. Focuses on description, narration, grammar, and appropriate word order at sentence and paragraph levels.

Semester(s) Traditionally Offered: Fall, Spring, Summer
IELI 1160 - Reading I
4 credits
Focuses on comprehension of expository texts at a high-beginning level. Emphasizes word knowledge, vocabulary development, knowledge of sentence structure, and general organization of text.

Semester(s) Traditionally Offered: Fall, Spring, Summer
IELI 1220 - Writing from Sources
4 credits
Focuses on sentence and paragraph writing at a low-intermediate level. Students gather information from various sources, organize it, and present it in written form.

Semester(s) Traditionally Offered: Fall, Spring, Summer
IELI 1230 - Cross-Cultural Talk
3 credits
Multilevel course designed to improve oral communication through small group work and one-on-one conversation with American undergraduate teaching fellows. Emphasizes interactive language fluency. Repeatable for credit for students who place at the basic level on the IELI placement exam.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
IELI 1240 - Integrated Skills
3 credits
Multilevel speaking, reading, writing, and listening course, with an emphasis on listening, designed to develop language skills through content-based instruction. Repeatable for credit for students who place at Level 1 on the IELI placement exam.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
IELI 1260 - Reading II
4 credits
Focuses on comprehension of texts at the low-intermediate level, with an emphasis on distinguishing main ideas from supporting ideas, active reading, summarizing, and increasing vocabulary.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2310 - Comprehending Authentic Discourse
3 credits

Focuses on listening and note-taking of authentic passages, such as interviews, news reports, university lectures, and documentaries. Develops strategies for comprehension and organization of information.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2320 - Writing from Authentic Texts
4 credits

Focuses on developing writing skills at the intermediate level, moving from the paragraph to the academic essay. Students learn to acknowledge sources and use the library and the Internet to inform their writing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2330 - Spoken Discourse and Cross-Cultural Communication
3 credits

Emphasizes interpersonal communication and academic tasks with American undergraduate classroom assistants. Focuses on the dynamics of small-group interactions.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2360 - Reading Authentic Texts
4 credits

Focuses on comprehension of academic and popular-media texts including articles from newspapers, magazines, and web pages. Awareness of discourse organization and development of academic vocabulary are emphasized.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2410 - Comprehending Lecture Discourse
3 credits

Develops techniques for understanding the planned and spontaneous academic discourse of university classrooms. Focuses on information processing.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2420 - Writing from Academic Sources
4 credits

Introduces students to academic writing demands. Students gather information from various sources, such as interviews, surveys, and academic texts; analyze and summarize the information; and write documented essays and reports.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2440 - Academic Discourse
3 credits

Designed to assist students in developing oral competency, with emphasis on comprehensibility in academic presentations.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2450 - Topics for ESL
4 credits

Introduces contemporary topics, which vary by semester and level. Focuses on language development through content-based instruction. Repeatable for up to 12 credits.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2460 - Reading from Academic Sources
4 credits

Focuses on processes and strategies for a variety of academic and disciplinary genres, with a special emphasis on the basic university textbook; strategies for learning from textbooks and other materials relevant to reading for academic purposes; and vocabulary study.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2470 - Cross-Cultural Perspectives (BSS)
BSS Breadth Social Sciences
4 credits

Designed to be taken by IELI students. Brings together
students from a variety of ethnic backgrounds for the purpose of cultural exploration. Students examine the influence of culture on beliefs, behaviors, and values.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 2475 - Cross-Cultural Explorations (BSS)  
BSS Breadth Social Sciences  
3 credits

Designed to be taken by American undergraduates who are native English speakers. Brings together students from a variety of ethnic backgrounds for the purpose of cultural exploration. Students examine the influence of culture on beliefs, behaviors, and values.

Semester(s) Traditionally Offered: Fall, Spring, Summer

IELI 7920 - College Teaching Seminar  
1-3 credits

Workshop for international students who will hold teaching assistantships at USU. Focuses on culturally and pedagogically appropriate behaviors for American undergraduate students. Includes micro-teaching practicum. Prerequisites: Students must demonstrate oral English proficiency.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall

Interdisciplinary Studies

ITDS 4900 - Senior Thesis/Project  
3 credits

Students majoring in Interdisciplinary Studies are required to complete a 3-credit thesis or project as part of the major. The thesis or project must be either a research paper or a creative activity appropriate to the theme of the Interdisciplinary Studies major. Each student works with his or her faculty advisor to determine an appropriate topic of study or a project. The student and advisor outline the protocol and parameters of the thesis or project.

Prerequisite/Restriction: Permission of instructor.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

Interior Design

ID 1700 - Interior Design Professional Seminar  
1 credit

Weekly seminars to provide an orientation to the professional aspects of interior design. Exploration of related careers and professional societies. Invited participation by outside speakers. Repeatable for up to eight credits.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring

ID 1740 - Computer Applications in Interior Design  
3 credits

Introduction to software specifically related to discipline of interior design. Computer techniques taught using personal computers and related peripherals.

Prerequisite/Restriction: Enrollment limited to interior design majors only  
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 1750 - Design in Everyday Living (BCA)  
BCA Breadth Creative Arts  
3 credits

Investigation of the basic elements and principles of design related to everyday living experiences and the practical application of relevant theory.

Semester(s) Traditionally Offered: Fall, Spring

ID 1760 - Rapid Visualization in Interior Design  
3 credits

Students develop and hone abilities in and understanding of various types of rapid visualization in interior design.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 1770 - History of Interior Furnishings and Architecture I  
3 credits

Identification of historical architectural styles and elements in interior furnishings and materials, dating from ancients, middle ages, Italian renaissance, the Hispanic periods, and the French periods.

Semester(s) Traditionally Offered: Fall
ID 1780 - History of Interior Furnishings and Architecture II
3 credits

Identification of historical architectural styles and elements in interior furnishings and materials, including the English period and the American period, Victorian through the present.

Semester(s) Traditionally Offered: Spring

ID 1790 - Interior Design Theory
3 credits

Explores basic philosophy of interior design. Analyzes design elements and principles when applied to interior spaces. Evaluation of contemporary design theories as factors influencing design trends.

Prerequisite/Restriction: Interior Design Majors or pre-majors only

Semester(s) Traditionally Offered: Spring

ID 2710 - Architectural Graphics I
3 credits

Competency development in use of drafting tools, symbols, and techniques used in interior design presentation. Includes communication skills related to techniques and approaches to graphic presentations of interior design solutions: floor plans, elevations, sections, axonometrics, details, and dimensioning.

Semester(s) Traditionally Offered: Fall

ID 2720 - Architectural Graphics II
3 credits

Introduction to three-dimensional drawing: isometric and perspective. Development of methods of rapid graphic communication techniques and approaches to complete professional presentations. Exploration of various types of media and presentation methods.

Prerequisite/Restriction: ID 2710.

Semester(s) Traditionally Offered: Spring

ID 2730 - Interior Space Planning and Human Dimensions
3 credits

Focuses on physical, psychological, and human factors influencing design of interior space. Includes research, programming, analysis, and design of residential and nonresidential spaces.

Prerequisite/Restriction: ID 2710.

Semester(s) Traditionally Offered: Spring

ID 2750 - Computer Aided Drafting and Design I
3 credits

Introduction to computer aided drafting and design for design students.

Semester(s) Traditionally Offered: Fall

ID 2760 - Computer Aided Drafting and Design II
3 credits

Advanced exploration and study of computer aided design, creative applications, and proficiencies.

Prerequisite/Restriction: ID 2750.

Semester(s) Traditionally Offered: Spring

ID 3710 - Interior Design Pre-Internship
1 credit

Preparation course for ID 4710.

Prerequisite/Restriction: Permission of instructor and junior class standing.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

ID 3730 - Interior Materials and Construction (QI)
QI Quantitative Intensive
3 credits

Identification of current interior materials; their characteristics, use, and care. Experience in specification estimation, workroom procedures, and development of a working resource file.

Prerequisite/Restriction: ID 2730.

Semester(s) Traditionally Offered: Fall
ID 3760 - Commercial Design Studio  
4 credits

Studio projects of various complexity and type, having commercial focus. May include hospitality, retail, medical, office, and other commercial and institutional design opportunities.

Prerequisite/Restriction: ID 2730.

Semester(s) Traditionally Offered: Fall

ID 3770 - Residential Design Studio  
4 credits

Studio projects of various complexity and type, having residential focus. Analysis of various approaches to problem solving. Graphic and verbal presentation, emphasizing high-end design evaluation.

Prerequisite/Restriction: ID 3760.

Semester(s) Traditionally Offered: Spring

ID 3790 - Architectural Systems  
3 credits

Study of architectural systems in contemporary buildings. Investigation of construction drawings and their interpretation. Includes related codes and professional terminology.

Semester(s) Traditionally Offered: Fall

ID 4700 - Topics in Interior Design  
3 credits

Current topics associated with interior design.

Prerequisite/Restriction: Permission of instructor and junior class standing.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 4710 - Interior Design Advanced Internship I  
3 credits

Interior design experience in applying skills and knowledge in businesses and community agencies.

Prerequisite/Restriction: Permission of instructor and junior class standing.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

ID 4730 - Environmental Design for Interiors  
3 credits

Explores global environmental issues and their impact on the design process. Includes the history, principles, and theories of sustainability; life-cycle design practices; relevant green design terminology; and the LEED Green Building Rating System.

Semester(s) Traditionally Offered: Spring

ID 4740 - Business and Professional Practices in Interior Design (CI)  
CI Communications Intensive  
3 credits

Overview of business practices and principles for interior design, including: salesmanship, marketing, client and trade relationships, establishing an interior design practice, and fee structure.

Prerequisite/Restriction: ID 4710.

Semester(s) Traditionally Offered: Spring

ID 4750 - Senior Design Studio I  
3 credits

Interior design projects focusing on research, programming, schematics, space planning, project specifications, and presentation.

Prerequisite/Restriction: Senior ranking in Interior Design and ID 4790

Semester(s) Traditionally Offered: Fall


ID 4760 - Senior Design Studio II  
3 credits

Interior design projects include finish selections,
specifications, construction document development, and project presentation.

Prerequisite/Restriction: ID 4750.

Semester(s) Traditionally Offered: Spring

ID 4770 - Senior Exhibit
1 credit

Analysis and review of student work in preparation for formal exhibition.

Semester(s) Traditionally Offered: Spring

ID 4780 - Interior Design Travel Course
1-9 credits

Travel experiences geared toward the examination of design in various geographical locations, both within the United States and abroad.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 4790 - Computer Applications of Modeling in Interior Design
3 credits

Application of software to produce a model of interior spaces, using contemporary modeling software. Graduate students will complete an animation in addition to the regular assignments.

Prerequisite/Restriction: ID 2760

Cross-listed as: ID 6760

Semester(s) Traditionally Offered: Fall, Spring

ID 4900 - Independent Study in Interior Design
1-5 credits

Focused independent activities. Students must identify a project or topic of interest and discuss with proposed instructor.

Prerequisite/Restriction: Junior class standing and approval of faculty.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 4910 - Creative Projects
1-4 credits

Creative project or practicum conducted under direction of faculty member. Topic may be initiated by student or faculty.

Prerequisite/Restriction: Junior class standing and approval of faculty.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 6700 - Graduate Topics in Interior Design
1-6 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 6710 - Graduate Internship in Interior Design
1-3 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 6720 - Research Methods in Interior Design
3 credits

Semester(s) Traditionally Offered: Fall

ID 6730 - Interior Design Graduate Studio
1-6 credits

Requires research, analysis, and production of a given subject area, including its final planning, design, and documentation. Student plans project and executes it through individual initiative and scheduled consultation with the instructor.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 6740 - Advanced Interior Design Theory
3 credits

Surveys history of interior design theory from its architectural, decorative, and societal beginnings to the present. Requires analysis and application of critical thought.
ID 6750 - Readings in Interior Design
1-3 credits

Readings about the creative process, post-occupancy evaluation, culture and environment, and design forecasting. Repeatable for up to 3 credits.

Repeatable for credit.

ID 6760 - Computer Applications of Modeling in Interior Design
3 credits

Application of software to produce a model of interior spaces, using contemporary modeling software. Graduate students will complete an animation in addition to the regular assignments.

Prerequisite/Restriction: ID 2760

Cross-listed as: ID 4790

ID 6770 - Facilities Planning and Management
3 credits

Facilities management process in large-scale organizations. Formation of facilities policies, procedures, and standards. The facilities data base, space allocations, and management process.

ID 6780 - Design Methodologies in Interior Design
3 credits

Identifies and defines various design methodologies, with regard to design solutions for interior environments.

ID 6790 - Master's Seminar in Interior Design
1-6 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

ID 6900 - Special Problems
1-3 credits

Selected problems to meet individual student interests and areas of concentration.

Prerequisite/Restriction: Graduate standing and permission of departmental faculty.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ID 6970 - Masters Thesis Research in Interior Design
1-6 credits

Repeatable for up to 6 credits.

Repeatable for credit.

ID 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

ITAL 1010 - Italian First Year I
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs. Native speaker instructor. Self-study with tutorial assistance.

Semester(s) Traditionally Offered: Fall

ITAL 1020 - Italian First Year II
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs. Native speaker instructor. Self-study with tutorial assistance.

Prerequisite/Restriction: ITAL 1010 or equivalent.

Semester(s) Traditionally Offered: Spring

ITAL 2010 - Italian Second Year I
4 credits
Second-year overview of speaking, listening, reading, and writing, with exposure to cultures and customs. Native speaker instructor. Self-study with tutorial assistance. Prerequisite: ITAL 2010 or equivalent.

Prerequisite/Restriction: ITAL 1020 or equivalent.

Semester(s) Traditionally Offered: Fall

ITAL 2020 - Italian Second Year II
4 credits

Second-year overview of speaking, listening, reading, and writing, with exposure to cultures and customs. Native speaker instructor. Self-study with tutorial assistance.

Prerequisite/Restriction: ITAL 2010 or equivalent.

Semester(s) Traditionally Offered: Spring, Summer

ITAL 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Italian culture will also be emphasized. Significant reading and work outside of class are required.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

Japanese

JAPN 1010 - Japanese First Year I
5 credits


Semester(s) Traditionally Offered: Fall

JAPN 1020 - Japanese First Year II
5 credits

Second course in beginning Japanese. Introduction to the basic 100 Kanji. Mastery of more complicated sentences, including conditional temporal, volitional, and potential expressions. Exposure to Japanese culture and customs.

Prerequisite/Restriction: JAPN 1010 or equivalent.

Semester(s) Traditionally Offered: Spring

JAPN 2010 - Japanese Second Year I
5 credits

First course in intermediate Japanese. Proficiency in reading and writing 150 additional Kanji. Mastery of the last basic grammar topics, such as passive, causative, passive causative, and giving/receiving expressions. Introduction to honorific/humble expression. Exposure to Japanese culture and customs.

Prerequisite/Restriction: JAPN 1020 or equivalent.

Semester(s) Traditionally Offered: Fall

JAPN 2020 - Japanese Second Year II
5 credits


Prerequisite/Restriction: JAPN 2010 or equivalent.

Semester(s) Traditionally Offered: Spring

JAPN 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Japanese culture will also be emphasized. Significant reading and work outside of class are required.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only
JAPN 3010 - Japanese Third Year I
4 credits
First segment of the third-year Japanese reading/writing course. Proficiency in reading and writing an additional 500 Kanji.
Prerequisite/Restriction: JAPN 2020 or equivalent.
Semester(s) Traditionally Offered: Fall
JAPN 3020 - Japanese Third Year II
4 credits
Second segment of the third-year Japanese reading/writing course. Proficiency in reading and writing an additional 500 Kanji.
Prerequisite/Restriction: JAPN 3010 or equivalent.
Semester(s) Traditionally Offered: Spring
JAPN 3050 - Japanese Calligraphy
1 credit
Study of Japanese writing system through practicing the art of calligraphy.
Cross-listed as: ART 3050.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring
JAPN 3100 - Readings in Contemporary Japanese Culture
3 credits
Introduction to contemporary Japanese culture through readings from newspapers and other source materials.
Prerequisite/Restriction: JAPN 3010 and JAPN 3020.
Semester(s) Traditionally Offered: Fall
JAPN 3510 - Japanese for the Business Environment
3 credits
Prerequisite/Restriction: JAPN 3020.
Semester(s) Traditionally Offered: Spring
JAPN 3560 - Studies in Japanese Film
3 credits
Offers an introduction to the historical and theoretical study of Japanese cinema. Course screenings include some of the films made by well-known directors during the 1960s and 1970s, as well as the cutting-edge of contemporary films.
JAPN 4250 - Internship/Coop
3-9 credits
Cooperative education through internship programs provided by companies in Japan. Intended for students participating in the U.S.-Japan internship program.
Prerequisite/Restriction: JAPN 3010, JAPN 3020, and JAPN 3510.
Semester(s) Traditionally Offered: Summer
JAPN 4920 - Japanese Language Tutoring
1 credit
Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
Journalism and Communication
JCOM 1040 - Newspaper Production
3 credits
Covers the writing, research, layout and design of the campus newspaper, “The Eagle” for first year students. Teaches computer-assisted reporting and utilizes four computer programs within the framework of the class. Emphasizes the interview, research and copy preparation of news, viewpoints, features, arts and entertainment and sports. Prepares students to enter the day-to-day print world of the communication field.
Prerequisite/Restriction: Grade of “B” or higher in high school and college English Classes and JCOM 1130.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

JCOM 1050 - Newspaper Production
3 credits
Covers the writing, research, layout and design of the campus newspaper, “The Eagle” for first year students. Teaches computer-assisted reporting and utilizes four computer programs within the framework of the class. Emphasizes the interview, research and copy preparation of news, viewpoints, features, arts and entertainment and sports. Prepares students to enter the day-to-day print world of the communication field.

Prerequisite/Restriction: Grade of “B” or higher in high school and college English Classes and JCOM 1130.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

JCOM 1130 - Beginning Newswriting for the Mass Media
3 credits

Prerequisite/Restriction: Fulfillment of Communications Literacy CL1 requirement through coursework or examination; English Proficiency Test offered through the Journalism and Communication Department; and passing scores on Computer and Information Literacy (CIL) exams.

Semester(s) Traditionally Offered: Fall, Spring, Summer

JCOM 1500 - Introduction to Mass Communication (BSS)
BSS Breadth Social Sciences
3 credits
History, philosophy, structures, and functions of the mass media (newspapers, magazines, TV and radio, advertising, and public relations) and their intersection with other social institutions. Media economics and the impacts of new technologies on media institutions and society.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 1510 - Introduction to Broadcasting
3 credits
Overview of the radio-television-cable industry with emphases to include history, technological innovations, programming practices, the business structure of the industry, and possible career paths available.

Campus: USU Eastern only

JCOM 1560 - Radio Production (Audio)
3 credits
Students will learn the history, law and current operating practices of the radio industry. Additionally, students will learn the techniques and disciplines of radio field and studio production through hands-on experience. Includes microphone setups, audio console operation and script writing. Students will learn cut/splice and digital editing. Analysis of the medium’s characteristics and practice in preparing and producing programs.

Campus: USU Eastern only

JCOM 1660 - Introduction to Television
3 credits
Study of the fundamentals of television production including design, shooting, editing, lighting techniques, and an examination of the technological underpinnings of the industry.

Campus: USU Eastern only

JCOM 1720 - Writing for Broadcast
3 credits
Writing factual and fictional materials for broadcast media. Assignments include news, commercials, public service announcements, interviews, documentaries and other types of scripts. Students will be taught proper script formats for both radio and television writing.

Prerequisite/Restriction: JCOM 1560 and JCOM 1660

Campus: USU Eastern only
JCOM 1800 - Communication Graphics
3 credits

Introduction into the design of communication projects with special emphasis on creative typography, computer-assisted layout and design as well as publication techniques.

Prerequisite/Restriction: Word processing course or permission of instructor.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

JCOM 2010 - Media Smarts: Making Sense of the Information Age (BSS)
BSS Breadth Social Sciences
3 credits

Critical analysis of the roles and performance of mass media content and messages, and their influence on society. Emphasizes critical reading of news, entertainment, and advertising content regarding women, minorities, children, and other groups. Basic mass media ethics and law.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL1 requirement through coursework or examination.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2020 - Communication Research Methods (QI)
QI Quantitative Intensive
3 credits

Covers research methods used in the mass communication field. Practical application of quantitative information within journalism and public relations. Emphasizes using numbers to help audiences make sense of issues and events.

Prerequisite/Restriction: STAT 1040; and either JCOM 1500 or JCOM 2010

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2070 - Newspaper Production
3 credits

Covers the writing, research, and layout and design of the campus newspaper, “The Eagle” for second-year students. Teaches computer-assisted reporting and utilizes four computer programs within the framework of the class. Emphasizes the interview, research and copy preparation of news, viewpoints, features, arts and entertainment and sports. Prepares students to enter the day-to-day print world of the communication field.

Prerequisite/Restriction: Grade of “B” or higher in high school and college English Classes and JCOM 1130.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

JCOM 2080 - Newspaper Production
3 credits

Covers the writing, research, and layout and design of the campus newspaper, “The Eagle” for second-year students. Teaches computer-assisted reporting and utilizes four computer programs within the framework of the class. Emphasizes the interview, research and copy preparation of news, viewpoints, features, arts and entertainment and sports. Prepares students to enter the day-to-day print world of the communication field.

Prerequisite/Restriction: Grade of “B” or higher in high school and college English Classes and JCOM 1130.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

JCOM 2160 - Introduction to Online Journalism (CI)
CI Communications Intensive
3 credits


Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, and JCOM 2010.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2180 - Beginning Photojournalism
3 credits

Theory and practice of photojournalism. Roles and functions of electronic photographic images in the news media. Practice in use of cameras and in software techniques. Students furnish cameras and some
JCOM 2220 - Introduction to Video Media  
3 credits

Introduction to the theories and practice of video production and functions in broadcasting and the electronic mass media, including concepts, techniques, and impacts of various video approaches.

Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, and JCOM 2010.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2300 - Introduction to Public Relations  
3 credits

Survey of theories and practice of public relations in a variety of business, corporate, governmental, and nonprofit organizational settings. Elements of promoting organizational messages and communicating with various publics.

Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, and JCOM 2010.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2560 - Radio Performance  
1-3 credits

Practical, hands on training experience in radio operations and production. Students will fulfill various tasks associated with the operation of the campus radio station. Students will attend a weekly meeting with the faculty advisor, produce promotional spots and underwriting, work regularly scheduled board shifts, and other duties as assigned according to the number of credit hours being attempted.

Prerequisite/Restriction: JCOM 1560

Campus: USU Eastern only

Semester(s) Traditionally Offered: Fall, Spring

JCOM 2660 - Television Practicum  
1-3 credits

Advanced study in television production. The course is project based. Projects are determined by the needs of CEU, or available outside clients.

Prerequisite/Restriction: JCOM 2220

Campus: USU Eastern only

JCOM 2977 - Cooperative Education  
1-3 credits

Provides supervised on-the-job training and experience in communication areas. Students establish learning objectives, hours to be worked, and a credit agreement with the faculty/coordinator at the beginning of the semester. Students then meet periodically with the faculty/coordinator to review progress.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

JCOM 2988 - Special Problems  
1-3 credits

Individual work to be approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

JCOM 3100 - Reporting Public Affairs (CI)  
CI Communications Intensive  
3 credits

Theory and practice of reporting public affairs, community news, and features. Emphasizes advanced news gathering techniques, understanding local political structures, news and feature writing skills, interviewing, media law, ethics, and cultural sensitivity.

Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, and JCOM 2010.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3110 - Beyond the Inverted Pyramid (CI)  
CI Communications Intensive  
3 credits

Theory and practice of longer literary forms for newspapers and magazines. Feature writing, investigative and interpretive journalism, emphasizing advanced information-gathering and writing skills.
Prerequisite/Restriction: Minimum grade of C in JCOM 3100 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3120 - Copy Editing and Publication Design (CI)
CI Communications Intensive
3 credits
Editing and preparation of news stories and artwork for publication. Principles and practice of publication layout and design.

Prerequisite/Restriction: Minimum grades of C in JCOM 3100, JCOM 3200, or JCOM 3310; or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3140 - Opinion Writing (DSS)
DSS Depth Social Sciences
3 credits
Study and practice of persuasive editorial and opinion writing for the mass media.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3200 - Writing for Electronic Media
3 credits
Theory and practice of reporting public affairs for broadcast and electronic media. Emphasizes news gathering, understanding local political structures, news and feature writing, interviewing, media law, ethics, and cultural sensitivity.

Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, and JCOM 2010.

Semester(s) Traditionally Offered: Fall

JCOM 3310 - Writing for Public Relations (CI)
CI Communications Intensive
3 credits
Theory and practice of information-gathering for public relations, including basic news releases, features, speeches, annual reports, newsletters and brochures, broadcasting, and other forms. Emphasizes advanced news gathering techniques, interviewing, media law, ethics, and cultural sensitivity.

Prerequisite/Restriction: Minimum grade of C in JCOM 3310 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3320 - Strategic Research Methods in Public Relations (DSS)
DSS Depth Social Sciences
3 credits
Quantitative and qualitative research methods standard to real-life applications in public relations problems and campaigns, including survey methods, focus groups, case analysis, and strategic assessments.

Prerequisite/Restriction: Minimum grade of C in JCOM 3310 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 3410 - Film as Cultural Communication (DSS)
DSS Depth Social Sciences
3 credits
Analysis of the economic, ideological, political, and cultural constraints influencing film content.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4010 - Mass Communication Ethics (DSS)
DSS Depth Social Sciences
3 credits
Study of ethical systems and philosophies and their applications to the practice of mass communication.

Prerequisite/Restriction: Junior standing.

Cross-listed as: JCOM 6440.

Semester(s) Traditionally Offered: Spring

JCOM 4020 - Mass Media and Society (DSS)
DSS Depth Social Sciences
3 credits
Study of theories and practice of the impact of mass media in conjunction with other social institutions: political, social, cultural, ideological, economic, and religious.
Prerequisite/Restriction: Junior standing.

JCOM 4030 - Mass Media Law (DSS)
DSS Depth Social Sciences
3 credits

Principles and theories of constitutional and case law governing the mass media, including libel and privacy, copyright, press freedom, broadcast regulation, and press responsibility.

Prerequisite/Restriction: Junior standing or permission of instructor.

Cross-listed as: JCOM 6430.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4100 - Hard News Café
3 credits

Advanced reporting and writing for student news website. Includes advanced reporting techniques, photojournalism, and posting of news reports and materials to interactive website.

Prerequisite/Restriction: Minimum grade of C in JCOM 3110 or permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

JCOM 4110 - Computer-Assisted Reporting (CI)
CI Communications Intensive
3 credits

Advanced computer-based investigative and in-depth information-gathering and newswriting, including intensive use of computer databases to collect and analyze data.

Prerequisite/Restriction: Minimum grades of C in JCOM 3100 or JCOM 3200 or JCOM 3310; or permission of instructor.

Semester(s) Traditionally Offered: Spring

JCOM 4120 - Sports Writing (CI)
CI Communications Intensive
3 credits

Information-gathering and writing of news and feature stories about sports for print and electronic mass media.

Prerequisite/Restriction: Minimum grades of C in JCOM 3100 or JCOM 3200 or JCOM 3310; or permission of instructor.

Semester(s) Traditionally Offered: Spring

JCOM 4150 - Advanced Digital Photojournalism
3 credits

Advanced lab work in the use of cameras and photographic production techniques, photo imaging, and manipulation. Concludes with student exhibition of work.

Prerequisite/Restriction: Minimum grade of C in JCOM 2180 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4210 - Newscast I (CI)
CI Communications Intensive
4 credits

Basics of electronic newsgathering and writing for electronic news media. Use of electronic video equipment for creation of on-air newscast and other visual news materials.

Prerequisite/Restriction: Minimum grade of C in JCOM 2220.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4220 - Newscast II (CI)
CI Communications Intensive
4 credits

Newsroom organization and practice in electronic and video news production, including directing and producing, writing for video news, use of studio equipment, use of video production equipment, staff management, and control room operations.

Prerequisite/Restriction: Minimum grades of C in JCOM 3200 and JCOM 4210.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4230 - Corporate Video
3 credits
Project-based lab work in studio video productions for real-world clients. Use of video field equipment and production facilities. Completion of video packages.

Prerequisite/Restriction: Minimum grades of C+ in JCOM 1130, JCOM 1500, JCOM 2010, and JCOM 2220; or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4300 - Integrated Marketing Communication
3 credits

Teaches the integrated marketing functions necessary to effectively position, brand, and market a company. Provides students with opportunity to help bridge the gaps existing among management, strategic, and creative players in the design field. Prepares students to better function as effective account managers or campaign leaders in a public relations, marketing, branding, or advertising culture.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4400 - Mass Media Criticism
3 credits

Critical analysis of mass media content, emphasizing the media’s social, cultural, and political impacts. Use of advanced research techniques.

Prerequisite/Restriction: Senior standing required for enrollment in JCOM 4400; permission of instructor required for enrollment in JCOM 6400.

Cross-listed as: JCOM 6400.

Semester(s) Traditionally Offered: Spring

JCOM 4410 - Gender and the Mass Media
3 credits

Examines the nature of gender-based images in a variety of mass media, from advertising to magazines, television, and film. Analysis of gender stereotypes and portrayals in news and entertainment media, along with resulting social impacts.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; junior standing or instructor permission.

Cross-listed as: WGS 4410 and WGS 6410 and JCOM 6410

Semester(s) Traditionally Offered: Fall

JCOM 4500 - Projects in Communication
1-5 credits

Individualized directed study in communication topics, based upon student proposal to instructor. Repeatable for up to 6 credits.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

JCOM 4510 - Communication Internship
1-3 credits

Supervised, real-world training and practice in communication work places, including news and business environments. Maximum of 6 credits may count toward the student's major.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

JCOM 4520 - Senior Thesis
1-3 credits

Planning and execution of an in-depth research paper or project, as approved by the instructor, culminating in a formal public presentation. Required of all journalism and communication students for graduation in Honors Program. Students must also complete HONR 4800.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 4530 - Special Topics in Communication
3 credits

Advanced study in specialized communication topic areas. A maximum of 5 credits may be applied toward the major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
JCOM 5010 - Mass Media Historiography
3 credits
Survey of the history and development of the mass media, and their influence on other social institutions. Theory and practice of historical research, with heavy emphasis on use of databases, archival, and other primary sources to conduct original historical research.

Cross-listed as: JCOM 6010.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 5020 - Mass Communication Theory
3 credits
Advanced study of major mass communication theories and issues, and their evidence in case studies. Application of theory to significant societal problems.

Cross-listed as: JCOM 6020.

Semester(s) Traditionally Offered: Fall

JCOM 5030 - International Communications Problems
3 credits
Study of mass communication influences and effects within and between nations. Systems and techniques of mass communication as functions of national identity and development.

Cross-listed as: JCOM 6030.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 5110 - Literary Journalism (CI)
CI Communications Intensive
3 credits
In-depth analysis and practice of literary and stylistic elements of long-form journalistic and other nonfiction writers.

Cross-listed as: JCOM 6110.

Semester(s) Traditionally Offered: Fall

JCOM 5210 - Website Design and Production
3 credits
Principles and practice of planning, designing, and programming professional Web pages, including Internet communication analysis and planning, graphic design, and development using industry-standard programming languages and design applications.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: JCOM 6210.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 5220 - Advanced Video Production
3 credits
Training and practice in advanced techniques of video production, including computer graphics generation, nonlinear video editing, and other specialized professional techniques for electronic video materials.

Prerequisite/Restriction: Minimum grade of C in JCOM 4220 or JCOM 4230; or permission of instructor.

Cross-listed as: JCOM 6220.

Semester(s) Traditionally Offered: Fall

JCOM 5230 - Advanced Video Documentary Production
3 credits
Advanced production of long-form video productions and packages, including writing scripts, directing and production, control room applications, and advanced video production techniques.

Prerequisite/Restriction: Minimum grade of C in JCOM 4220 or JCOM 4230; or permission of instructor.

Repeatable for credit

Semester(s) Traditionally Offered: Spring

JCOM 5300 - Case Studies in Public Relations (CI)
CI Communications Intensive
3 credits
Advanced study and practice in public relations cases, processes, techniques, campaigns, and marketing communications strategies. Analysis of approaches to corporate reputation issues, organizational positioning, and use of mass media strategies.
JCOM 5310 - Mass Media Management
3 credits

Examines theories, methods, and practice of management of mass media businesses, including personnel, marketing, and market positioning.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: JCOM 6310.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 5320 - Public Relations Agency
3 credits

Advanced hands-on experience in real-world workings of professional public relations agency, including client communications needs analysis, communications planning, strategies, market positioning, publicity, and campaign execution.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: JCOM 6320.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 5420 - The Mass Media and Politics
3 credits

Examination of the role of the mass media in the political process, including both campaigns and governance. Examination of political advertising, news coverage, polling, opinion formation strategies, and politicians’ use of new media technologies.

Cross-listed as: JCOM 6420 and POLS 5420/POLS 6420.

Semester(s) Traditionally Offered: Fall

JCOM 6000 - Introduction to Graduate Study in Mass Communication
3 credits

Overview of mass communication theories and research methodologies designed to prepare the student for the graduate course of study and to assist in planning research agenda.

Semester(s) Traditionally Offered: Fall

JCOM 6010 - Mass Media Historiography
3 credits

Survey of the history and development of the mass media, and their influence on other social institutions. Theory and practice of historical research, with heavy emphasis on use of databases, archival, and other primary sources to conduct original historical research.

Cross-listed as: JCOM 5010.

JCOM 6020 - Mass Communication Theory
3 credits

Advanced study of major mass communication theories and issues, and their evidence in case studies. Application of theory to significant societal problems.

Cross-listed as: JCOM 5020.

Semester(s) Traditionally Offered: Fall

JCOM 6030 - International Communications Problems
3 credits

Study of mass communication influences and effects within and between nations. Systems and techniques of mass communication as functions of national identity and development.

Cross-listed as: JCOM 5030.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 6040 - Seminar in Mass Media Research Methods
3 credits

Introduction to the major theoretical perspectives and methodologies in mass communication research. Repeatable for credit with departmental permission.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring
JCOM 6050 - Seminar in Mass Media Issues and Problems
3 credits

Variable topic seminar concerning research of issues and problems in mass media principles and practice. Repeatable for credit with departmental permission.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

JCOM 6110 - Literary Journalism
3 credits

In-depth analysis and practice of literary and stylistic elements of long-form journalistic and other nonfiction writers.

Cross-listed as: JCOM 5110.
Semester(s) Traditionally Offered: Fall

JCOM 6210 - Website Design and Production
3 credits

Principles and practice of planning, designing, and programming professional Web pages, including Internet communication analysis and planning, graphic design, and development using industry-standard programming languages and design applications.

Prerequisite/Restriction: Permission of instructor.
Cross-listed as: JCOM 5210.
Semester(s) Traditionally Offered: Fall, Spring

JCOM 6220 - Advanced Video Production
3 credits

Training and practice in advanced techniques of video production, including computer graphics generation, nonlinear video editing, and other specialized professional techniques for electronic video materials.

Prerequisite/Restriction: Minimum grade of C in JCOM 4220 or JCOM 4230; or permission of instructor.
Cross-listed as: JCOM 5220.
Semester(s) Traditionally Offered: Fall

JCOM 6230 - Advanced Video Documentary Production
3 credits

Advanced production of long-form video productions and packages, including writing scripts, directing and production, control room applications, and advanced video production techniques.

Prerequisite/Restriction: Minimum grade of C in JCOM 4220 or JCOM 4230; or permission of instructor.
Cross-listed as: JCOM 5230.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring

JCOM 6300 - Case Studies in Public Relations
3 credits

Advanced study and practice in public relations cases, processes, techniques, campaigns, and marketing communications strategies. Analysis of approaches to corporate reputation issues, organizational positioning, and use of mass media strategies.

Prerequisite/Restriction: Minimum grade of C in JCOM 3320.
Cross-listed as: JCOM 5300.
Semester(s) Traditionally Offered: Fall, Spring

JCOM 6310 - Mass Media Management
3 credits

Examines theories, methods, and practice of management of mass media businesses, including personnel, marketing, and market positioning.

Prerequisite/Restriction: Permission of instructor.
Cross-listed as: JCOM 5310.
Semester(s) Traditionally Offered: Fall, Spring

JCOM 6320 - Public Relations Agency
3 credits
Advanced hands-on experience in real-world workings of professional public relations agency, including client communications needs analysis, communications planning, strategies, market positioning, publicity, and campaign execution.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: JCOM 5320.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

JCOM 6400 - Mass Media Criticism
3 credits

Critical analysis of mass media content, emphasizing the media’s social, cultural, and political impacts. Use of advanced research techniques.

Prerequisite/Restriction: Permission of instructor required for enrollment in JCOM 6400; senior standing required for enrollment in JCOM 4400.

Cross-listed as: JCOM 4400.

Semester(s) Traditionally Offered: Spring

JCOM 6410 - Gender and the Mass Media
3 credits

Examines the nature of gender-based images in a variety of mass media, from advertising to magazines, television, and film. Analysis of gender stereotypes and portrayals in news and entertainment media, along with resulting social impacts.

Prerequisite/Restriction: Enrollment in JCOM 6410 limited to graduate students only.

Cross-listed as: JCOM 4410 and WGS 6410/WGS 4410.

Semester(s) Traditionally Offered: Fall

JCOM 6420 - The Mass Media and Politics
3 credits

Examination of the role of the mass media in the political process, including both campaigns and governance. Examination of political advertising, news coverage, polling, opinion formation strategies, and politicians’ use of new media technologies.

Cross-listed as: JCOM 5420 and POLS 6420/POLS 5420.

Semester(s) Traditionally Offered: Fall

JCOM 6430 - Mass Media Law
3 credits

Principles and theories of constitutional and case law governing the mass media, including libel and privacy, copyright, press freedom, broadcast regulation, and press responsibility.

Cross-listed as: JCOM 4030.

Semester(s) Traditionally Offered: Spring

JCOM 6500 - Special Projects in Mass Communication Research and Practice
1-3 credits

Directed study into specified research or real-world problems in the mass media and mass communication industries. Repeatable for credit with departmental permission.

Prerequisite/Restriction: Departmental permission.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

JCOM 6510 - Directed Readings in Mass Communication
1-12 credits

Directed readings, tutorial or experiential learning/project in mass communication.

Prerequisite/Restriction: Instructor and department head approval.
JCOM 6600 - Internship
1-6 credits
Supervised training in selected communication work places.
Prerequisite/Restriction: Permission of graduate supervisory committee.

JCOM 6970 - Thesis Research
1-3 credits
Prerequisite: Departmental permission. Repeatable for credit with departmental permission.

JCOM 6990 - Continuing Graduate Advisement
1-3 credits
Prerequisite: Departmental permission. Repeatable for credit with departmental permission.

KOR 1010 - Korean First Year I
5 credits
Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.
Prerequisite/Restriction: KOR 1010 or equivalent.

KOR 1020 - Korean First Year II
5 credits
Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.
Prerequisite/Restriction: KOR 2020 or equivalent.

KOR 2010 - Korean Second Year I
5 credits
Development of grammatical knowledge and writing skills.
Prerequisite/Restriction: KOR 1020 or equivalent.

KOR 2020 - Korean Second Year II
5 credits
Development of advanced reading comprehension skill through discussions and summaries of a variety of texts.
Prerequisite/Restriction: KOR 2010 or equivalent.

KOR 3010 - Korean Third Year I
4 credits
Development of advanced reading, writing, and conversational skills.
Prerequisite/Restriction: KOR 2020 or equivalent.

KOR 3020 - Korean Third Year II
4 credits
Continuous development of advanced reading, writing, and conversational skills.
Prerequisite/Restriction: KOR 3010 or equivalent.

KOR 3510 - Business Korean
3 credits
Designed to help students acquire a broad knowledge of business Korean and relevant Korean culture. Develops language skills and cultural knowledge useful for performing basic functions within the Korean business environment. Focuses on important business terms, phrases, and business etiquette.
Prerequisite/Restriction: KOR 2010 or equivalent language proficiency.

Semester(s) Traditionally Offered: Fall
KOR 4920 - Korean Language Tutoring
1 credit

Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
Landscape Architecture and Environmental Planning
LAEP 1030 - Introduction to Landscape Architecture (BCA)
BCA Breadth Creative Arts
3 credits

Environment as a basis for land use and design decisions. Topics discussed include environmental awareness, the planning and design process, and design related to open space, communities, and the region. Three one-hour lectures per week.

Semester(s) Traditionally Offered: Fall, Spring, Summer
LAEP 1200 - Basic Graphics in Landscape Architecture
4 credits

Graphic techniques for landscape architectural drawings, including plans, elevations, isometrics, perspective, and rendering. Various media explored for preparing drawings and sketches for presentation. Two three-hour studios per week.

Semester(s) Traditionally Offered: Fall
LAEP 1300 - Computer Applications in Landscape Architecture
3 credits

Includes instruction in three major areas of computer applications: computer-aided design, digital image editing and manipulation, and three-dimensional modeling. Focuses on AutoCAD, Photoshop, and Sketchup.

Semester(s) Traditionally Offered: Spring
LAEP 1350 - Theory of Design
4 credits

Basic elements of design with emphasis upon their relationship to landscape architecture. Form and spatial relationships are stressed through student development of two- and three-dimensional design models. Design theory applied to materials of landform, vegetation, water, and architecture. Two three-hour studios per week.

Prerequisite/Restriction: LAEP 1200.

Semester(s) Traditionally Offered: Spring
LAEP 2250 - Internship and Cooperative Education
1-5 credits

Course credit for professional experience outside the classroom prior to graduation. A statement of professional goals and a summary report following the experience are required.
Repeatable for credit.
LAEP 2300 - History of Landscape Architecture
3 credits

An examination of landscape change in the context of its history from ancient to present times, with a primary emphasis on the visual qualities of designed landscapes. Three one-hour lectures per week.

Semester(s) Traditionally Offered: Spring
LAEP 2600 - Landscape Construction I (QI)
QI Quantitative Intensive
4 credits

Introduction to site engineering, grading, cut and fill calculation, stormwater drainage, and erosion control. Two one-hour lectures and two two-hour studios per week.

Prerequisite/Restriction: LAEP 1200 (may be taken
Semester(s) Traditionally Offered: Fall
LAEP 2650 - Architecture and the Built Environment
4 credits
Exploration of architectural form and structure in exterior environments. Emphasis placed on space created by architectural forms and their relationship to the surrounding landscape. Energy and water conservation measures with respect to the built environment.
Prerequisite/Restriction: LAEP 1200.

LAEP 2700 - Site Analysis: Social, Behavioral, and Biophysical Dimensions (CI)
CI Communications Intensive
5 credits
Site survey, analysis, and design synthesis. Focuses on human behavior and natural resources as design considerations for future land use planning. Introduces foundational site analysis methods and tools; and integrates Geospatial Information Systems (GIS) training for data interpretation.
Semester(s) Traditionally Offered: Fall
LAEP 2720 - Site Planning and Design
5 credits
Serves as a lower-division capstone course, synthesizing lower-division landscape architecture coursework and applying that knowledge to site scale design projects. Includes units on design methodology, site planning and circulation, and creative problem solving. Three three-hour studios per week.
Prerequisite/Restriction: LAEP 2700 or LAEP 6270.

Semester(s) Traditionally Offered: Spring
LAEP 3100 - Recreation/Open Space
5 credits
Focuses on regional and urban open space planning and design including project scale recreation design. Includes design seminars, field trips, and guest lecturers. Three three-hour studios per week.
Prerequisite/Restriction: LAEP 1200, LAEP 1300, LAEP 1350, PSC 2620.

Semester(s) Traditionally Offered: Fall
LAEP 3600 - Landscape Materials
2 credits
Introduction to materials used in landscape design, including paving, walls, street furnishings, landscape lighting, decking, etc. Two one-hour lectures per week.

Semester(s) Traditionally Offered: Fall
LAEP 3610 - Landscape Construction II
2 credits

Design of landscape structures and surfaces, including wood construction, free-standing and retaining walls, pavement, etc. Must be taken in conjunction with PSC 3420. Three two-hour studios per week, first half of semester only. Enrollment limited to students matriculated into the Landscape Architecture major.

Prerequisite/Restriction: LAEP 2600, LAEP 3600, MATH 1010.

Semester(s) Traditionally Offered: Spring
LAEP 3700 - City and Regional Planning
3 credits

Introduction to historic and current theory and methods of city and regional planning. Includes legislative, administrative, and implementation practices of the general comprehensive plan. Three lectures per week.

Semester(s) Traditionally Offered: Spring
LAEP 4100 - Urban Theory, Systems, and Design
5 credits

Focuses on urban environment for design expression and processes associated with the creation of cities. Explores different aspects of urban theories and design approaches (conceptual, perceptual, and analytical) as applied to large urban areas and site-specific spaces.

Prerequisite/Restriction: LAEP 3120.

Semester(s) Traditionally Offered: Fall
LAEP 4110 - Construction Document Preparation
4 credits

Methods and procedures necessary for transforming a design idea into a set of construction drawings that are accurate, precise, and clearly understood. Two three-hour studios per week.

Prerequisite/Restriction: LAEP 3120 and LAEP 3610.
Semester(s) Traditionally Offered: Fall
LAEP 4120 - Emerging Areas in Landscape Architecture I
2 credits

Exploration of new and emerging areas in the profession of landscape architecture. National and international issues in regional landscape planning, landscape restoration/bioengineering, and visual resource management are among several issues which may be examined. Three three-hour studios per week.

Prerequisite/Restriction: LAEP 3120.

Semester(s) Traditionally Offered: Fall, Spring, Summer
LAEP 4130 - Emerging Areas in Landscape Architecture II
2 credits

Exploration of new and emerging areas in the profession of landscape architecture. National and international issues in regional landscape planning, landscape restoration/bioengineering, and visual resource management are among several issues which may be examined. Three three-hour studios per week.

Prerequisite/Restriction: LAEP 3120.

Semester(s) Traditionally Offered: Fall, Spring, Summer
LAEP 4250 - Internship and Cooperative Education
1-5 credits

Course credit for professional experience outside the classroom prior to graduation. Statement of professional goals and a summary report following the experience are required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
LAEP 4350 - Travel Course
1-3 credits

Major field trip to examine a variety of projects in planning and design.

Cross-listed as: LAEP 6550
LAEP 4810 - Tutorial
1 credit
Directed readings and discussions of landscape issues.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 4900 - Special Problems
1-5 credits
Selected problems to meet individual needs for students’ completion of professional education. Hours arranged.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 4910 - Professional Practice I
1 credit
Introduction to different modes of professional practice, portfolio development, and preparation for entry into a professional office. Graduate students required to develop a corporate structure and marketing plan for the mock company they established in LAEP 6100.
Cross-listed as: LAEP 6160.
Semester(s) Traditionally Offered: Spring

LAEP 4920 - Professional Practice II (CI)
CI Communications Intensive
1 credit
Exposure to legal and corporate aspects of professional practice, business ethics, and business planning. Graduate students required to develop a corporate structure and marketing plan for the mock company they established in LAEP 6100.
Cross-listed as: LAEP 6170.
Semester(s) Traditionally Offered: Spring

LAEP 4950 - Seminar
1 credit
Directed readings and reports on current and emerging areas of the profession. One recitation hour per week.
Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 5090 - Low Water Landscaping
3 credits
Examines arid ecosystems, emphasizing the Intermountain West, and recreating such ecosystems in a range of amenity landscapes. Also covers procurement, propagation, establishment, and maintenance of plants appropriate for low water landscapes.
Cross-listed as: LAEP 6090 and PSC 5090/PSC 6090.
Semester(s) Traditionally Offered: Fall

LAEP 6090 - Low Water Landscaping
3 credits
Examines arid ecosystems, emphasizing the Intermountain West, and recreating such ecosystems in a range of amenity landscapes. Also covers procurement, propagation, establishment, and maintenance of plants appropriate for low water landscapes.
Cross-listed as: LAEP 5090 and PSC 6090/PSC 5090.
Semester(s) Traditionally Offered: Fall

LAEP 6100 - Regional Landscape Analysis and Planning
5 credits
Focuses on the challenges and opportunities inherent in conducting landscape planning and analysis on a broad scale. Students integrate a variety of landscape planning project scales through literature review, selected case studies, and a major applied studio project.
Prerequisite/Restriction: LAEP 6740, LAEP 6750.
Semester(s) Traditionally Offered: Fall

LAEP 6110 - Landscape Planning for Wildlife
3 credits
Applications of principles of landscape ecology, conservation biology, and wildlife management to
planning for wildlife in urban, suburban, and exurban landscapes. Discussion of restoration of disturbed habitats in these environments. Includes real-world projects and field trips. Addresses issues of landscape restoration and bioengineering.

Semester(s) Traditionally Offered: Spring
LAEP 6120 - Regional Landscape Policy and Implementation
2 credits

Case studies and/or implementation strategies for planning alternatives developed in LAEP 6100.

Semester(s) Traditionally Offered: Spring
LAEP 6160 - Professional Practice I
1 credit

Introduction to different modes of professional practice, portfolio development, and preparation for entry into a professional office. Graduate students required to develop a corporate structure and marketing plan for the mock company they established in LAEP 6100.

Cross-listed as: LAEP 4910.

Semester(s) Traditionally Offered: Spring
LAEP 6170 - Professional Practice II
1 credit

Exposure to legal and corporate aspects of professional practice, business ethics, and business planning. Graduate students required to develop a corporate structure and marketing plan for the mock company they established in LAEP 6100.

Cross-listed as: LAEP 4920.

Semester(s) Traditionally Offered: Spring
LAEP 6230 - History of Landscape Architecture
3 credits

Examination of historic landscape change from ancient to present times, with a primary emphasis on the visual qualities of designed landscapes. Three one-hour lectures and a one-hour seminar per week.

Semester(s) Traditionally Offered: Spring
LAEP 6250 - Internship and Cooperative Education Program
1-5 credits

Course credit given for professional experience outside the classroom prior to graduation. Statement of professional goals and summary report following the experience are required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
LAEP 6270 - Site Analysis: Social, Behavioral, and Biophysical Dimensions
5 credits

Site survey, analysis, and design synthesis. Focuses on human behavior and natural resources as design considerations for future land use planning. Introduces foundational site analysis methods and tools; and integrates Geospatial Information Systems (GIS) training for data interpretation. Graduate students evaluate, adapt, and apply methods for specific project analysis, as well as use GIS to analyze and create new data sets.

Semester(s) Traditionally Offered: Fall
LAEP 6310 - Recreation and Open Space Planning and Design
5 credits

Focuses on planning and design of open space and recreational areas, as well as facilities of various types and scales. Students develop skills in analysis, research, planning strategy, and design technique to create functional spaces based on client needs and site limitations.

Prerequisite/Restriction: LAEP 2720 or permission of instructor.

Semester(s) Traditionally Offered: Fall
LAEP 6320 - Residential Planning and Design
5 credits

Studio course introducing methods for the planning and design of residential projects of various types and scales. Students develop skills in critical analysis, design technique, and planning strategy to create functional spaces based on client needs and site requirements.

Semester(s) Traditionally Offered: Spring
Prerequisite/Restriction: LAEP 6310.

Semester(s) Traditionally Offered: Spring

LAEP 6350 - Planting Design for Sustainability
4 credits

Emphasizes plant/environmental relationships, as well as plant community dynamics, aesthetics, function, and sustainability. Includes lectures, readings, projects, and papers.

Semester(s) Traditionally Offered: Fall

LAEP 6370 - City and Regional Planning
3 credits

Introduction to historic and current theory and methods of city and regional planning. Includes legislative, administrative, and implementation practices within the planning process. Emphasizes public transportation and mobility issues.

LAEP 6410 - Redefining the Urban Landscape
5 credits

Focuses on urban environment for design expression and processes associated with the creation of cities. Explores different aspects of urban design theories and design approaches (conceptual, perceptual, and analytical), as applied to large urban areas and site-specific spaces.

Semester(s) Traditionally Offered: Fall

LAEP 6550 - Travel Course
1-3 credits

Major field trip to examine a variety of projects in planning and design.

Cross-listed as: LAEP 4350.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 6750 - Implementation and Regulatory Techniques in Planning
3 credits

Review and analysis of the legal basis and techniques for land use and resource planning, including historic and visual resources at the federal, state, and local levels. Relies on readings in case law and specific case studies, as well as research focused on the evaluation of planning processes and strategies.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall, Spring

LAEP 6860 - Faculty/Interdisciplinary Seminar I
1 credit

Landscape architecture and environmental planning program options and research potential presented by departmental faculty. Also introduces students to other interdisciplinary programs and faculty within the University.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall, Spring

LAEP 6862 - Faculty/Interdisciplinary Seminar II
1 credit

Landscape architecture and environmental planning program options and research potential presented by departmental faculty. Also introduces students to other interdisciplinary programs and faculty within the University. Second seminar in a two-seminar series.

Prerequisite/Restriction: Graduate standing.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

LAEP 6890 - Seminar on Thesis Proposals and Procedures
1 credit

Explores preparation of thesis proposals and abstracts.
Discussion of graduate degree completion requirements and procedures.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Spring

LAEP 6900 - Special Problems
1-5 credits

Selected problems to meet individual student interests and areas of concentration. Registration by permission of departmental faculty.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 6910 - Reading Seminar I
1 credit

Selected readings directed by department faculty.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 6930 - Reading Seminar II
1 credit

Selected readings directed by department faculty.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

LAEP 6960 - Master's Project
1-6 credits

Requires research, analysis, and production of a given subject area, including its final planning, design, and documentation.

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

LAEP 6970 - Thesis Research
1-6 credits

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LAEP 6990 - Continuing Graduate Advisement
1-3 credits

Prerequisite/Restriction: Graduate standing.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Language

LANG 2330 - Communication in a Global Era
3 credits

Introduction to the role of communication in a global setting, including language, cultural, and technological issues. A variety of theories and perspectives will be explored.

Cross-listed as: SPCH 2330

Semester(s) Traditionally Offered: Spring

LANG 3550 - Culture of East Asia (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Helps students explore and appreciate the culture of three East Asian countries: China, Japan and Korea. Students gain sincere view and understanding of these East Asian cultures through readings, hands-on cultural activities, viewing video materials, writing, and discussions. Topics include: major historical and social events, customs and traditions, thoughts and beliefs, people, food, contemporary issues, art, literature, and film.

Cross-listed as: ANTH 3550 and HIST 3550.

LANG 3990 - Special Topics
1-5 credits

Additional readings or research done beyond the material covered in other language courses. May be repeated for credit if different topic is covered.
Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

LANG 4200 - Senior Honors Seminar
1 credit

Credit for completing and presenting a senior honors thesis project. Requirement may be fulfilled by publishing the thesis in an academic journal, defending the thesis before a faculty committee, presenting the thesis at an academic conference, or presenting the thesis in the languages session during Scholar’s Day.

LANG 4210 - Senior Honors Thesis
1-4 credits

Independent study research credits for preparation of a senior honors thesis to fulfill requirements for a degree in languages with departmental honors.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Latin

LATN 1010 - Beginning Latin I
5 credits


Semester(s) Traditionally Offered: Fall

LATN 1020 - Beginning Latin II
5 credits


Prerequisite/Restriction: Minimum grade of B in LATN 1010.

Semester(s) Traditionally Offered: Spring

LATN 3100 - Intermediate Latin Prose
3 credits

Readings in Latin prose.

Prerequisite/Restriction: Minimum grade of B in LATN 3100.

LATN 3130 - Intermediate Latin Poetry
3 credits

Readings in Latin poetry.

Prerequisite/Restriction: Minimum grade of B in LATN 3100.

Semester(s) Traditionally Offered: Spring

LATN 4100 - Advanced Latin Readings
3 credits

Readings in Latin poetry and/or prose.

Prerequisite/Restriction: Minimum grades of B in LATN 3100 and LATN 3130.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

LATN 4860 - Latin Pedagogy
3 credits

Prepares students to teach Latin at the secondary level. Students survey the most important issues in Latin pedagogy, and discuss the best teaching practices. Students also translate selections from core Latin authors, focusing on authors not previously studied.

Prerequisite/Restriction: LATN 3100 and LATN 3130 with minimum grades of B or better.

Semester(s) Traditionally Offered: Fall, Spring

LATN 4930 - Directed Readings in Latin Poetry and Prose Authors
1-3 credits

Directed readings in advanced Latin poetry and prose authors. Prerequisite: Successful completion of at least three semesters of Latin.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LATN 6100 - Special Topics: Latin
1-3 credits

Intensive Readings and group discussions of selected
Latin texts.

Prerequisite/Restriction: Minimum grade of B in LATN 4100 or permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Latin American Studies

LATS 2200 - Introduction to Latin America
3 credits

Interdisciplinary course examining Latin American geography, culture, history, literature, music, society, politics, and economics.

Semester(s) Traditionally Offered: Spring

Linguistics

LING 2250 - Cooperative Education
1-3 credits

Course credit for professional experience outside the classroom. Statement of professional goals and a summary report following the experience are required.

Repeatable for credit.

LING 3300 - Clinical Experience I
1 credit

First clinical practicum in middle and secondary schools. Arranged by special methods instructor. Required at Level I.

Prerequisite/Restriction: Set by Secondary Education Department.

Corequisite: LING 4400 or LING 6400.

Pass/Fail only.

LING 4400 - Teaching Modern Languages
3 credits

Methods course for teaching majors or minors in any of the modern languages. Considers the context of the present secondary language classroom, effective teaching techniques that can be used in that context, and significant trends in teaching and learning languages.

Prerequisite/Restriction: Permission of instructor

Corequisite: LING 3300 or LING 4300

LING 4520 - Technology for Language Teaching
3 credits

Web- and disk-based technology for developing electronic course modules for the language learning classroom.
Cross-listed as: LING 6520.

Semester(s) Traditionally Offered: Summer

LING 4900 - Analysis of Cross-Cultural Difference
3 credits

Develops awareness of what culture is and how it shapes perceptions and attitudes. Through interactive student-centered activities, students learn to analyze cultural differences.

LING 4920 - Practicum in Language Tutoring
1 credit

Allows language students to develop tutoring skills by assisting professors daily in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated for up to a maximum of 3 credits.

Repeatable for credit.

LING 5500 - Student Teaching Seminar
2 credits

Capstone seminar focused upon student teaching issues, professional development, and principles of effective instruction, with emphasis on reflective teaching.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

LING 5630 - Student Teaching in Secondary Schools
10 credits

Thirteen-week culminating practicum experience in which students assume full-time teaching responsibilities under direction of cooperating teachers in their major and minor fields.

Prerequisite/Restriction: Set by Secondary Education Department.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

LING 6010 - Research in Second Language Learning
3 credits

Readings in current SLL literature evaluated in terms of their implications for classroom practice.

Semester(s) Traditionally Offered: Fall

LING 6300 - Clinical Experience I
1 credit

First clinical practicum in middle and secondary schools for Master of Second Language Teaching students. Arranged by special methods instructor. Required at Level I.

Prerequisite/Restriction: Set by Secondary Education Department.

Cross-listed as: LING 6400.

LING 6310 - Clinical Experience II
1 credit

Second clinical practicum in middle and secondary schools for Master of Second Language Teaching students. Arranged by special methods instructor. Required at Level II.

Prerequisite/Restriction: Set by Secondary Education Department.

Cross-listed as: LING 6400.

LING 6400 - Second Language Teaching: Theory and Practice
3 credits

Survey of theories about memory, assigning meaning to recall, and methods L2 teachers and learners use to apply meaning to their teaching and learning. Central to all course topics are social dynamics in the L2 classroom and issues of schooling students of diverse backgrounds.

Semester(s) Traditionally Offered: Spring

LING 6410 - Teaching Modern Languages
3 credits

Methods course for graduate students seeking teacher licensure in any of the modern languages. Considers the context of the present secondary language classroom, effective teaching techniques that can be used in that context, and significant trends in teaching and learning languages.
Prerequisite/Restriction: Permission of instructor.

Cross-listed as: LING 6310.

LING 6510 - Linguistic Analysis
3 credits

Comparative study of linguistic patterns across languages. Linguistic structures and language typology for teachers of modern languages.

Semester(s) Traditionally Offered: Spring

LING 6520 - Technology for Language Teaching
3 credits

Web- and disk-based technology for developing electronic course modules for the language learning classroom.

Cross-listed as: LING 4520.

Semester(s) Traditionally Offered: Summer

LING 6800 - Topics in Second Language Acquisition
3 credits

Advanced seminar in the acquisition and teaching of languages.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

LING 6900 - Culture Teaching and Learning: Theory and Practice
3 credits

Examines culture learning and connection between development of communicative and cultural competence in the second language learner. Reviews theory, research, and practice in the field of intercultural communication as relating to second language learning and teaching.

Semester(s) Traditionally Offered: Spring

LING 6910 - Exploring the Portfolio
1 credit

Investigation of the portfolio process, including distinguishing qualities of superior portfolios. Students write their teaching philosophy and gather artifacts for their portfolio. Must be taken during the first semester of the Master of Second Language Teaching program. First of a sequence of three required courses.

Semester(s) Traditionally Offered: Fall, Spring

LING 6920 - Developing the Portfolio
1 credit

Further development of the portfolio including revision of the student’s teaching philosophy, given insights from courses taken. Reexamination and revision of artifacts gathered, as well as addition of new artifacts.

Prerequisite/Restriction: LING 6910.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LING 6930 - Finishing the Portfolio
1 credit

Further work toward completion of the portfolio, including careful development of main themes in the teaching philosophy and artifacts; addition of final artifacts; and revision for coherence, clarity, and brevity. Must be taken during the final semester of the Master of Second Language Teaching program.

Prerequisite/Restriction: LING 6920.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LING 6940 - Independent Study
1-3 credits

Individually directed readings and conference. Departmental permission required before registration.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

LING 6990 - Continuing Graduate Advisement
1-9 credits

Allows students access to faculty and facilities to complete graduate thesis, project, and papers.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer
Machine Tool Technology (USU Eastern)

MACH 1010 - Machine Tool Technology I
3 credits

An introductory course to machining. Designed to develop skills needed to safely operate various hand tools, power equipment and precision measuring instruments related to the machining field.

Campus: USU Eastern only

MACH 1020 - Machine Tool Technology II
3 credits

Second class in the machining program. Designed to develop skills needed to safely operate various power equipment and precision measuring instruments related to the machining field. Coursework will include: blueprint reading, developing skills in decision making to ensure that productivity and quality is obtained in a safe manner. Additional work on the Turning Machines will entail learning how to setup and operate manual lathes, perform basic and advanced machining operations, lathe cutting tools, all threading operations both internal and external as well as work on drill presses and related tooling.

Prerequisite/Restriction: MACH 1010

Campus: USU Eastern only

MACH 1030 - Machine Tool Technology III
3 credits

Intermediate/advanced course to machining. Designed to develop skills needed to safely operate various power equipment and precision measuring instruments related to the machining field. Students will learn to read blueprints, setup and operate manual machines, perform basic and advanced machining operations, develop skills in decision making to ensure that productivity and quality is obtained in a safe manner.

Prerequisite/Restriction: MACH 1020

Campus: USU Eastern only

MACH 1040 - Machine Tool Technology IV
3 credits

Advanced course to machining. Designed to develop skills needed to safely operate various power equipment and precision measuring instruments related to the machining field. Students will learn to read blueprints, setups and operate manual machines, perform basic and advanced machining operations, develop skills in decision making to ensure that productivity and quality is obtained in a safe manner. Students will learn advanced work on the Turning machine, manual lathes, as well as an introduction to CNC lathes and mills. Theory and practice of the vertical milling machine, vertical milling machine construction and operation, and machine setup and milling will also be covered.

Prerequisite/Restriction: MACH 1030

Campus: USU Eastern only

MACH 1050 - Machine Tool Technology V
3 credits

Advanced machining course designed for students who have reached a level of proficiency in a machine shop environment. Covers specialized machining processes with an emphasis on advanced milling operations. Students will read blueprints, setup and operate manual machines, perform basic and advanced machining operations, continue to develop skills in decision making to ensure that productivity and quality is obtained in a safe manner.

Prerequisite/Restriction: MACH 1040 or equivalent skills

Campus: USU Eastern only

MACH 1140 - Engine Machining Theory
2 credits

Instructs students on the techniques of drilling, honing, boring, grinding, etc., using the machines, measuring tools and gauges associated with MACH 1160. Casting inspection and guidelines for re-use is also explained.

Corequisite: MACH 1160

Campus: USU Eastern only

MACH 1160 - Engine Machining Lab
2 credits

Provides hands on experience operating the special equipment used to perform the machine processes done to automotive and diesel engine castings during
overhaul. Students will recondition rods, cylinder heads, valve guides and valves, block deck surfaces, cylinder bores, and main bearing bores. Students will also use all precision measuring tools and gauging associated with these processes.

Corequisite: MACH 1140

Campus: USU Eastern only

MACH 2977 - Cooperative Education
1-3 credits

Provides on-the-job machine shop work experience which is coordinated through the instructor/coordinator to determine learning objectives, hours of work, and credit.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

MACH 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

Management

MGT 1160 - Developing Self-Management Skills
1 credit

A practical course designed to provide basic self-management skills contributing to personal effectiveness.

Prerequisite/Restriction: For freshmen and sophomores only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 1350 - Introduction to Business
3 credits

Investigation of the role of business in contemporary society, including an introduction to the general problems of business operation.

Semester(s) Traditionally Offered: Fall

MGT 2050 - Legal and Ethical Environment of Business
3 credits

Surveys the legal and ethical environment of business. Introduction to elementary legal research and writing and critical thinking techniques. Lecture and laboratory.

Prerequisite/Restriction: STAT 1040 or MATH 1030 or MATH 1050 (MATH 1050 or equivalent is required for Huntsman School of Business majors); and GPA of 2.5 or higher.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 2160 - Student Applied Leadership Training
1-3 credits

Available to students involved in structured leadership training provided as part of their role and responsibility at the University. For details, contact the Office of University Advising (TSC 304).

Prerequisite/Restriction: Approval of course coordinator.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 2350 - Small Business Management
3 credits

Provides practical overview of management principles and practices as they apply to the small business enterprise. For nonbusiness majors.

MGT 3110 - Managing Organizations and People (DSS)
DSS Depth Social Sciences
3 credits

Overview of the role of management, and an introduction to leadership theory and practice. Includes defining of mission and goals, organizing work, and managing human performance.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 3250 - Introduction to Human Resource Management
3 credits
Introduces the process of managing human resources, including human resource planning, recruitment, selection, training, performance evaluation, compensation, career management, labor relations, human resource strategy, and related ethical issues.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3300 - Contemporary Issues in International Trade
3 credits

Examines interrelated economic, political, and social issues faced by institutions and individuals at various points in the trade process.

Prerequisite/Restriction: Admission to Huntsman Scholars Junior Year Program.

Corequisite: ECN 3300.

Semester(s) Traditionally Offered: Fall

MGT 3500 - Fundamentals of Marketing
3 credits

Overview of marketing function, emphasizing concepts and terminology. Includes basic marketing activities of product management, pricing, distribution, promotion, marketing research, and consumer behavior.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 3510 - Fundamentals of Entrepreneurship
3 credits

Introduction to entrepreneurship and the processes of new ventures. The objective is to help students become familiar with entrepreneurship and ascertain the degree to which it represents a viable career path. Focuses on identifying, analyzing, and developing business opportunities.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

MGT 3520 - Relationship and Organizational Competencies for Entrepreneurs
3 credits

Development of the relationship and organizational competencies for entrepreneurs. Focuses on the development of persuasion, delegation, and organizational skills for individuals who launch businesses and/or play a key role in their growth.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3550 - Entrepreneurial Executive Lecture Series
1 credit

Discussion of the discovery, evaluation, and exploitation of entrepreneurial opportunities. Each week, an active or harvested entrepreneur is invited to share his or her story of new venture creation. Through discussion and a question and answer session, students interact with the entrepreneurs.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

MGT 3670 - Employee Relations and Contract Negotiations
3 credits

Surveys union-management relations, including labor markets, labor history, labor law, union organization and governance, contract negotiations, and grievance processing. Includes cases and simulations to develop negotiating and grievance processing skills.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3700 - Operations Management
3 credits

Covers the concepts and tools related to managing a business operation. Topics include demand forecasting,
operations strategy and resource planning, process layout, lean systems, inventory and quality, and project management.

Prerequisite/Restriction: STAT 2300 or STAT 3000; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 3710 - Developing Team and Interpersonal Skills
3 credits

Experientially-driven course focusing on the role of teams in organizations and on developing skills which individuals and teams need to be effective. Topics include self-awareness, supportive communication, problem solving, and conflict management.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3720 - Leading Organization Change (DSS)
DSS Depth Social Sciences
3 credits

Explores the topic of organizational change and transformation, with special emphasis on the role of leadership, vision, and organization culture in change programs. Extensive use of case studies and experiential exercises. Also covers the history of organization development, change facilitation, and dealing with resistance to change.

Prerequisite/Restriction: MGT 3110; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3800 - Leadership
3 credits

This course fosters leadership development through a focus on integrity, authenticity, and commitment to a purpose higher than oneself. Students become more effective leaders by removing constraints and allowing leadership to emerge as natural self-expression.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3810 - Employment Law and Policy Development (DSS)
DSS Depth Social Sciences
3 credits

Examines laws related to employment, labor relations, civil rights, compensation, safety, health, and retirement. Provides hands-on experience in drafting and reviewing human resource policies in a business setting. Addresses implementing and influencing public policy.

Prerequisite/Restriction: MGT 2050; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 3820 - International Management (DSS)
DSS Depth Social Sciences
3 credits

Exploration of international culture and context of management, the impact of globalization on businesses today, and the pressures and complexities of operating in global markets, including the processes of managing multi-cultural human resources.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4050 - International Retailing
3 credits

Issues related to retailing in international markets, such as motivations, cultural influence on consumer behavior, and entry strategies.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits. (Prerequisites do not apply to students taking MGT 6050.).

Cross-listed as: MGT 6050.

MGT 4070 - Retail Management (CI)
CI Communications Intensive
3 credits
Basic issues related to retail management, such as merchandising, location, promotion, store management, and retail image.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits. (Prerequisites do not apply to students taking MGT 6070.)

Cross-listed as: MGT 6070.

Semester(s) Traditionally Offered: Spring

MGT 4240 - Merchandise Planning and Control
3 credits

Issues related to pricing, budgeting, open-to-buy, and planning inventory.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

MGT 4510 - Buyer Behavior
3 credits

Marketing analysis of the decision processes of individuals, households, businesses, and not-for-profit institutions. Builds on concepts from psychology, sociology, anthropology, and economics.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500, any Breadth Social Sciences (BSS) course, admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

MGT 4520 - New Venture Planning
3 credits

Theoretical and practical aspects of starting or buying a business. Includes development of a business plan, as well as conducting due diligence for buying a business or extensive consulting with a start-up or growth business.

Prerequisite/Restriction: MGT 3510, MGT 3520; admittance to a USU major; cumulative GPA of 2.67 or higher; and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4530 - Marketing Research
3 credits

Management of marketing research function. Basic vs. decisional research, survey research, cost vs. value of information, research design, experimentation, and analysis techniques.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; choose one of the following statistics courses: STAT 1040, STAT 2300, STAT 3000, or PSY 2800; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4540 - Marketing Institutions
3 credits

Examination of strategic decision-making by institutions involved in the marketing channel. Primary emphasis on retail institutions. Explores types of marketing intermediaries, vertical integration, channel member power and conflict, and international channel management issues.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

MGT 4550 - Promotion Management
3 credits

Examines role of promotion concepts in development of a communication strategy. Based on an introduction to the nature of communications, course covers advertising, personal selling, and sales promotion, emphasizing the competitive and strategic value of communications in both the marketplace and society.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4560 - Strategic Sales Management
3 credits

This course focuses on the development and
management of strategic accounts. Emphasis paid to understanding and practicing all phases of the key account process including prospecting, contacting, qualifying, proposal presentation and closing.

Prerequisite/Restriction: Grade of B- or better in MGT 3500

Semester(s) Traditionally Offered: Spring

MGT 4580 - Entrepreneurial Finance
3 credits

Provides overview of financial issues affecting entrepreneurial ventures. Emphasizes finance skills needed to develop the financial section of a business plan, make practical financial assessments of new business opportunities, and explore sources of new venture funding.

Prerequisite/Restriction: FIN 3400; ACCT 2010, ACCT 2020; admittance to USU major; cumulative GPA of 2.67 or higher; completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

MGT 4590 - Global Marketing Strategy
3 credits

Analytical approach to strategic marketing problems facing the firm competing in global markets. Emphasizes key analytical and decision-making frameworks concerning the global marketing environment and the marketing mix and their impact on the firm's performance.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3500; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4630 - Human Resource Management Capstone
3 credits

Integrative capstone course, designed as the last course for graduating senior Human Resource Management majors. Covers current aspects of human resources. Includes case studies, real-world exercises, and team-based projects.

Prerequisite/Restriction: MGT 3250, MGT 3710, MGT 3810.

MGT 4591 - Senior Leadership Project
3 credits

Students plan and complete advanced leadership projects, present results, and document accomplishments. Students gain practical experience and demonstrate ability to manage complex projects, contributing to organizational goals and their own career objectives.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring

MGT 4720 - Production Planning and Control
3 credits

Examines concepts and tools used in the planning and control of production activity and material flow. Topics include production scheduling, capacity analysis, and push versus pull production.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3700; admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Spring

MGT 4730 - Business and Society
3 credits

Examines the relationship of business enterprises with their external environment and helps students to develop an analytical framework for addressing the business and society relationship over one's career in business or government. Helps students recognize, formulate, and analyze moral issues, as well as trace decisions forward to personal, cultural, and societal consequences.

Prerequisite/Restriction: Admittance to a USU major; cumulative GPA of 2.67 or higher; completion of at least 40 credits.

MGT 4740 - Process Analysis and Development
3 credits

Examines concepts and tools used to analyze, improve, and assess manufacturing and service processes. Specific
topics covered include statistical quality control, design of experiments, and constraint management.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3700; admittance to a USU major; cumulative GPA of 2.67 or higher; completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

MGT 4750 - Managing Complexity
3 credits

Introduces concepts and tools used to facilitate systems thinking within organizations. In addition, simulation games and modeling are used to increase student understanding of how actions in one area of a business impact other areas and overall organizational performance.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3700; admittance to a USU major; cumulative GPA of 2.67 or higher; completion of at least 40 credits.

Semester(s) Traditionally Offered: Spring

MGT 4790 - Supply Chain Management
3 credits

Analysis of the concept of supply chains and how managing them supports operations strategy and organizational competitiveness. Topics include supply management, supply chain alliances, distribution planning, and logistics systems design.

Prerequisite/Restriction: Grade of B- (2.67) or better in MGT 3700; admittance to a USU major; cumulative GPA of 2.67 or higher, completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall, Spring

MGT 4800 - Independent Research and Readings
1-3 credits

Provides opportunity for student to pursue special interests under tutorship of faculty.

Prerequisite/Restriction: Approval of faculty member and department head.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 4880 - Business Strategy in an Entrepreneurial Context (CI)
CI Communications Intensive
3 credits

Integrative capstone course dealing with processes, methods, and steps involved in starting and growing small to mid-size business ventures. Emphasizes cross-functional challenges of market entry, finance, operations, managing business growth, and entrepreneurs' responsibilities to society.

Prerequisite/Restriction: Senior standing; FIN 3400; MGT 3110, MGT 3500, MGT 3700; admittance to a USU major; cumulative GPA of 2.67 or higher.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 4890 - Business Strategy in a Global Context (CI)
CI Communications Intensive
3 credits

Integrative capstone course dealing with challenges and strategies associated with international business. Students develop global business judgment and perspective through addressing problems related to global market entry and growth, finance, operations, strategic alliances, social responsibility, and business-government relationships.

Prerequisite/Restriction: Senior standing; FIN 3400; MGT 3110, MGT 3500, MGT 3700; admittance to a USU major; cumulative GPA of 2.67 or higher.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 4950 - Senior Honors Thesis/Project
3 credits

Creative project that will then be written up, and presented, as a Senior Thesis as required for an Honors Plan.

Semester(s) Traditionally Offered: Spring

MGT 5210 - Management of Philanthropy
3 credits

Explores application of business practices to philanthropy, nonprofit organizations, and social enterprises. Examines principles of corporate social
responsibility and its relationship to meeting broad stakeholder interests.

MGT 5310 - Non-Profit Management
3 credits

Non-Profit Management focuses on the development, management and leadership of non-profit organizations. Specifically, this course discusses the role and scope of non-profits, both in the U.S. and globally; introduces management theory and practice for achieving non-profit effectiveness and sustainability; and explores different leadership models relevant to non-profit organizations.

MGT 5640 - Selected Topics in Management and Human Resources
1-3 credits

Selected topics in management and/or human resources are pursued in depth. Topics and instructor may vary.

Cross-listed as: MGT 6640.

Repeatable for credit.

MGT 5730 - Continuous Improvement
3 credits

Application of continuous improvement concepts, systems, and techniques throughout the organization. Analysis of contemporary methods of management and continuous improvement. Topics include: continuous flow, scientific thinking and the continuous improvement cycle, value stream mapping, root cause analysis, mistake proofing, and creative problem-solving.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 90 credits. (Prerequisites do not apply to students taking MGT 6730.)

Cross-listed as: MGT 6730.

Semester(s) Traditionally Offered: Fall, Spring

MGT 6010 - Advanced Business Law
3 credits

Detailed investigation of business law, including law of contracts, torts, property, secured transactions, commercial paper, and business organizations.

Prerequisite/Restriction: MGT 2050.

MGT 6050 - International Retailing
3 credits

Issues related to retailing in international markets, such as motivations, cultural influence on consumer behavior, and entry strategies.

Cross-listed as: MGT 4050.

MGT 6055 - Management Principles
1.5 credits

Introduction of management principles for students entering a master's degree program in the Huntsman School of Business.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

Semester(s) Traditionally Offered: Summer

MGT 6070 - Retail Management
3 credits

Basic issues related to retail management, such as merchandising, location, promotion, store management, and retail image.

Cross-listed as: MGT 4070.

Semester(s) Traditionally Offered: Spring

MGT 6075 - Fundamentals of Business Law
1.5 credits

Introduction of business law principles for students entering a master's degree program in the Huntsman School of Business.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

Semester(s) Traditionally Offered: Summer

MGT 6180 - Intrasession MBA Workshop
0.5-1 credit

Intensive workshops designed to enhance the MBA experience.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 6300</td>
<td>Leadership and Operational Excellence</td>
<td>3 credits</td>
<td>Introduces the principles of leadership consistent with the philosophy of operational excellence. Presents a framework for leading balanced and comprehensive efforts toward achieving organizational objectives. Topics include: humility in leadership, respect for the individual and ethics, continuous improvement as a strategy, corporate culture as a control mechanism, and measurement principles. Semester(s) Traditionally Offered: Spring</td>
</tr>
<tr>
<td>MGT 6310</td>
<td>Career and Professional Development</td>
<td>1-3 credits</td>
<td>Explores theory and literature of careers, including orientation, as well as early-, mid-, and late-career issues. Students evaluate interests and capabilities, implement a personal development plan, get feedback on career development, and receive an objective outsider assessment of career readiness. Repeatable for credit. Semester(s) Traditionally Offered: Fall, Spring</td>
</tr>
<tr>
<td>MGT 6320</td>
<td>Leadership and Operational Excellence in a Global Context</td>
<td>3 credits</td>
<td>Provides students with a powerful, transformative learning experience within the framework of global leadership and operational excellence. While participating in an international experience, students critically analyze operational excellence in a variety of global companies at various stages of implementation. Semester(s) Traditionally Offered: Spring</td>
</tr>
<tr>
<td>MGT 6330</td>
<td>Applied Human Resources Research</td>
<td>3 credits</td>
<td>Provides applied research for selected human resource topics. Semester(s) Traditionally Offered: Fall</td>
</tr>
<tr>
<td>MGT 6340</td>
<td>New Venture Creation</td>
<td>3 credits</td>
<td>Focuses on development of new ventures, including entrepreneurial competencies, venture teams, recognizing business opportunities, gathering resources, new venture finance, entry strategies, legal structure, licensing and regulatory requirements, patents, copyrights, and product liability.</td>
</tr>
<tr>
<td>MGT 6350</td>
<td>New Venture Growth and Expansion</td>
<td>3 credits</td>
<td>Analyzes the growth phase of business development. Topics include organizational competencies and systems, growth strategies, growth finance and staging, cash-flow, franchising, estate and family business issues, harvest strategies including buyouts and public offerings, and employment law for small employers.</td>
</tr>
<tr>
<td>MGT 6370</td>
<td>Project Management</td>
<td>3 credits</td>
<td>Teaches concepts of project management, while intensively involving students in production and operations related projects. Requires integrative organizational and industry research and a professional report.</td>
</tr>
<tr>
<td>MGT 6410</td>
<td>New Venture Creation</td>
<td>3 credits</td>
<td>Focuses on development of new ventures, including entrepreneurial competencies, venture teams, recognizing business opportunities, gathering resources, new venture finance, entry strategies, legal structure, licensing and regulatory requirements, patents, copyrights, and product liability.</td>
</tr>
<tr>
<td>MGT 6430</td>
<td>New Venture Growth and Expansion</td>
<td>3 credits</td>
<td>Analyzes the growth phase of business development. Topics include organizational competencies and systems, growth strategies, growth finance and staging, cash-flow, franchising, estate and family business issues, harvest strategies including buyouts and public offerings, and employment law for small employers.</td>
</tr>
<tr>
<td>MGT 6470</td>
<td>Entrepreneurship Project</td>
<td>3 credits</td>
<td>Teaches concepts of project management, while intensively involving students in entrepreneurship-related projects such as initiating a start-up or consulting with management of an emerging business. Requires integrative organizational and industry research and a professional report.</td>
</tr>
<tr>
<td>MGT 6500</td>
<td>Managing Individuals and Groups</td>
<td>3 credits</td>
<td>Focuses on development of interpersonal and team skills. Includes development of organizational systems supporting effective use of human resources, including performance management, motivation, selection, training, rewards, and career development. Semester(s) Traditionally Offered: Fall</td>
</tr>
<tr>
<td>MGT 6510</td>
<td>Marketing Techniques</td>
<td>1.5 credits</td>
<td>Provides marketing techniques.</td>
</tr>
</tbody>
</table>
Introduction of marketing principles for students entering a master's degree program in the Huntsman School of Business.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

Semester(s) Traditionally Offered: Summer

MGT 6520 - Marketing Strategy
3 credits

Advanced case approach to current marketing management problems. Emphasizes concepts, research, techniques, decision making, and marketing strategy development.

Semester(s) Traditionally Offered: Spring

MGT 6540 - Special Topics in Marketing
3 credits

Selected topics in marketing pursued in depth. Topics and instructors vary semester to semester. Current topics include: Marketing Communications and Supplemental Aspects of Electronic Commerce, The Changing Environment of Marketing Institutions, and Buyer Behavior.

Prerequisite/Restriction: MGT 6520.

Semester(s) Traditionally Offered: Spring

MGT 6550 - Talent Acquisition and Retention
3 credits

Focuses upon creation of competitive advantage through strategic human resources planning and staffing. Topics include job analysis, preparing candidate specifications, recruitment, assessment, and placement. Also covers pertinent laws/regulations and applicable descriptive/inferential statistics.

Semester(s) Traditionally Offered: Fall

MGT 6560 - Market Analysis and Decision Making
3 credits

Develops skills necessary to plan and implement an effective marketing strategy. Focuses on role of marketing information in managerial decision making.

Uses marketing cases and/or simulation games throughout the course.

Semester(s) Traditionally Offered: Fall, Spring

MGT 6620 - Training and Organizational Development
3 credits

Provides advanced treatment of employee, management, and organizational development. Specific topics include: historical background, needs assessment, program design and implementation, outcomes evaluation, and how individuals and organizations change.

Semester(s) Traditionally Offered: Spring

MGT 6630 - Total Rewards and Employee Performance
3 credits

Strategic analysis and design of compensation, benefits, and performance management systems. Key topics include performance assessment; employee motivation, discipline, and performance improvement; and design and implementation of compensation and benefit systems to attract and retain talent, while facilitating achievement of the strategic objectives of the organization.

Semester(s) Traditionally Offered: Spring

MGT 6640 - Selected Topics in Management and Human Resources
1-3 credits

Selected topics in management and/or human resources are pursued in depth. Topics and instructor may vary.

Cross-listed as: MGT 5640.

Repeatable for credit.

MGT 6650 - Team and Interpersonal Effectiveness
3 credits

Experiential course designed to develop team effectiveness, and specific managerial and leadership skills contributing to interpersonal competence and effectiveness in work groups and organizations.

Semester(s) Traditionally Offered: Fall
MGT 6670 - Employee Relations and the Labor Movement  
3 credits

Comprehensive survey of union-management relationships, including labor markets and the labor movement, labor history and law, union organization and government, and contract negotiation and administration. Includes exercises and cases in negotiations and grievance processes.

Semester(s) Traditionally Offered: Spring

MGT 6680 - Human Capital Management  
3 credits

Introduction to human capital management practices. Specific objectives include developing a working understanding of the links between HRM and firm outcomes, gaining a working knowledge of HR database technologies, and achieving an ability to develop and use fundamental HR costing techniques.

Semester(s) Traditionally Offered: Fall

MGT 6690 - Human Resource Strategy  
3 credits

Capstone course in Human Resource Management, designed to integrate concepts learned in specialized courses to the management of a total Human Resource function, with integration from both strategic and tactical perspectives. Covers domestic and international issues, as well as organizational change and development.

Semester(s) Traditionally Offered: Fall

MGT 6710 - Essentials of Operations Management  
1.5 credits

Introduction of operations management principles for students entering a master's degree program in the Huntsman School of Business.

Prerequisite/Restriction: Acceptance into a Huntsman School of Business master's degree program.

MGT 6720 - Operations Management  
3 credits

Study of basic process functions in managing a production or service organization, such as inventory control, production control, procurement, quality control, production planning, forecasting, etc.

Semester(s) Traditionally Offered: Fall

MGT 6730 - Continuous Improvement  
3 credits

Application of continuous improvement concepts, systems, and techniques throughout the organization. Analysis of contemporary methods of management and continuous improvement. Topics include: continuous flow, scientific thinking and the continuous improvement cycle, value stream mapping, root cause analysis, mistake proofing, and creative problem-solving.

Cross-listed as: MGT 5730.

Semester(s) Traditionally Offered: Fall, Spring

MGT 6740 - Decision Making in Operations Management  
3 credits

Selected topics in operations management pursued in depth. Topics and instructors vary from semester to semester.

Prerequisite/Restriction: MGT 6720.

Semester(s) Traditionally Offered: Spring

MGT 6760 - Employment Law  
3 credits

Examines laws related to employment, labor relations, civil rights, compensation, safety, health, and retirement. Provides experience in dispute resolution techniques in a nonunion employment setting, including negotiation, mediation, and arbitration.

Semester(s) Traditionally Offered: Fall

MGT 6770 - Ethics for the Business Professional  
1.5 credits
Taking a stakeholder perspective on business, this course introduces students to several moral and ethical frameworks. Current case analyses and experiential activities allow students to confront ethical dilemmas and work through acceptable alternatives.

Semester(s) Traditionally Offered: Fall

MGT 6780 - The Role of Business in Society
1.5 credits

Considers relationship between business and its societal context, including a discussion of how business enterprises maintain their legitimacy and mandate. Helps students develop an analytical framework for addressing issues at the intersection of business and society, including the personal, cultural, and societal consequences of business decisions.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 6860 - Business Research Methods
3 credits

Explores the fundamentals of qualitative and quantitative data collection and analysis. Students design and implement small, integrated research activities, then use the results to make business strategy recommendations.

Semester(s) Traditionally Offered: Spring

MGT 6890 - Global Business Strategy
3 credits

Integrative capstone course, taking a CEO's perspective, addressing global competitiveness, strategic assessment, policy development, and strategy execution.

Prerequisite/Restriction: Must be taken at end of advanced MBA program.

Semester(s) Traditionally Offered: Summer

MGT 6900 - Independent Research and Reading
1-3 credits

Provides opportunity for students to pursue special interests under tutorship of the faculty.

Prerequisite/Restriction: Approval of faculty member and department head.

Repeatable for credit.

MGT 6960 - Professional Paper
3 credits

Preparation of paper of professional quality, designed to demonstrate ability to complete a major project and effectively present the results.

MGT 6970 - Thesis
1-4 credits

Designed for students preparing a master's degree thesis.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MGT 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Management Information Systems

MIS 2100 - Principles of Management Information Systems
3 credits

Covers principles of management information systems including how to use and manage information technology to improve business processes, improve decision making, and gain competitive advantage. Includes MIS concepts and vocabulary, as well as information technology.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 2200 - Business Communication (CI)
CI Communications Intensive
3 credits

Development and application of effective oral and written business communication skills. Language/mechanics, grammar, and document formatting.

Prerequisite/Restriction: STAT 1040 or MATH 1030, MATH 1050, or MATH 1100 (or Math ACT score of at least 25 or Math SAT score of at least 580); GPA of 2.5 or
higher, and one of the following: (1) passing score on Huntsman School of Business English Usage Exam, (2) ACT English Section score of at least 25, (3) English AP score of 3 or better, or (4) completion of OSS 1550 with a B or better grade.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 3330 - Database Management
3 credits

Theory and application of designing, developing, and maintaining database systems. Principles of management of data resources to support effective information systems in organizations.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, and MIS 2100 or OSS 2450.

Semester(s) Traditionally Offered: Fall, Spring

MIS 3450 - Designing Graphical User Interfaces for Electronic Commerce
3 credits

Application of current web standards, techniques, and web design principles to develop graphical user interfaces using an integrated development environment (IDE).

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, and MIS 2100 or OSS 2450.

Semester(s) Traditionally Offered: Fall

MIS 3500 - Introduction to Business Applications Programming
3 credits

Creation of applications to solve business problems or support business functions related to financial, personnel, sales, and information systems management. Students create working systems using widely used Windows software and standard programming principles.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits.

MIS 3800 - Information Technology Hardware and System Software
3 credits

Principles and application of computer hardware and software. Includes topics related to theoretical underpinnings, setup, installation, configuration, and management of computer hardware and system software.

Prerequisite/Restriction: MIS 2100, admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits.

Semester(s) Traditionally Offered: Fall

MIS 4330 - Database Implementation
3 credits

Application of advanced database concepts using enterprise-wide database products. Includes advanced structured query language (SQL) development, database programming development, database administration basics, integration of database tools within a project context, introduction of data mining and data warehousing, reporting tools, and database and XML integration.

Prerequisite/Restriction: MIS 3330 or equivalent.

Cross-listed as: MIS 6330.

Semester(s) Traditionally Offered: Spring

MIS 4350 - Introduction to Performance Improvement Projects
3 credits

Introductory course in performance improvement projects. Includes analysis of current business processes in order to devise appropriate training and development programs or information systems applications. Students learn the systems approach to designing and implementing programs or applications in business.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits.
Cross-listed as: MIS 6350.

Semester(s) Traditionally Offered: Spring
MIS 4550 - Principles of International Business Communications (CI)
CI Communications Intensive
3 credits

Culture-general and culture-specific study of business communication in the diverse world of international business from both theoretical and applied perspectives.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits.

Semester(s) Traditionally Offered: Spring
MIS 4800 - Security of Business Information Systems
3 credits

In-depth exploration of security issues in business information systems. Includes workstation, work-groups, intranet, and wide-area network security. Covers development of security policies and procedures.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, and MIS 2100 or OSS 2450.

Cross-listed as: MIS 6800.

Semester(s) Traditionally Offered: Fall, every other year
MIS 5150 - Special Topics: Emerging Technologies in Management Information Systems
3 credits

Special topics in Management Information Systems not covered in regular course offerings. Course is repeatable for credit only when students enroll for a topic for which they have not previously received credit. This course is offered from time to time, but usually only when the instructor has a special topic or project.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, and MIS 3330.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall
MIS 5300 - Advanced Data Communications
3 credits

Principles of data communications, local and wide-area networks, hardware, software, media standards, management, and business applications. Management and strategic use of local-area networks (LANs) and wide-area networks (WANs) to solve business problems.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, and MIS 2100 or OSS 2450.

Semester(s) Traditionally Offered: Fall
MIS 5350 - Quantitative Financial Modeling and Applications
3 credits

Introduction to quantitative methods and computer applications applicable in financial modeling. Covers financial statement modeling, asset allocation, risk analysis, scenario generation, and option pricing through the introduction and proper uses of spreadsheet modeling, decision analysis, simulation, and optimization techniques.
Prerequisite/Restriction: FIN 3400 and MIS 2100

Cross-listed as: FIN 5350

Semester(s) Traditionally Offered: Spring

MIS 5650 - Advanced Website Development
3 credits

Creating e-commerce websites using a combination of the following technologies: XHTML, PHP, JavaScript, and DBMSs such as Oracle, MySQL, SQL server 2005, etc. This technical course maintains a business focus as a transaction-oriented commercial site.

Prerequisite/Restriction: CS 1400 or MIS 3500; and MIS 3330.

Cross-listed as: MIS 6650.

Semester(s) Traditionally Offered: Spring

MIS 5700 - Internet Management and Electronic Commerce (DSS)
DSS Depth Social Sciences
3 credits

Familiarizes students with concepts and technologies relating to business and the Internet. Focuses on the new business environment that has evolved through the Internet, as well as associated technologies and strategies.

Prerequisite/Restriction: OSS 1400, admittance to a USU major, cumulative GPA of 2.67 or higher, and completion of at least 40 credits. Some programming experience is helpful.

Semester(s) Traditionally Offered: Fall

MIS 5900 - Systems Design and Implementation
3 credits

Management, evaluation, documentation, maintenance, and reengineering of business information systems projects.

Prerequisite/Restriction: Admittance to a USU major, cumulative GPA of 2.67 or higher, completion of at least 40 credits, MIS 3330, and MIS 3500 or CS 1400.
working prototype to solve a real-world information systems problem.

Semester(s) Traditionally Offered: Spring

MIS 6150 - Communication for Business
3 credits

In-depth study of the process for preparing written business communications and related oral presentations. Preparation of reports relevant to student’s major.

Prerequisite/Restriction: MIS 2200 or equivalent.

Semester(s) Traditionally Offered: Fall

MIS 6180 - Intrasession MBA Workshop
0.5-1 credit

Intensive workshops designed to enhance the MBA experience.

Repeatable for credit.

MIS 6200 - Business Data Communication Systems
3 credits

Introduction to business data communications, including concepts, network architecture, data communication software and hardware, distributed information systems, and business communication system services.

Semester(s) Traditionally Offered: Fall

MIS 6230 - Management of Database Systems
3 credits

Theory and application of designing, developing, and maintaining database systems. Principles of management of data resources to support effective information systems in organizations.

Semester(s) Traditionally Offered: Fall, Spring

MIS 6250 - Graduate Internship
1-6 credits

Graduate-level internship in business, industry, or government position approved by department. Requires written learning objectives, performance evaluation, and a final internship written report. Requires 75 hours internship per 1 semester credit.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 6330 - Database Implementation
3 credits

Application of advanced database concepts using enterprise-wide database products. Includes advanced structured query language (SQL) development, database programming development, database administration basics, integration of database tools within a project context, introduction of data mining and data warehousing, reporting tools, and database and XML integration.

Prerequisite/Restriction: MIS 3330 or equivalent.

Cross-listed as: MIS 4330.

Semester(s) Traditionally Offered: Spring

MIS 6350 - Introduction to Performance Improvement Projects
3 credits

Introductory course in performance improvement projects. Includes analysis of current business processes in order to devise appropriate training and development programs or information systems applications. Students learn the systems approach to designing and implementing programs or applications in business.

Cross-listed as: MIS 4350.

Semester(s) Traditionally Offered: Spring

MIS 6400 - Local Area Network Management for Business
3 credits

Application of networking concepts related to the management of local area networks. Includes topics related to setup, management, and maintenance of local area networks and installation of electronic mail-handling systems.

MIS 6410 - Human-Computer Interface Design
3 credits

Integrates aspects of industrial psychology, work physiology, human environments, job analysis, and
hardware/software engineering in the study of designing effective, efficient input/output interfaces for business information systems.

MIS 6440 - Information and Decision Making
3 credits

Case-based approach to learning role of information technology when making quantitative and qualitative analyses, including statistical techniques to solve business problems through the use of information technology.

Prerequisite/Restriction: At least one graduate or undergraduate class in statistics.

MIS 6450 - Human-Computer Interface Design
3 credits

Application of human-computer interface design principles for e-commerce projects using an integrated development environment (IDE).

Semester(s) Traditionally Offered: Fall

MIS 6500 - Developing Business Information Systems with Advanced Software Concepts
3 credits

Creation of custom applications to solve typical business problems or support common functions using Visual Basic programming and OLE Automation with MS Office software.

Prerequisite/Restriction: Knowledge of database and spreadsheet software.

Semester(s) Traditionally Offered: Fall, Spring

MIS 6510 - Information Systems for Business
3 credits

Introduction to information systems at general management level. Includes strategic look at needs of an organization and how the function of information systems can help the organization become more effective.

Semester(s) Traditionally Offered: Summer

MIS 6550 - International Business Communication
3 credits

Culture-general and culture-specific study of business communication in the diverse world of international business from both theoretical and applied perspectives.

MIS 6640 - E-Commerce Data Interchange Using XML
3 credits

Designed to build e-commerce applications using XML (Extensible Markup Language) as the underlying technology. Students will also learn to parse XML documents, use Extensible Style Sheet language, and use XSQL (an Oracle technology) to tie XML with its database.

Prerequisite/Restriction: BUS 3100, MIS 3330, and MIS 3500.

MIS 6650 - Advanced Website Development
3 credits

Creating e-commerce websites using a combination of the following technologies: XHTML, PHP, JavaScript, and DBMSs such as Oracle, MySQL, SQL server 2005, etc. This technical course maintains a business focus as a transaction-oriented commercial site.

Prerequisite/Restriction: CS 1400 or MIS 3500; and MIS 3330.

Cross-listed as: MIS 5650.

Semester(s) Traditionally Offered: Spring

MIS 6660 - The Adult Business Learner
3 credits

Focuses on the adult business learner, the concept of the “learning organization,” and the different types of postsecondary institutions that provide adult training and education in business.

MIS 6700 - Information Systems Strategies for Electronic Commerce
3 credits

A management-oriented treatment of general information systems principles and topics relating to information systems strategies for electronic commerce, such as business models, mass customization, market research, security and assurance, entrepreneurship, intelligent agents, virtual corporations, electronic payments, and customer service.
Semester(s) Traditionally Offered: Spring

MIS 6750 - Business Process Reengineering Using Information Technology
3 credits

Examines methodologies and state-of-the-art thinking in the area of business process reengineering. Designed to help students understand how organizations manage change in contemporary global business environments by utilizing the latest information systems and technology techniques.

MIS 6770 - Competency-based Instruction
3 credits

Business teachers learn how to develop competency-based instruction by completing a CBI project.

MIS 6800 - Security of Business Information Systems
3 credits

In-depth exploration of security issues in business information systems. Includes workstation, work-groups, intranet, and wide-area network security. Covers development of security policies and procedures. Includes information necessary to pass Certified Information Systems Security Professionals exam.

Prerequisite/Restriction: MIS 3500 or graduate admission.

Cross-listed as: MIS 4800.

Semester(s) Traditionally Offered: Spring

MIS 6810 - Introduction to the Research Process
3 credits

Essential scientific research concepts of theory development and data collection and the technology of research, including writing and funding proposals, experimental and study design, and project management. Includes a hands-on research project conducted by the student.

Repeatable for credit.

MIS 6950 - Independent Readings
1-3 credits

Specialized projects for graduate students. Repeatable for credit.

MIS 6970 - Master's Paper
1-6 credits

Master's-level thesis or Plan B research credit. Repeatable for credit. Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit. Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 7250 - Graduate Research Internship
1-3 credits

For doctoral students desiring to improve their research capability. Prior approval required. Repeatable to a maximum of six credits.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 7600 - Historical Foundations of Information Systems
3 credits

Provides in-depth analysis and review of foundational literature, important topics, latest results, and emerging areas of information systems research.

Semester(s) Traditionally Offered: Spring

MIS 7610 - Critical Analysis of Issues
3 credits

Examines critical analysis/thinking techniques, creative problem solving, and the identification of issues and trends in the field.

MIS 7950 - Independent Readings
1-3 credits

Independent readings for graduate students. Repeatable to a maximum of 6 credits.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 7970 - Doctoral Dissertation
1-12 credits

Independent readings for graduate students. Repeatable to a maximum of 6 credits.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MIS 7990 - Continuing Graduate Advisement
1-9 credits

Prerequisite/Restriction: Enrollment restricted to doctoral-level students only. Signature of department head required.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Mathematics

MATH 0920 - Math Skills Review of Math 0990
0 credit

Review of mathematics skills for MATH 0990 for USU students returning from extended absences from USU, or for students whose prerequisites for courses are more than one year (three consecutive semesters) old.

Remedial
Semester(s) Traditionally Offered: Fall, Spring

MATH 0921 - Math Skills Review of Math 1010
0 credit

Review of mathematics skills for MATH 1010 for USU students returning from extended absences from USU, or for students whose prerequisites for courses are more than one year (three consecutive semesters) old.

Remedial
Semester(s) Traditionally Offered: Fall, Spring

MATH 0922 - Math Skills Review of Math 1050 and 1060
0 credit

Review of mathematics skills for MATH 1050 and MATH 1060 for USU students returning from extended absences from USU, or for students whose prerequisites for courses are more than one year (three consecutive semesters) old.

Remedial
Semester(s) Traditionally Offered: Fall, Spring

MATH 0923 - Math Skills Review of Calculus
0 credit

Review of mathematics skills for calculus for USU students returning from extended absences from USU, or for students whose prerequisites for courses are more than one year (three consecutive semesters) old.

Remedial
Semester(s) Traditionally Offered: Fall, Spring

MATH 0950 - Pre-algebra
4 credits

Developmental course in arithmetic. Calculations involving whole numbers, decimals, fractions, proportions, ratios, percents and exponents; order of operations; elementary statistics; English and metric measurement systems and conversions; perimeter, area and volumes of geometric figures; and an introduction to the basic concepts of algebra. MATH 0950 is a remedial class not carrying USU or transfer credit. Remedial fee required.

Remedial
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 0990 - Beginning Algebra
3 credits

A first course in algebra. Real numbers; algebraic expressions; graphing and solving equations and inequalities; operations on polynomials; factoring polynomials; rational expressions and equations; and systems of equations. Remedial class not carrying USU or transfer credit. Remedial fee required.

Prerequisite/Restriction: One of the following within the math prerequisite acceptability time limit: (1) C- or better in MATH 0950, or (2) satisfactory Math Placement Exam score.
Remedial

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 1010 - Intermediate Algebra
4 credits

Linear equations and inequalities, polynomials and exponents, rational expressions, roots and radicals, quadratic equations, lines, systems of equations and inequalities, applied problems, factoring, graphs, the quadratic formula, completing the square and complex numbers. Course fee required.

Prerequisite/Restriction: One of the following within the Math prerequisite acceptability time limit: (1) C or better in MATH 0990, or (2) satisfactory Math Placement Exam score.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 1020 - Trade Mathematics (MA)
MA Mathematics
3 credits

Designed to cover the basic skills needed by students who are enrolled in auto mechanics, diesel mechanics, electronics, machine tool technology, and welding. It is not intended to prepare the student for calculus. Topics to be covered include a review of basic arithmetic, precision and accuracy, significant figures, English and metric measurement systems and conversions, ratio and proportion, variation, operations with formulas, solving linear and quadratic equations, systems of equations in two and three variables, fractional equations, perimeter, area and volume of geometric figures, the Pythagorean theorem, basic trigonometry, graphs of linear, quadratic and exponential functions, logarithms, polar coordinates, and the complex number system. Throughout the course, emphasis is placed on solving problems related to the technical fields.

Prerequisite/Restriction: MATH 0990

Campus: USU Eastern only

MATH 1060 - Trigonometry
2 credits

Trigonometric functions, equations, identities, and applications. Graphing calculator required.

Prerequisite/Restriction: C or better in MATH 1010 (or MATH 1050), or Math ACT score of at least 23 (Math SAT score of at least 540), or AP calculus score of at least 3 on the AB exam, or satisfactory score on Math Placement Exam within the Math prerequisite acceptability time limit. May be taken concurrently with MATH 1050.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 1100 - Calculus Techniques (QL)
QL Quantitative Literacy
3 credits

Techniques of elementary calculus, differentiation, integration, elementary optimization, and introduction to partial derivatives. Applications in business, social science, and natural resources. Graphing calculator
Prerequisite/Restriction: C- or better in MATH 1050 or Math ACT score of at least 25 (Math SAT score of at least 580) or satisfactory score on Math Placement Exam within the Math prerequisite acceptability time limit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 1210 - Calculus I (QL)
QL Quantitative Literacy
4 credits

Analytic geometry, differential and integral calculus, transcendental functions, and applications. Graphing calculator required.

Prerequisite/Restriction: C- or better in MATH 1050 and MATH 1060, or Math ACT score of at least 27 (Math SAT score of at least 620), or AP Calculus score of at least 3 on AB exam or satisfactory score on Math Placement Exam within the Math prerequisite acceptability time limit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 1220 - Calculus II (QL)
QL Quantitative Literacy
4 credits

Integration, infinite series, introduction to vectors, and applications. Graphing calculator required.

Prerequisite/Restriction: C- or better in MATH 1210, or AP score of at least 4 on Calculus AB exam or at least 3 on Calculus BC exam.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 2020 - Introduction to Logic and Geometry (QI)
QI Quantitative Intensive
3 credits

Logic; introduction to algebraic geometry and Euclidean geometry. MATH 2020 is a mathematics content course, not a methods course.

Prerequisite/Restriction: C- or better in MATH 1050 or Math ACT score of at least 25 (Math SAT score of at least 580) or satisfactory score on Math Placement Exam within the Math prerequisite acceptability time limit. Course fee required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 2210 - Multivariable Calculus (QI)
QI Quantitative Intensive
3 credits

Vector calculus, multiple integration, partial derivatives, line and surface integrals. The theorems of Green, Gauss, and Stokes.

Prerequisite/Restriction: C- or better in MATH 1220 or AP Calculus score of 5 on BC exam.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 2250 - Linear Algebra and Differential Equations (QI)
QI Quantitative Intensive
4 credits

Linear systems, abstract vector spaces, matrices through eigenvalues and eigenvectors, solution of ode's, Laplace transforms, first order systems.

Prerequisite/Restriction: C- or better in MATH 1220; or AP Calculus score of 5 on BC exam and C- or better in MATH 2210.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 2260 - Internship and Cooperative Studies
1-6 credits

Lower-division internship/cooperative work experience. Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 2270 - Linear Algebra (QI)
QI Quantitative Intensive
3 credits

Solutions of linear systems, matrix operations, matrix factorization, vector spaces, subspaces, linear independence, bases, linear transformations, eigensystems, orthogonality, Gram-Schmidt orthogonalization, and projections.

Prerequisite/Restriction: C- or better in MATH 1220; or AP Math score of 5 on calculus BC exam and C- or better in MATH 2210.
MATH 2280 - Ordinary Differential Equations (QI)  
QI Quantitative Intensive  
3 credits  
Prerequisite/Restriction: C- or better in MATH 2270.

MATH 2910 - Directed Readings and Conference  
1-3 credits  
Prerequisite/Restriction: Permission of instructor.  
Repeatable for credit.

MATH 2977 - Cooperative Education  
1-3 credits  
Provides supervised on-the-job training in mathematics. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, and credit agreement.  
Prerequisite/Restriction: Permission of instructor.

MATH 3110 - Modern Geometry  
3 credits  
Euclidean and non-Euclidean geometry, with emphasis on historical significance of parallel postulate. Axiomatic development of geometry and theorems.  
Prerequisite/Restriction: C- or better in MATH 1220.

MATH 3300 - School Laboratory for Mathematics Teachers Level I  
1 credit  
Provides preservice mathematics teachers with supervised experiences working with teachers and students in middle and secondary schools. Activities coordinated with other Level I professional education courses.  
Pass/Fail only.

MATH 3310 - Discrete Mathematics  
3 credits  
Logic and axiomatics, sets, functions, counting methods, recurrence relations, graph theory, Boolean algebras, combinatorical circuits, automata, grammars, and languages.  
Prerequisite/Restriction: C- or better in MATH 1220.

MATH 4200 - Foundations of Analysis (CI)  
CI Communications Intensive  
3 credits  
Fundamental concepts of analysis studied from a rigorous point of view. Rigorous development of the real number system and calculus. Emphasis on learning how to construct proofs.  
Prerequisite/Restriction: C- or better in MATH 2210, MATH 2250; or C- or better in MATH 2210, MATH 2270, MATH 2280.

MATH 4230 - Applied Mathematics in Biology (QI)  
QI Quantitative Intensive  
3 credits  
Formulation, analysis, and experimental tests of mathematical models in biology. Combines mathematics, computing, experimental design, and statistical analysis while applying the scientific method to biological systems. Lectures, recitations, and a laboratory.  
Prerequisite/Restriction: C- or better in BIOL 1620 and MATH 2250; or permission of instructor. Programming experience recommended.  
Cross-listed as: BIOL 4230.
MATH 4250 - Advanced Internship/Co-op
1-6 credits

An internship/cooperative work experience which has been determined by the department to be at the 4000-level.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 4300 - School Laboratory for Mathematics Teachers Level II
1 credit

Provides preservice mathematics teachers with supervised experiences working with teachers and students in middle and secondary schools. Activities coordinated with other Level II professional education courses.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

MATH 4310 - Introduction to Algebraic Structures (CI)
CI Communications Intensive
3 credits

First course in theory of algebraic structures. Topics include elementary group and ring theory.

Prerequisite/Restriction: C- or better in MATH 2210, MATH 2270, MATH 2280; or C- or better in MATH 2210, MATH 2250.

Semester(s) Traditionally Offered: Fall, Spring

MATH 4400 - History of Mathematics and Number Theory
3 credits

Chronological parallel of math history with civilization, evolution of mathematical thought, historical foundations of numbers, computation, geometry, algebra, trigonometry, and calculus. Introduction to number theory.

Prerequisite/Restriction: At least one of MATH 4200 and MATH 4310 with a C- or better, and concurrent enrollment in the other.

Semester(s) Traditionally Offered: Spring

MATH 4500 - Methods of Secondary School Mathematics Teaching
3 credits

A teaching methods course required of all prospective secondary school mathematics teachers. To receive graduate credit for the dual-listed MATH 6500 course, students must complete an extra project. Students having a Methods of Secondary Math Teaching Methods course on their transcripts will not be allowed to apply MATH 6500 credit toward a master's degree.

Prerequisite/Restriction: MATH 3110; and one of MATH 4200 or MATH 4310.

Cross-listed as: MATH 6500.

Semester(s) Traditionally Offered: Fall, Spring

MATH 4700 - Engineering Mathematics and Statistics
3 credits

Advanced engineering mathematics and statistics including: random variables; distributions; central limit theory; hypothesis testing; Anova; quality control; Fourier series; introductory analytic and numerical methods for elliptic, parabolic, and hyperbolic PDEs; and modern software packages.

Prerequisite/Restriction: C- or better in MATH 2210; C- or better in MATH 2250 or MATH 2280.

Semester(s) Traditionally Offered: Fall, Spring

MATH 4910 - Directed Reading and Conference
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 5010 - Capstone Mathematics, Statistics, and Technology for Teachers
3 credits
Builds upon competencies gained from prior courses and incorporates technologies available for teaching and learning mathematics to analyze and interrelate mathematical concepts. Applications in secondary school mathematics curricula.

Prerequisite/Restriction: C- or better in MATH 3310; and successful completion of, or concurrent enrollment in, MATH 3110, MATH 4200, MATH 4310, MATH 4400, and MATH 5710.

Semester(s) Traditionally Offered: Fall

MATH 5020 - Mathematical Cognition and Assessment of Mathematical Achievement
3 credits

Pre-service and inservice mathematics teachers (1) examine cognitive principles relevant to learning mathematics, (2) apply research-based principles for designing, validating, and interpreting measures of mathematical achievement, and (3) interpret the results of standardized and high-stakes tests, and communicate those results to mathematics students and their parents.

Prerequisite/Restriction: Completion of an upper-level mathematics or statistics course (3000-level or higher).

Semester(s) Traditionally Offered: Fall

MATH 5110 - Differential Geometry
3 credits

Introduction to geometry of curves and surfaces in three dimensions, using graphic and symbolic software.

Prerequisite/Restriction: C- or better in MATH 2210, MATH 2250; or C- or better in MATH 2210, MATH 2270, MATH 2280.

Semester(s) Traditionally Offered: Fall

MATH 5210 - Introduction to Analysis I
3 credits

One and several variable calculus from an advanced point of view. Proofs of all main theorems in calculus.

Prerequisite/Restriction: C- or better in MATH 4200 or MATH 5510.

Semester(s) Traditionally Offered: Fall

MATH 5220 - Introduction to Analysis II
3 credits

Continuation of MATH 5210. Rigorous development of multivariable advanced calculus.

Prerequisite/Restriction: C- or better in MATH 5210.

Semester(s) Traditionally Offered: Spring

MATH 5270 - Complex Variables
3 credits

Basic theory and applications of complex variables for mathematics, physics, and engineering students. Topics include analytic functions, contour integration, and residue theorem conformal mappings.

Prerequisite/Restriction: C- or better in MATH 2210, MATH 2250; or C- or better in MATH 2210, MATH 2270, MATH 2280.

Semester(s) Traditionally Offered: Spring

MATH 5310 - Introduction to Modern Algebra
3 credits

Continuation of MATH 4310. Topics include: Sylow theory for finite groups, factorization theory for commutative rings, and Galois theory.

Prerequisite/Restriction: C- or better in MATH 4310.

Semester(s) Traditionally Offered: Spring

MATH 5340 - Theory of Linear Algebra
3 credits

Vector space theory, linear transformations and matrices, eigenvalues and eigenvectors, inner product spaces, orthogonality, canonical forms, and Hermitian matrices.

Prerequisite/Restriction: C- or better in MATH 2270; or C- or better in MATH 4310; or permission of instructor.

Semester(s) Traditionally Offered: Fall

MATH 5410 - Methods of Applied Mathematics
3 credits

Basic modeling and qualitative understanding, including dimensional analysis (Buckingham Pi theorem).

Prerequisite/Restriction: C- or better in MATH 2210, MATH 2250; or C- or better in MATH 2210, MATH 2270, MATH 2280.

Semester(s) Traditionally Offered: Fall

MATH 5420 - Partial Differential Equations
3 credits

Modeling with partial differential equations, diffusion, and wave equations. Classical solution techniques including: maximum principles, separation of variables (eigenfunctions), method of characteristics, Fourier and Laplace transforms, and singularity methods (Green's Functions). Emphasizes understanding and solving physical equations.

Prerequisite/Restriction: C- or better in MATH 2250 or MATH 2280.

Semester(s) Traditionally Offered: Spring

MATH 5460 - Introduction to the Theory and Application of Nonlinear Dynamical Systems
3 credits

Qualitative behavior of nonlinear maps and ordinary differential equations. Stability of solutions, bifurcation theory, chaos, and applications.

Prerequisite/Restriction: C- or better in MATH 2250 or MATH 2280.

Semester(s) Traditionally Offered: Spring

MATH 5510 - Introduction to Topology
3 credits

Elementary point-set topology, topological spaces, separation axioms, metric spaces, compactness, connectedness, order topology, countability axioms, continuity, and homeomorphisms.

Prerequisite/Restriction: C- or better in MATH 4200.

Semester(s) Traditionally Offered: Fall alternate years

MATH 5560 - Actuarial Financial Mathematics
3 credits

Introduces fundamental concepts of financial mathematics, focusing on applications to non-life insurance. Topics include interest theory, cash flows and yield rates, annuities, portfolio insurance, and derivatives. Also includes discussion of probability models for underlying assets.

Prerequisite/Restriction: MATH 1220 and STAT 3000.

Semester(s) Traditionally Offered: Spring

MATH 5570 - Actuarial Math I
3 credits

Introduction to theory of risk and its application to construction and analysis of models for insurance systems.

Prerequisite/Restriction: C- or better in MATH 5710, STAT 3000, and permission of instructor.

Semester(s) Traditionally Offered: Fall

MATH 5580 - Actuarial Math II (CI)
CI Communications Intensive
3 credits

Continuation of MATH 5570.

Prerequisite/Restriction: C- or better in MATH 5570.

Semester(s) Traditionally Offered: Spring

MATH 5610 - Computational Linear Algebra and Solution of Systems of Equations
3 credits

Numerical solutions of systems of linear and nonlinear equations, methods for eigensystems, least squares problems, finding roots of functions and nonlinear systems, constrained and unconstrained optimization.

Prerequisite/Restriction: C- or better in MATH 2210, C- or better in MATH 2250 or MATH 2270, and a high-level programming language.

Semester(s) Traditionally Offered: Fall
MATH 5620 - Numerical Solution of Differential Equations  
3 credits

Numerical solution of differential equations, initial and boundary value problems, finite difference, finite element, and spectral methods (FFT) applied to ODEs and PDEs.

Prerequisite/Restriction: C- or better in MATH 2210; C- or better in MATH 2250 or MATH 2270; C- or better in MATH 2280; and a high-level programming language.

Semester(s) Traditionally Offered: Spring

MATH 5640 - Optimization  
3 credits

One-semester introductory survey of optimization, including both continuous and combinatorial problems. Topics include: linear programming, constrained and unconstrained optimization, network models, dynamic programming, and integer programming.

Prerequisite/Restriction: C- or better in MATH 2210; C- or better in MATH 2250 or MATH 2270; and a high-level programming language.

Semester(s) Traditionally Offered: Spring

MATH 5710 - Introduction to Probability  
3 credits

Discrete and continuous probability, random variables, distribution and density function, joint distributions, conditional probabilities and expectations, Bayes’ theorem, moments, moment generating functions, inequalities, convergence in probability and distribution, and central limit theorem.

Prerequisite/Restriction: C- or better in MATH 2210; and C- or better in MATH 2250 or MATH 2270.

Semester(s) Traditionally Offered: Fall, Spring

MATH 5720 - Introduction to Mathematical Statistics  
3 credits

Basic theory of point and interval estimation and hypothesis testing. Topics include: sufficiency and completeness; method-of-moments, best unbiased, maximum likelihood, Bayes’, and empirical Bayes’ estimators; Neyman-Pearson lemma; and likelihood ratio tests.

Prerequisite/Restriction: C- or better in MATH 5710.

Semester(s) Traditionally Offered: Spring

MATH 5760 - Stochastic Processes  
3 credits

Application of stochastic processes to engineering and science. Topics include Markov chains, Poisson processes, renewal theory, and Brownian motion.

Prerequisite/Restriction: C- or better in MATH 5710.

Semester(s) Traditionally Offered: Fall

MATH 5810 - Topics in Mathematics  
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

MATH 5820 - Topics in Mathematics  
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 5910 - Directed Readings and Conference  
1-3 credits

Prerequisite/Restriction: Prior arrangement with a specific instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 5950 - Honors Senior Project  
1-4 credits

A senior project required for completion of the departmental honors program.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer
MATH 6110 - Differential Geometry
3 credits
Topics include manifolds, calculus on manifolds, tensor calculus and differential forms, Lie groups, Riemannian geometry, deRham’s Theorem, and Hodge theory.

Prerequisite/Restriction: C- or better in MATH 5110 or MATH 5220; MATH 6110 must be completed prior to MATH 6120.

MATH 6120 - Differential Geometry
3 credits
Topics include manifolds, calculus on manifolds, tensor calculus and differential forms, Lie groups, Riemannian geometry, deRham’s Theorem, and Hodge theory.

Prerequisite/Restriction: C- or better in MATH 5110 or MATH 5220; MATH 6110 must be completed prior to MATH 6120.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6120 - Differential Geometry
3 credits
Topics include manifolds, calculus on manifolds, tensor calculus and differential forms, Lie groups, Riemannian geometry, deRham’s Theorem, and Hodge theory.

Prerequisite/Restriction: C- or better in MATH 5110 or MATH 5220; MATH 6110 must be completed prior to MATH 6120.

MATH 6210 - Real Analysis
3 credits
Measure theory, abstract integration, differentiation, introduction to functional analysis, Hilbert and Banach spaces.

Prerequisite/Restriction: C- or better in MATH 5210; MATH 6210 must be completed prior to MATH 6220.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6220 - Real Analysis
3 credits
Measure theory, abstract integration, differentiation, introduction to functional analysis, Hilbert and Banach spaces.

Prerequisite/Restriction: C- or better in MATH 5210; MATH 6210 must be completed prior to 6220.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6300 - Practicum in Mathematics/Statistics
Instruction for Graduates Pursuing Secondary Licensure
1 credit
A practicum which provides graduate students pursuing a Secondary Mathematics Teaching License with supervised experiences working with secondary students and teachers. To justify graduate credit, students must integrate the extra period required by MATH 6500 with this clinical experience. Students who have credit for a similar practicum at the undergraduate level may not apply credit for this experience toward a graduate degree. Should be taken concurrently with MATH 6500.

Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring

MATH 6310 - Modern Algebra
3 credits
Algebraic structures, including vector spaces, groups, rings, algebras, and modules. Topics include: category theory, elementary commutative ring theory, and algebraic geometry.

Prerequisite/Restriction: C- or better in MATH 5310; MATH 6310 must be completed prior to MATH 6320.

MATH 6320 - Modern Algebra
3 credits
Algebraic structures, including vector spaces, groups, rings, algebras, and modules. Topics include: category theory, elementary commutative ring theory, and algebraic geometry.

Prerequisite/Restriction: C- or better in MATH 5310;
MATH 6310 must be completed prior to 6320.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6340 - Multilinear Algebra and Matrix Theory
3 credits

Permutation groups and representations, tensor spaces, symmetry classes of tensors, generalized matrix functions, matrices and graphs, and combinatorial matrix algebra.

Prerequisite/Restriction: C- or better in MATH 5340; MATH 6340 must be completed prior to MATH 6350.

MATH 6350 - Multilinear Algebra and Matrix Theory
3 credits

Permutation groups and representations, tensor spaces, symmetry classes of tensors, generalized matrix functions, matrices and graphs, and combinatorial matrix algebra.

Prerequisite/Restriction: C- or better in MATH 5340; MATH 6340 must be completed prior to MATH 6350.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6410 - Ordinary Differential Equations I
3 credits

Existence-uniqueness theory, linear equations and systems, nonlinear equations, and stability.

Prerequisite/Restriction: C- or better in MATH 5210.

Semester(s) Traditionally Offered: Fall

MATH 6420 - Partial Differential Equations I
3 credits

Introduction to the theory of partial differential equations, including existence and uniqueness.

Prerequisite/Restriction: C- or better in MATH 5220 or MATH 6410.

Semester(s) Traditionally Offered: Spring

MATH 6440 - Ordinary Differential Equations II
3 credits

Asymptotic behavior, periodicity, boundary value problems, and perturbation methods.

Prerequisite/Restriction: C- or better in MATH 6410.

Semester(s) Traditionally Offered: Spring

MATH 6450 - Partial Differential Equations II
3 credits

Advanced existence and uniqueness theorems, behavior of solutions, Sobolev spaces.

Prerequisite/Restriction: C- or better in MATH 6210; and C- or better in MATH 5420 or MATH 6420.

Semester(s) Traditionally Offered: Spring

MATH 6470 - Advanced Asymptotic Methods
3 credits


Prerequisite/Restriction: C- or better in MATH 5420.

Semester(s) Traditionally Offered: Spring

MATH 6500 - Methods of Secondary School Mathematics Teaching
3 credits

A teaching methods course required of all prospective secondary school mathematics teachers. To receive graduate credit, students must complete an extra project. Students having a Methods of Secondary Math Teaching Methods course on their transcripts will not be allowed to apply credit for this course toward a master's degree.

Prerequisite/Restriction: Matriculation into the Master's of Education Plan C program, the Master's of Mathematics program, or the USOE Alternative Route to Licensure Program.

Cross-listed as: MATH 4500.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6510 - Topology
3 credits
Homotopy theory, fundamental groups, covering spaces, singular homology with applications to spheres and Euclidean spaces, CW complexes, cohomology ring, and Poincare duality.

Prerequisite/Restriction: C- or better in MATH 4310, MATH 5510; and C- or better in MATH 5310 or consent of instructor. MATH 6510 must be completed prior to MATH 6520.

MATH 6520 - Topology
3 credits

Homotopy theory, fundamental groups, covering spaces, singular homology with applications to spheres and Euclidean spaces, CW complexes, cohomology ring, and Poincare duality.

Prerequisite/Restriction: C- or better in MATH 4310, MATH 5510; and C- or better in MATH 5310 or consent of instructor. MATH 6510 must be completed prior to 6520.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6610 - Matrix Computations
3 credits

Computational aspects of matrix theory, focusing on numerical methods for solving linear systems, least squares problems, and eigenvalue problems.

Prerequisite/Restriction: C- or better in MATH 5210 or MATH 5610, and experience with a high-level programming language.

Semester(s) Traditionally Offered: Fall

MATH 6620 - Numerical Analysis
3 credits

Numerical solution of ordinary and partial differential equations.

Prerequisite/Restriction: C- or better in MATH 6610 or consent of instructor.

Semester(s) Traditionally Offered: Spring

MATH 6640 - Optimization
3 credits

Unconstrained problems, smooth function methods, linearly constrained problems, linear and quadratic programming, nonlinearly constrained methods, and practicalities.

Prerequisite/Restriction: C- or better in MATH 5220 or consent of instructor.

Semester(s) Traditionally Offered: Spring

MATH 6750 - Probability Theory
3 credits

Probability spaces, random variables, distribution functions, expectations, independence, modes of convergence, limit theorems, and applications.

Prerequisite/Restriction: C- or better in MATH 5210; MATH 6750 must be completed prior to MATH 6760.

MATH 6760 - Probability Theory
3 credits

Probability spaces, random variables, distribution functions, expectations, independence, modes of convergence, limit theorems, and applications.

Prerequisite/Restriction: C- or better in MATH 5210; MATH 6750 must be completed prior to 6760.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6810 - Topics in Mathematics (Topic)
3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

MATH 6820 - Topics in Mathematics (Topic)
3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MATH 6910 - Directed Reading and Conference
1-3 credits

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MATH 6970 - Thesis
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MATH 6990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
MATH 7110 - Geometry (Topic)
3 credits

Repeatable for credit.
MATH 7120 - Geometry (Topic)
3 credits

Repeatable for credit.
MATH 7210 - Analysis (Topic)
3 credits

Repeatable for credit.
MATH 7220 - Analysis (Topic)
3 credits

Repeatable for credit.
MATH 7310 - Algebra (Topic)
3 credits

Repeatable for credit.
MATH 7320 - Algebra (Topic)
3 credits

Repeatable for credit.
MATH 7410 - Differential Equations (Topic)
3 credits

Repeatable for credit.
MATH 7420 - Differential Equations (Topic)
3 credits

Repeatable for credit.
MATH 7510 - Topology (Topic)
3 credits

Repeatable for credit.
MATH 7520 - Topology (Topic)
3 credits

Repeatable for credit.
MATH 7610 - Numerical Analysis (Topic)
3 credits

Repeatable for credit.
MATH 7620 - Numerical Analysis (Topic)
3 credits

Repeatable for credit.
MATH 7750 - Probability (Topic)
3 credits

Repeatable for credit.
MATH 7760 - Probability (Topic)
3 credits

Repeatable for credit.
MATH 7810 - Topics in Mathematics (Topic)
3 credits

Repeatable for credit.
MATH 7820 - Topics in Mathematics (Topic)
3 credits

Repeatable for credit.
MATH 7840 - Topics in Mathematics (Topic)
3 credits
MATH 7910 - College Teaching Internship
3 credits
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 7970 - Dissertation Research
1-15 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MATH 7990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Mechanical and Aerospace Engineering

MAE 1200 - Engineering Graphics
2 credits
Introduction to technical sketching, solid modeling, and engineering graphics. Concurrent engineering design process applied to a project. Students start with hand sketches, then move through variational geometry solid models, with tolerance analysis and control, until they have produced a complete set of manufacturing drawings conforming to the ASME standard.

Prerequisite/Restriction: MATH 1060 or Math ACT score of 27 or higher or AP Calculus score of 3 or higher.
Semester(s) Traditionally Offered: Fall, Spring

MAE 2160 - Material Science
3 credits
Study of atomic and microscopic structures of metals, polymers, ceramics, and composite materials, and how these structures affect material properties.

Prerequisite/Restriction: CHEM 1210 and ENGR 2140 (both may be taken concurrently).
Semester(s) Traditionally Offered: Fall, Spring

MAE 2200 - Engineering Numerical Methods I
3 credits
Introduction to computational methods, emphasizing software development using FORTRAN 95 (2 credits) and MATLAB (1 credit).

Prerequisite/Restriction: MATH 1220.

Semester(s) Traditionally Offered: Fall

MAE 2250 - Cooperative Practice
3 credits
Planned work experience in industry. Detailed program must have prior approval. Written report required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 2300 - Thermodynamics I
3 credits
First and second laws of thermodynamics; analysis of open and closed systems; equations of state; power and refrigeration cycles; and problem solving methodology.

Prerequisite/Restriction: MATH 1220; MATH 2210 (may be taken concurrently).
Semester(s) Traditionally Offered: Spring, Summer

MAE 2450 - Engineering Numerical Methods II
3 credits
Explores basic tools of numerical analysis, solution to ordinary and partial differential equations, software development using FORTRAN 95, and applications using computer algebra packages.

Prerequisite/Restriction: MAE 2200; MATH 2210, MATH 2250 (may be taken concurrently).
Semester(s) Traditionally Offered: Spring

MAE 2650 - Manufacturing Processes
3 credits
Introduction to manufacturing processes and CAD/CAM. Material forming, machining, finishing, and joining. Integration of manufacturing and CAD, plus the fundamentals and application of statistical process control.

Semester(s) Traditionally Offered: Spring
MAE 3040 - Mechanics of Solids
3 credits
Stress, strain, and deflection due to flexure and shear. Combined stresses, instability, nonsymmetric bending, torsion, and energy methods.
Prerequisite/Restriction: ENGR 2140.
Semester(s) Traditionally Offered: Fall

MAE 3320 - Advanced Dynamics
3 credits
Prerequisite/Restriction: ENGR 2030; MAE 2200 (may be taken concurrently).
Semester(s) Traditionally Offered: Fall

MAE 3340 - Instrumentation and Measurements
3 credits
Principles and application of mechanical instrumentation and experimentation. Sensing elements, signal conditioning, data acquisition, statistical analysis of data, and instrumentation system design.
Prerequisite/Restriction: ENGR 2140, ENGR 2210, MAE 3420.
Semester(s) Traditionally Offered: Spring

MAE 3400 - Thermodynamics II
3 credits
Second law analysis, power and refrigeration cycles, property relations, gas mixtures, psychrometrics, chemical reactions, introduction to heat transfer, steady state and transient conduction.
Prerequisite/Restriction: MAE 2300; MAE 2200 (may be taken concurrently).
Semester(s) Traditionally Offered: Fall

MAE 3420 - Fluid Mechanics
3 credits
Application of fluid dynamic theory to inviscid and viscous, incompressible and compressible, and external and internal fluid flows, with emphasis on laminar and turbulent boundary layers.
Prerequisite/Restriction: ENGR 2030, MAE 2200, MAE 2300 (MAE 2200 may be taken concurrently).
Semester(s) Traditionally Offered: Fall

MAE 3440 - Heat and Mass Transfer (QI)
QI Quantitative Intensive
3 credits
Introduction to convection, external flow, internal flow, free convection, boiling and condensation, heat exchangers, radiation and diffusion mass transfer. Includes design project.
Prerequisite/Restriction: MAE 3400, MAE 3420; MAE 2450 (may be taken concurrently).
Semester(s) Traditionally Offered: Spring

MAE 3600 - Engineering Professionalism and Ethics
1 credit
Seminar course introducing engineering students to the professional skills required in engineering practice. Topics address professional issues in ethics, legal responsibilities, economics, business, management, safety, environmental and societal impacts, contemporary issues, and lifelong learning.
Semester(s) Traditionally Offered: Fall

MAE 4300 - Machine Design
3 credits
Computer-aided design and synthesis of mechanisms, mechanical linkages, cams, fasteners, welds, gears, bearings, power transmission components, and lubrication. Component failure analysis based on metal fatigue related to dynamic loading.
Prerequisite/Restriction: MAE 3040.
Semester(s) Traditionally Offered: Spring
MAE 4400 - Fluids/Thermal Laboratory (CI)
CI Communications Intensive
2 credits

Laboratory experiences in observation and measurement of fundamental fluid and thermal phenomena.

Prerequisite/Restriction: MAE 3340, MAE 3440.

Semester(s) Traditionally Offered: Fall

MAE 4800 - Capstone Design I (CI)
CI Communications Intensive
3 credits

First course in the senior design sequence. Includes design process, teaming skills, engineering economics, project selection and management, proposal writing, technical writing, and technical presentations.

Prerequisite/Restriction: MAE 3440, MAE 4300 (both of which may be taken concurrently).

Semester(s) Traditionally Offered: Fall, Spring

MAE 4810 - Capstone Design II
3 credits

Second course in the senior design sequence. Includes design reviews, technical reporting, and design realization.

Prerequisite/Restriction: MAE 4800.

Semester(s) Traditionally Offered: Fall, Spring

MAE 5020 - Finite Element Methods in Solid Mechanics I
3 credits

Introduction to finite element methods and their application to the analysis and design of mechanical engineering systems.

Prerequisite/Restriction: MAE 3040

Cross-listed as: CEE 5020

Semester(s) Traditionally Offered: Fall

MAE 5300 - Vibrations
3 credits


Prerequisite/Restriction: ENGR 2030, ENGR 2140.

Semester(s) Traditionally Offered: Fall

MAE 5310 - Dynamic Systems and Controls
3 credits

Study of continuous-time systems, classical and modern systems design methods, transfer function models, state space, dynamics of linear systems, and frequency domain analysis and design techniques. Introduction to controllability and observability, and full-state pole placement controller design. Laboratory work required.

Prerequisite/Restriction: MAE 3340.

Semester(s) Traditionally Offered: Fall

MAE 5410 - Design and Optimization of Thermal Systems
3 credits

Discussion of the basic considerations that occur in the design of thermal systems, including problem formulation, appropriate modeling and solution methodologies, optimization techniques, and economic analysis.

Prerequisite/Restriction: MAE 3440.

Semester(s) Traditionally Offered: Fall
MAE 5420 - Compressible Fluid Flow
3 credits

Application of conservation of mass, momentum, and energy to the design and analysis of compressible fluid systems.

Prerequisite/Restriction: MAE 3400, MAE 3420.

Semester(s) Traditionally Offered: Fall

MAE 5440 - Computational Fluid Dynamics
3 credits

Introduction to computational fluid dynamics and heat transfer using the finite-volume method. Extensive code development. Application of a commercial CFD solver to a problem of interest.

Prerequisite/Restriction: MAE 3420 and MAE 3440.

Semester(s) Traditionally Offered: Spring

MAE 5500 - Aerodynamics
3 credits

Fundamentals of incompressible, inviscid flow; aerodynamic forces and moments; airfoil characteristics; incompressible flow around two-dimensional airfoils and finite wings; three-dimensional incompressible flow; and introduction to aircraft performance.

Prerequisite/Restriction: MAE 3420.

Semester(s) Traditionally Offered: Fall

MAE 5510 - Dynamics of Atmospheric Flight
3 credits

Aircraft equations of motion; aerodynamic forces and moments; aircraft stability and control in roll, pitch, and yaw; aircraft motion with six degrees of freedom; aircraft performance and design; and design project.

Prerequisite/Restriction: MAE 5500.

MAE 5520 - Elements of Space Flight
3 credits

Introduction to astrodynamics and orbital design. Spacecraft systems engineering including spacecraft subsystems (e.g., attitude control, communications, power, structures). Introduction to propulsion and launch vehicles.

Prerequisite/Restriction: MAE 3320 or PHYS 3550; or both ECE 2250 and ECE 2700.

Semester(s) Traditionally Offered: Fall

MAE 5530 - Space System Design
3 credits

Students in teams perform a space system design involving all aspects, including technical, cost, and schedule. Class is linked to national design competitions and/or current USU spacecraft design projects.

Prerequisite/Restriction: ECE 5230 or MAE 5520.

Cross-listed as: ECE 5240.

Semester(s) Traditionally Offered: Spring

MAE 5540 - Propulsion Systems
3 credits

Fundamentals of rocket and air breathing propulsion, including space flight dynamics, nozzle theory, combustion processes, and flight performance. Rocket propulsion systems, including solid, liquid, hybrid, and combined cycles. Air breathing propulsion systems, including ramjet, scramjet, turbojet, and turbofan engine concepts.

Prerequisite/Restriction: MAE 5420 or consent of instructor.

Semester(s) Traditionally Offered: Spring

MAE 5560 - Dynamics of Space Flight
3 credits

Fundamentals of spacecraft dynamics, including Keplerian orbits, orbital position as a function of time,
three-dimensional orbits, orbital determination, orbital maneuvers, satellite attitude dynamics, and rocket vehicle dynamics.

Prerequisite/Restriction: MAE 3320 or permission of instructor.

Semester(s) Traditionally Offered: Fall

MAE 5580 - Aircraft Design
3 credits

Design and optimization of aircraft systems. Students work in teams to design and optimize an aircraft to satisfy specific mission requirements, including mission effectiveness, cost, and scheduling. Class is linked to national design competitions and/or current USU aircraft design projects.

Prerequisite/Restriction: Permission of instructor.

MAE 5600 - Reliability and Quality of Engineering Systems
3 credits

Develops and refines students' knowledge of engineering systems, statistical process control (SPC), and reliability of systems. Introduces principles of quality and reliability. Presents different types of probability and application of the distributions. Discusses applications of reliability and quality data. Introduces different types of testing and screening techniques for qualification and quality assurance. Students learn how to plot reliability distributions.

Prerequisite/Restriction: STAT 3000 and minimum grade of C- in MAE 2650.

MAE 5640 - Design for Manufacturability
3 credits

Product design for economic production. Manufacturing processes (especially primary processes), associated tooling cost and design, and resultant product design requirements.

Prerequisite/Restriction: MAE 2650.

MAE 5650 - Additive Manufacturing Processes
3 credits

Introduction to additive manufacturing processes; including rapid prototyping, direct digital manufacturing, process modeling, and applications.

Prerequisite/Restriction: MAE 2160, MAE 2650, and MAE 3440. MAE 3440 may be taken concurrently.

Semester(s) Traditionally Offered: Spring

MAE 5670 - Fracture Mechanics
3 credits

Covers linear elastic and elastic-plastic fracture mechanics; micro-mechanisms of fracture in metals, polymers, ceramics, composites, and concrete; and failure analysis of engineering. Enrollment limited to students accepted into College of Engineering.

Prerequisite/Restriction: Grade of C- or better in MAE 2160 and grade of D or better in MAE 3040.

Semester(s) Traditionally Offered: Fall

MAE 5900 - Cooperative Practice
3 credits

Introduction to additive manufacturing processes; including rapid prototyping, direct digital manufacturing, process modeling, and applications.

Prerequisite/Restriction: MAE 2160, MAE 2650, and MAE 3440. MAE 3440 may be taken concurrently.

Semester(s) Traditionally Offered: Fall, Spring

MAE 5930 - Special Problems
1-3 credits

Formulation and solution of practical or theoretical problems.

Prerequisite/Restriction: Permission of department head.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
MAE 6010 - Finite Element Methods in Solid Mechanics II  
3 credits

Advanced theory and applications of finite element methods to both static and dynamic solid mechanics problems.

Prerequisite/Restriction: MAE 5020.

Semester(s) Traditionally Offered: Spring

MAE 6040 - Continuum Mechanics and Elasticity  
3 credits

Mechanics of continuous media; tensors, stress, strain, deformation, rate equations, and constitutive equations. Plane stress, plane strain, torsion, and bending theories, as well as problem solutions, investigated for linear elastic materials.

Prerequisite/Restriction: MAE 3040 or CEE 3010; MATH 2210, MATH 2250.

Semester(s) Traditionally Offered: Fall

MAE 6070 - Mechanics of Composite Materials II  
3 credits

Second course in composite materials. Stress-strain states of laminated composite structures, including interlaminar stresses, failure criteria, and hygrothermal stresses.

Prerequisite/Restriction: MAE 5060

Cross-listed as: CEE 6070

Semester(s) Traditionally Offered: Fall

MAE 6080 - Boundary Element Method  
3 credits

Presents introduction to boundary element method to solve fluid and solid mechanics problems.

Prerequisite/Restriction: FORTRAN programming skills, MAE 3040, MAE 5020.

Semester(s) Traditionally Offered: Spring

MAE 6090 - Theory of Plates and Shells  
3 credits

Introduction to plate and shell theories. Development of bending and buckling of plates and shells through classical theory.

Prerequisite/Restriction: MAE 3040 or CEE 3010.

Cross-listed as: CEE 6090.

Semester(s) Traditionally Offered: Fall

MAE 6130 - Structural Dynamics and Seismic Design  
3 credits


Cross-listed as: CEE 6130

Semester(s) Traditionally Offered: Spring

MAE 6180 - Dynamics and Vibrations  
3 credits


Prerequisite/Restriction: MAE 5300 or CEE 6130/MAE 6130.

Cross-listed as: CEE 6180.

Semester(s) Traditionally Offered: Spring

MAE 6320 - Linear Multivariable Control  
3 credits

Modeling, analysis, and design of multi-input, multi-output control systems, including both state space and transfer matrix approaches, with an emphasis on stability.

Prerequisite/Restriction: ECE 5310 or MAE 5310.

Cross-listed as: ECE 6320.

Semester(s) Traditionally Offered: Fall
MAE 6340 - Spacecraft Attitude Control  
3 credits

Spacecraft attitude dynamics and controls. Spin stabilized, three axis, and dual spin modes. Attitude determination techniques.

Prerequisite/Restriction: ECE 5310 or MAE 5310.

Cross-listed as: ECE 6340.

Semester(s) Traditionally Offered: Spring

MAE 6350 - Robotics  
3 credits

Fundamentals of robotic systems, including kinetics, kinematics, sensors, actuators, control algorithms, motion planning, and computer systems. Integration of critical design components to develop complete systems. Robotic manipulator analysis and design. Applications in manufacturing. Mobile rockets, including wheeled, legged, and alternative locomotion robots.

Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.

Cross-listed as: ECE 6350.

Semester(s) Traditionally Offered: Spring

MAE 6410 - Fluid Dynamics  
3 credits

Basic laws of fluid motion, Navier Stokes equations, kinematics of the flow field, fundamental exact solutions of viscous flow, and elements of turbulence.

Prerequisite/Restriction: MAE 3420 or CEE 3500.

Semester(s) Traditionally Offered: Fall

MAE 6420 - Mechanical Engineering Experiments  
3 credits

Topics include experimental design, digital data acquisition, Fourier transforms, uncertainty analysis, writing and presentation, and some specific measurement techniques of interest to mechanical engineers.

Prerequisite/Restriction: MAE 3340.
Prerequisite/Restriction: MAE 3440.

Semester(s) Traditionally Offered: Spring

MAE 6480 - Radiation Heat Transfer
3 credits

Radiation theory and applications. Includes utilization of computer software.

Prerequisite/Restriction: MAE 3440.

Semester(s) Traditionally Offered: Fall

MAE 6490 - Turbulence
3 credits

Fundamentals of turbulent fluid flow, with emphasis on providing student with sufficient physical and mathematical background to critically evaluate current literature and make original research contributions. Topics include stochastic tools, the governing equations, transition to turbulence, isotropic turbulence, measurement techniques, and free and wall bounded turbulent shear flows.

Prerequisite/Restriction: MAE 6410 or permission of instructor.

Semester(s) Traditionally Offered: Spring

MAE 6500 - Potential Flow
3 credits

Inviscid, irrotational fluid flow with emphasis on aircraft analysis and design. Exact solutions with complex variables and conformal mapping; perturbation methods; singularity elements and influence coefficients; lifting-line method; numerical vortex lattice method; numerical panel methods; and software design and development.

Prerequisite/Restriction: MAE 5500.

Semester(s) Traditionally Offered: Fall

MAE 6510 - Aircraft Dynamics and Flight Simulation
3 credits

Aircraft control and maneuverability, control response and transfer functions, nonlinear dynamics with gyroscopic and aerodynamic coupling, Euler angle formulations, direction cosine formulation, quaternion formulation, numerical integration methods, software design and development.

Prerequisite/Restriction: MAE 5510.

Semester(s) Traditionally Offered: Fall

MAE 6530 - Propulsion Systems
3 credits

Fundamentals of turbine and rocket propulsion, including nozzle theory and thermodynamic relations, combustion processes, and flight performance. Rocket propulsion topics, including solid, liquid, and hybrid rocket engines; and advanced engine concepts. Turbine engine propulsion systems, including turbojets, turbofans, afterburners, and advanced unducted fan concepts.

Prerequisite/Restriction: MAE 5420.

Semester(s) Traditionally Offered: Spring

MAE 6540 - Advanced Astrodynamics
3 credits

Advanced topics in astrodynamics to include: general and special perturbations, universal variables, methods of orbit determination, Lambert's theorem, the restricted three-body problem, and space mission planning.

Prerequisite/Restriction: MAE 5560.

Semester(s) Traditionally Offered: Fall

MAE 6550 - Advanced Structural Analysis
3 credits

Explores advanced structures in modern civil, mechanical, and aerospace systems. Emphasizes concepts through problem solving, and fosters an in-depth understanding of the subject. Provides understanding of the fundamental principles to analyze and design advanced structures.

Prerequisite/Restriction: MAE 6040.

Semester(s) Traditionally Offered: Spring

MAE 6560 - Spacecraft Navigation
3 credits

Prerequisite/Restriction: MAE 5310 or ECE 5310 or equivalent.

Cross-listed as: ECE 6560.

Semester(s) Traditionally Offered: Spring

MAE 6570 - Optimal Spacecraft Guidance
3 credits


Prerequisite/Restriction: MATH 2210 and MATH 2250 or equivalents.

Semester(s) Traditionally Offered: Summer

MAE 6600 - Reliability and Quality of Engineering Systems
3 credits

Develops and refines students' knowledge of engineering systems, statistical process control (SPC), and reliability of systems. Introduces principles of quality and reliability. Presents different types of probability and application of the distributions. Discusses applications of reliability and quality data. Introduces different types of testing and screening techniques for qualification and quality assurance. Students learn how to plot reliability distributions.

Prerequisite/Restriction: STAT 3000 and minimum grade of C- in MAE 2650.

Cross-listed as: MAE 5600.

Semester(s) Traditionally Offered: Fall

MAE 6630 - Transport Phenomena in Materials Processing
3 credits

Analysis of various engineering processes through the development of physically-based mathematical models and associated experimental descriptions. Diffusion mass transfer, heat transfer, and fluid flow. Quantitative analysis and simulation of materials processing.

Prerequisite/Restriction: MAE 3420, MAE 3440.

Semester(s) Traditionally Offered: Spring

MAE 6930 - Special Problems
1-3 credits

Independent or group study of engineering problems not covered in regular course offerings.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 6950 - Design Project
3 credits

Individual projects involving the design, development, and/or testing of components, devices, or systems. Formal report required.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 6970 - Thesis Research
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 6990 - Continuing Graduate Advisement
1-12 credits

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 7040 - Elasticity
3 credits

Energy theorems, variational techniques, complex variable solutions, and three-dimensional solutions for linear elastic materials.

Prerequisite/Restriction: MAE 6040 or permission of instructor.
Semester(s) Traditionally Offered: Spring
MAE 7050 - Plasticity
3 credits
Analysis of stresses, deformation, and collapse in devices constructed of plastic material.
Prerequisite/Restriction: MAE 6040 or CEE 6080/CEE 5080 or permission of instructor.
Cross-listed as: CEE 7050.

Semester(s) Traditionally Offered: Spring
MAE 7080 - Advanced Plate and Shell Theory
3 credits
Analysis of plate and shell structures by classical and numerical methods. Emphasis on numerical solutions.
Prerequisite/Restriction: Permission of instructor.
Cross-listed as: CEE 7080.

Semester(s) Traditionally Offered: Fall
MAE 7330 - Nonlinear and Adaptive Control
3 credits
Methods of nonlinear and adaptive control system design and analysis. Includes qualitative and quantitative theories, graphical methods, frequency domain methods, sliding surface design, linear parameter estimation methods, and direct and indirect adaptive control techniques.
Prerequisite/Restriction: ECE 6320/MAE 6320.
Cross-listed as: ECE 7330.

Semester(s) Traditionally Offered: Spring
MAE 7350 - Intelligent Control Systems
3 credits
Intelligent control strategies, including neural network, fuzzy logic, associated memory networks, and rule-based control systems.
Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.

Semester(s) Traditionally Offered: Spring
MAE 7360 - Optimal and Robust Control
3 credits
Advanced methods of control system analysis and design. Operator approaches to optimal control, including LQR, LQG, and L1 optimization techniques. Robust control theory, including QRT, H-infinity, and interval polynomial approaches.
Prerequisite/Restriction: ECE 6320/MAE 6320 or permission of instructor.
Cross-listed as: ECE 7360.

Semester(s) Traditionally Offered: Fall
MAE 7380 - Advanced Dynamics and Vibrations
3 credits
Advanced techniques in dynamics and vibrations.
Prerequisite/Restriction: CEE 6180/MAE 6180.

Semester(s) Traditionally Offered: Fall
MAE 7540 - Advanced Astrodynamics Techniques and Applications
3 credits
Classical perturbation techniques, special perturbation techniques (regularization), and numerical techniques with applications to nonuniformly distributed mass models, third-body problems, cis-lunar trajectories, and orbit maneuver targeting. Other topics include Encke’s method and state-transition/sensitivity matrices. Advanced numerical integration and optimization techniques.
Prerequisite/Restriction: MAE 5560.

Semester(s) Traditionally Offered: Fall
MAE 7560 - Optimal Estimation for Aerospace Systems
3 credits
Probability theory, stochastic system models, optimal
estimation for linear systems, optimal smoothing, and optimal estimation for nonlinear systems. Applications include orbit determination, real-time position, velocity, and attitude determination for rockets, aircraft, and spacecraft.

Prerequisite/Restriction: MAE 5310 or 6320

Semester(s) Traditionally Offered: Summer

MAE 7580 - Advanced Finite Element Analysis in Fluid Mechanics
3 credits

Application of the finite element method of analysis to problems in fluid mechanics. Use of higher order element to two- and three-dimensional flows.

Prerequisite/Restriction: CEE 3510 or MAE 3420, CEE 5020/MAE 5020.

Cross-listed as: CEE 7580.

Semester(s) Traditionally Offered: Spring

MAE 7750 - Distributed Control Systems
3 credits

Design and implementation issues concerning distributed control systems. Real-time processing, distributed stability methods, network techniques and standards, system development and management, smart sensors, and control actuators. Survey of current literature.

Prerequisite/Restriction: ECE 6320/MAE 6320.

Cross-listed as: ECE 7750.

MAE 7930 - Special Problems
1-3 credits

Independent or group study of engineering problems not covered in regular course offerings.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 7970 - Dissertation Research
1-12 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MAE 7990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Medical Laboratory Technician (USU Eastern)

MLT 1010 - Medical Laboratory Techniques
3 credits

Focuses on introducing students to the professional and technical responsibilities of the medical laboratory technician. Topics include laboratory organization, instrumentation, legal and ethical issues, certification and licensure, communication and computational skills, and quality control. In addition, technical areas of laboratory science (hematology, immunology and serology, urinalysis, clinical chemistry, clinical microbiology and parasitology) will be explore in a laboratory setting. Basic instruction in phlebotomy, specimen collection and processing, and laboratory instrumentation will also be part of the course.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2230 - Clinical Laboratory Practices
2 credits

Discusses the science, theory, and ethics of common laboratory practices. Focuses on the theory and application of a proper sample collection, preparation, and identification of simple bodily fluids obtained by invasive and noninvasive procedures. Also discusses the overall demeanor of the work environment and the student.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only
MLT 2240 - Hematology
4 credits
Discusses the anatomy, physiology, and pathology of the circulatory system with a specific course of instruction in form, function, and identification of blood cells. Major emphasis in the course is teaching the theory and application of a proper sample collection, preparation, and identification of the formed elements of the human blood.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2270 - Immunology/Serology
3 credits
Provides an introduction to the study of the immune system, the nature of immune responses and its application to clinical laboratory testing, health and disease. Students will learn the functions of the immune system, immune response, principles of antigen-antibody reactions as well as the principles of serological procedures.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2280 - Immunohematology
4 credits
Lecture and laboratory will focus on an introduction to the immunological aspect of the circulation system including the theory behind patient compatibility. This will include, but not limited to, blood grouping, Rh typing, compatibility testing, donor screening, and quality assurance issues.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2430 - Clinical Chemistry I
3 credits
Covers the theory and performance of the basic concepts of Clinical Chemistry laboratory procedures. Analysis of body fluids (blood, urine, and spinal fluid) for electrolytes, carbohydrates, pH, bilirubin, protein, non-protein nitrogen, and enzymes will be performed in the laboratory. Reasons for increased or decreased levels of these chemicals will be discussed in relation to diseases such as diabetes, jaundice, nephritis, muscular dystrophy, cardiovascular disorders, and others. Use of laboratory instrumentation, quality control, and interpretation and presentation of results will be taught.

Prerequisite/Restriction: Successful completion (C or better grade) of courses included in the first year of the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2450 - Clinical Chemistry II
3 credits
Continuation of MLT 2430, Clinical Chemistry I, and will cover the theory and practice of Clinical Chemistry with a special emphasis on endocrinology, therapeutic drug monitoring, and toxicology. Additional topics will include vitamin analysis, tumor markers, pancreatic and gastrointestinal function, hemoglobin and myoglobin analysis, porphyrins and porphyrias, quality control and laboratory instrumentation.

Prerequisite/Restriction: Successful completion (C or better grade) in MLT 2430 or permission of instructor.

Campus: USU Eastern only

MLT 2550 - Practicum in Medical Technology
3 credits
Supervised practicum within the clinical setting. Provides laboratory practice in hematology urinalysis, microbiology, serology, clinical chemistry, and immunohematology. Emphasis is placed on clinical skills and performance in areas such as specimen preparation and examination, instrumentation, reporting of results, management of data, quality control, recovery, isolation, culturing and identifying microorganisms, detection and identification of antibodies, the typing of blood, compatibility testing of blood and blood components, computerized instrumentation and the ability to recognize technical problems. Upon completion, students should be able to organize tasks and to perform various basic laboratory analyses with accuracy and precision and to be prepared to enter the work force.
Campus: USU Eastern only

MLT 2570 - Clinical Microbiology I
3 credits

Introduces instruction in theory practical application and pathogenesis of clinical microbiology. Covers the collection, setup, identification, susceptibility testing, and reporting procedures. Laboratory exercises will include emphasis on the identification of clinically significant microorganisms. Students will participate in Standard Microbiological testing including the culture, staining and antibiotic testing of various organisms.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Campus: USU Eastern only

MLT 2580 - Clinical Microbiology II
2 credits

Focuses on knowledge necessary to perform medical laboratory technician's duties. Instruction will include the theory, practical application and pathogenesis of clinical microbiology. Procedures including collection, set-up, identification and reporting procedures will be used throughout the course. Pathogenic microorganisms will be studied in relationship to disease. Includes examination of viral agents, medical mycology and parasitology. Routine medical microbiological procedures will be examined.

Prerequisite/Restriction: Admission to the MLT program or permission of instructor.

Military Science Leadership

MSL 1010 - Leadership and Personal Development
2 credits

Presents students with personal challenges and competencies that are critical for effective leadership. Students learn how personal development of life skills, such as goal setting, time management, physical fitness, and stress management, relate to leadership, officership, and the Army profession. Focuses on developing basic knowledge of Army Leadership Dimensions, while gaining a big-picture understanding of the ROTC program, its purpose in the Army, and its advantages for students.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 1015 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 1020 - Foundations in Leadership
2 credits

Overview of leadership fundamentals, such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Explores dimensions of leadership values, attributes, skills, and actions in context of practical, hands-on, and interactive exercises. Promotes building of stronger relationships among cadets through common experiences and practical interaction.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 1025 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 2010 - Innovative Tactical Leadership
2 credits

Explores dimensions of creative and innovative tactical leadership strategies and styles by studying historical case studies and engaging in interactive student exercises. Students practice aspects of personal
motivation and team building. Focuses on continued development of knowledge of leadership values and attributes through understanding of rank, uniform, customs, and courtesies. Leadership case studies provide tangible context for learning the Soldier’s Creed and Warrior Ethos.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MSL 2015 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 2020 - Leadership in Changing Environments
2 credits

Examines challenges of leading in complex contemporary operational environments. Highlights dimensions of cross-cultural challenges as applied to practical Army leadership tasks and situations. As they practice communication and team-building skills, students should develop greater self-awareness.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MSL 2025 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 2110 - Foundations of Leadership (BSS)
BSS Breadth Social Sciences
3 credits

Considers functional and dysfunctional behavior in leadership roles. Focuses on ethical/moral, historical, and social influences. Examines outlook, styles, skills, and behavior essential for providing successful leadership.

Semester(s) Traditionally Offered: Fall, Spring

MSL 2400 - Physical Readiness
1 credit

Physical conditioning course employing U.S. Army principles of fitness. Subjects include: body composition, nutrition, cardiorespiratory fitness, muscle endurance and strength, circuit training, and drills.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 2420 - Ranger Preparation
2 credits

Participation in Army ROTC Ranger Challenge program. Advanced military training with practical application of skills taught in MSL 1010 and MSL 4020.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MSL 2430 - Air Assault
2 credits

Two-week course conducted at an Army installation in the continental U.S. Provides students with training in helicopter operations, including sling loading and rappelling.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Summer

MSL 2440 - Airborne Operations
2 credits

Three-week course conducted at Fort Benning, Georgia. Provides students with training in military skydiving techniques with practical applications.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Summer

MSL 2510 - Leader’s Training Course
1-6 credits
Four-week training held at Fort Knox, Kentucky. Combines intense classroom learning with hands-on field training. This course is an accelerated version of the two years of leadership development training cadets receive in the Basic Course. Students completing this course qualify for enrollment in the Advanced Course.

Prerequisite/Restriction: Passing score on APFT exam and instructor’s approval.

Semester(s) Traditionally Offered: Fall, Spring

MSL 3010 - Adaptive Team Leadership
3 credits

Cadets study, practice, and evaluate leadership skills as they are presented with the demands of the ROTC Leader Development Assessment Course (LDAC). Challenging scenarios related to small-unit tactical operations are used to develop self-awareness and critical thinking skills. Cadets receive systematic and specific feedback on their leadership abilities. Cadets begin to analyze and evaluate their own leadership values, attributes, skills, and actions. Primary attention given to preparation for LDAC.

Semester(s) Traditionally Offered: Fall, Spring

MSL 3015 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 3020 - Leadership Under Fire
3 credits

Cadets experience increasingly intense situational leadership challenges. Skills in decision-making, persuading, and motivating team members when “under fire” are explored, evaluated, and developed. Aspects of military operations are reviewed as a means of preparing for LDAC. Cadets are expected to apply basic principles of the Law of Land Warfare, Army training, and motivation to troop leading procedures. Emphasizes conducting military briefings and developing proficiency in Garrison operations orders.

MSL 3025 - Military Science Leadership Lab
1 credit

Semester(s) Traditionally Offered: Fall, Spring

MSL 3110 - Staff Organization and Operations
1-3 credits

Special project staff work for joint Army/Air Force campus ceremonies, leadership labs, field training exercises, and training camps.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 3210 - Independent Study
1-3 credits

Students select advanced topics of interest and arrange credit under program advisor supervision in areas related to military science.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 4010 - Developing Adaptive Leaders
3 credits

Cadets develop proficiency in planning, executing, and assessing complex operations; functioning as a member of a staff; and in providing leadership-performance feedback to subordinates. They analyze, evaluate, coach, and instruct less-experienced cadets. Both their classroom and battalion leadership experiences are designed to prepare them for their first unit of assignment. Cadets identify responsibilities of key staff, coordinate staff roles, and use situational opportunities
to teach, train, and develop subordinates.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4015 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4020 - Leadership in a Complex World
3 credits

Explores dynamics of leading in complex situations of current military operations. Examines customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Significant emphasis placed on preparing cadets for their first unit of assignment. Case studies, scenarios, and “What Now, Lieutenant?” exercises used to prepare cadets to face complex ethical and practical demands of leading as commissioned officers in the United States Army.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4025 - Military Science Leadership Lab
1 credit

Enhances self-confidence, teamwork, and leadership. Allows prospective officers to practice essential leadership skills and receive feedback on their performances. In order to continue with aspects taught in the classroom, students participate in this lab for three hours per week.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4110 - Advanced Staff Operations
1-3 credits

Special project staff work for joint Army/Air Force campus ceremonies, leadership labs, field training exercises, and training camps. Students in this course provide mentoring and guidance to students in MSL 3110.

Prerequisite/Restriction: Successful completion of basic course requirements and Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4400 - Advanced Physical Readiness
1 credit

Provides advanced instruction in physical fitness employing Army techniques and procedures. Students assist Military Science faculty in the planning/conduct of physical fitness training activities performed by lower-division students.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MSL 4510 - ROTC Leader Development and Assessment Course
1-10 credits

The most important training event for an Army ROTC cadet, this 33-day training event incorporates a wide range of subjects designed to develop and evaluate leadership ability. The challenges are rigorous and demanding, both mentally and physically. Warrior Forge tests intelligence, common sense, ingenuity, and stamina. These challenges provide a new perspective on an individual’s ability to perform exacting tasks and make difficult decisions in demanding situations.

Prerequisite/Restriction: Successful completion of basic course requirements and Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MSL 4520 - Cadet Troop Leadership Training
2 credits

Two-week course conducted at an Army installation in the continental U.S. or overseas. Provides firsthand experience in an Army unit. Students learn about military life and the duties of a lieutenant.

Prerequisite/Restriction: MSL 3010, MSL 3020, MSL 4510, and Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer
MSL 4610 - Military History Seminar (DHA)
DHA Depth Humanities and Creative Arts
1-3 credits

In this class, students research, travel to, and report on significant Civil War sites in the Eastern United States. Students also become familiar with joint operations. Class is available to all students. Purchase of airfare and some meals is required.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MINT 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

Museum Studies

MUSM 1010 - Introduction to Museums
3 credits

Students are introduced to museums and the role museums play in society. Historical and theoretical framework for museums science will be established and museums will be placed in a global perspective. Students will become familiar with the broad-based implications of museum work as a science.

Campus: USU Eastern only

MUSM 1020 - Museum Administration
3 credits

Instruction in aspects of museum management and administration, including policies and procedures, personnel management, budget formulation, governance, and interaction with support organizations.

Campus: USU Eastern only

MUSM 1030 - Museum Collection Management and Ethics
3 credits

Course defines the role of museum collections and focuses on general museum concepts, procedures, and issues related to the management and care of collections. In addressing ethical considerations and legal obligations of museum collections and management, attention is given to international concerns as well as to state and national issues.

Prerequisite/Restriction: Previous or current museum experience or coursework helpful.

Campus: USU Eastern only
MUSM 2010 - Museum Exhibitions I 3 credits
Designed to give students a background in the early aspects of exhibition preparation, this course will emphasize exhibit planning, research and writing.
Prerequisite/Restriction: Previous or current museum experience or coursework helpful.
Campus: USU Eastern only

MUSM 2011 - Museum Exhibitions II 3 credits
Designed as a continuation of MUSM 2010. Emphasizes writing and preparing exhibit labels, fabrication of the exhibit, and exhibit evaluation.
Prerequisite/Restriction: MUSM 2010 or permission of instructor.
Campus: USU Eastern only

MUSM 2020 - Museum Preventative Conservation 3 credits
Introduction to the current methods and theories pertaining to museum collections care, with an emphasis on handling, storing, and exhibiting collections as safely as possible. Low cost ideas will be shared.
Prerequisite/Restriction: Previous or current museum experience or coursework helpful.
Campus: USU Eastern only

MUSM 2090 - Museum Practicum 3 credits
Designed to meet the needs of individual students or museums. Involves individualized instruction under the supervision of faculty (or museum administrators at other locations) utilizing hands-on experiences in museum administration, collections, education, and exhibitions. It may be done at a student's local museum with approved supervision. A project or paper is required for completion of the course.
Prerequisite/Restriction: Permission of instructor
Campus: USU Eastern only

MUSM 2977 - Cooperative Education 1-3 credits
Provides supervised on-the-job training in museum studies. Student meet with the instructor/coordinator periodically to determine and evaluate learning objectives, hours to be worked, and credit.
Prerequisite/Restriction: Permission of instructor
Campus: USU Eastern only

MUSM 2988 - Independent Studies 1-3 credits
Individual work approved by instructor. Time and credit to be arranged.
Prerequisite/Restriction: Permission of instructor
Campus: USU Eastern only

MUSM 2999 - Workshop 1-3 credits
Designed to meet the changing needs of the student in Museum Studies.
Prerequisite/Restriction: Permission of instructor
Campus: USU Eastern only

MUSM 3310 - Introduction to Museum Studies (CI) CI Communications Intensive 3 credits
Explores all aspects of museum work, from the acquisition and storage of collections to fundraising and educational programs. As part of the course requirements, students tour area museums and get first-hand perspectives on the challenges and rewards of museum work from professionals in the field. Course fee for field trip(s) required.
Cross-listed as: ANTH 3310
Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring
Music
MUSC 1010 - Introduction to Music (BCA)
BCA Breadth Creative Arts
3 credits

Nontechnical course to develop understanding and enjoyment of music. Through study of musical elements, as well as historical, cultural, and social influences, an awareness of the relationship between techniques and aesthetic values in world music can be developed.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1100 - Fundamentals of Music (BCA)
BCA Breadth Creative Arts
3 credits

In-depth look at the basic elements of music. Notes, rhythm, scales, intervals, key signatures, chords, cadences, and chord progressions. Includes basic ear training.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 1110 - Music Theory I
3 credits


Prerequisite/Restriction: Pre-music major or music major and permission of instructor

Semester(s) Traditionally Offered: Fall

MUSC 1120 - Music Theory II
3 credits

Traditional harmony in four parts, using nonchord tones, seventh chords, and secondary dominant functions.

Prerequisite/Restriction: MUSC 1110.

Semester(s) Traditionally Offered: Spring

MUSC 1130 - Aural Skills I
1 credit

First in a four-semester sequence of aural skills (ear training) courses which develop the skills of sight singing, dictation, and the composite skill of critical listening.

Prerequisite/Restriction: Completion of MUSC 1170 with a C- or better, or faculty authorization.

MUSC 1140 - Aural Skills II
1 credit

Second in a four-semester sequence of aural skills (ear training) courses which develop the skills of sight singing, dictation, and the composite skill of critical listening.

Prerequisite/Restriction: MUSC 1130.

Semester(s) Traditionally Offered: Spring

MUSC 1150 - Beginning Group Piano
1 credit

Group piano instruction for nonmusic majors.

Semester(s) Traditionally Offered: Spring

MUSC 1160 - Intermediate Group Piano
1 credit

Group piano instruction for nonmusic majors.

Semester(s) Traditionally Offered: Spring

MUSC 1170 - Keyboard Harmony I
1 credit

Development of keyboard skills, in conjunction with MUSC 1110, for music majors and minors.

Prerequisite/Restriction: Pre-music major or music major and permission of instructor

Semester(s) Traditionally Offered: Fall

MUSC 1180 - Keyboard Harmony II
1 credit

Development of keyboard skills, in conjunction with MUSC 1120, for music majors and minors.

Prerequisite/Restriction: Completion of MUSC 1170 with a C- or better, or faculty authorization.
MUSC 1200 - Teaching Piano I
3 credits

Shows pianist how to set up an independent studio, acquire and set up equipment, schedule students, set fees, bill parents, and keep the books. Students learn how to write a studio policy and how to audition and interview prospective students. Survey of different methods and piano series affords opportunity for students to evaluate teaching materials. Includes teaching of basic music concepts to beginning piano students.

MUSC 1220 - Individual Harp Instruction for Nonmusic Majors
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private harp instruction at any and all stages of advancement.

Repeatable for credit.

MUSC 1310 - Introduction to Music Therapy
2 credits

Introduces students to the field of music therapy through lectures, readings, and experiential work.

Prerequisite/Restriction: Enrollment in a pre-music major.

MUSC 1320 - Music Therapy Ensemble
1 credit

Intended for music therapy majors. Designed to help students increase their performance skills in the areas of accompanying, improvisation, and popular music styles.

Repeatable for credit.

MUSC 1420 - Pedagogy Practicum
3 credits

Provides piano students with actual teaching situations for the practical application of principles studied in piano pedagogy. Supervised planning, presentation, and evaluation of lessons.

Repeatable for credit.

MUSC 1430 - Piano Pedagogy I
3 credits

Designed to prepare qualified pianists to teach piano effectively and to acquaint them with new materials and techniques from the beginning to intermediate levels.

MUSC 1440 - Piano Pedagogy II
3 credits

Designed to prepare qualified pianists to teach piano effectively and to acquaint them with new materials and techniques from the intermediate to early advanced levels.

MUSC 1460 - Organ Literature I (CI)
CI Communications Intensive
3 credits

Examines the history of the organ, as well as composers and literature from the Romantic Period through the end of the Twentieth Century.

MUSC 1470 - Organ Literature II (CI)
CI Communications Intensive
3 credits

Examines the history of the organ, as well as composers and literature from the Middle Ages through the Baroque Period.

MUSC 1480 - Individual Piano Instruction for Nonmusic Majors
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private piano instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1490 - Individual Organ Instruction for Nonmusic Majors  
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private organ instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1500 - String Techniques I  
1 credit

Designed to give prospective music teachers a basic playing experience and theoretical understanding of the string instruments.  

Semester(s) Traditionally Offered: Fall, Spring

MUSC 1520 - Individual Viola Instruction for Nonmusic Majors  
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private viola instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1530 - Individual Violin Instruction for Nonmusic Majors  
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private violin instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1540 - Individual String Bass Instruction for Nonmusic Majors  
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private string bass instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1550 - Beginning Group Guitar  
1 credit

Fundamentals of guitar; basic chords, note reading, tablature reading, and accompaniment styles, including strumming and fingerpicking.  

Semester(s) Traditionally Offered: Fall, Spring

MUSC 1560 - Intermediate Group Guitar  
1 credit

Intermediate-level strumming and fingerpicking techniques, barre chords, and solos written in standard notation and tablature will be presented.  

Semester(s) Traditionally Offered: Fall, Spring

MUSC 1580 - Individual Guitar Instruction for Nonmusic Majors  
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private guitar instruction at any and all stages of advancement.

Repeatable for credit.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1600 - Voice Techniques  
1 credit

Acquaints the nonvocal major with the vocal instrument; its mechanism, terminology, and techniques.  

Semester(s) Traditionally Offered: Fall, Spring
MUSC 1610 - Introduction to Musical Theatre
2 credits
Survey course dealing with history, evolution, influence, practice, and production of the American Musical Theatre.
Semester(s) Traditionally Offered: Spring

MUSC 1620 - Introduction to Opera
2 credits
Survey course tracing history and style of opera from Peri and Caccini’s “Euridice” of 1594 to contemporary works of John Eaton and Phillip Glass.
Semester(s) Traditionally Offered: Fall

MUSC 1630 - Individual Vocal Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private vocal instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1640 - Individual Saxophone Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private saxophone instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1700 - Individual Flute Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private flute instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1710 - Individual Oboe Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private oboe instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

MUSC 1720 - Individual Clarinet Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private clarinet instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1730 - Individual Bassoon Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private bassoon instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1740 - Individual Saxophone Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private saxophone instruction at any and all stages of advancement.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1800 - Percussion Techniques
1 credit
Provides basic playing experience and theoretical understanding of percussion instruments. Designed for music majors.

MUSC 1810 - Individual Trumpet Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private trumpet instruction at any and all stages of advancement.
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private trumpet instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1820 - Individual Trombone Instruction for Nonmusic Majors
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private trombone instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1830 - Individual French Horn Instruction for Nonmusic Majors
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private French horn instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1840 - Individual Tuba/Euphonium Instruction for Nonmusic Majors
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private tuba/euphonium instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 1850 - Individual Percussion Instruction for Nonmusic Majors
1-2 credits

Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private percussion instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2110 - Music Theory III
3 credits

Traditional chromatic harmony in four parts, using modulation, mode mixture, and neapolitan and augmented sixth chords.

Prerequisite/Restriction: MUSC 1110 and MUSC 1120.

Semester(s) Traditionally Offered: Fall

MUSC 2120 - Music Theory IV
3 credits

Study of Twentieth Century tonal, atonal, and avant guarde harmonies and compositional techniques.

Prerequisite/Restriction: MUSC 3110 and MUSC 3120.

Semester(s) Traditionally Offered: Spring

MUSC 2130 - Aural Skills III
1 credit

Third in a four-semester sequence of aural skills (ear training) courses which develop the skills of sight singing, dictation, and the composite skill of critical listening.

Prerequisite/Restriction: MUSC 1130 and MUSC 1140.

Semester(s) Traditionally Offered: Fall

MUSC 2140 - Aural Skills IV
1 credit

Fourth in a four-semester sequence of aural skills (ear training) courses which develop the skills of sight singing, dictation, and the composite skill of critical listening.

Prerequisite/Restriction: MUSC 1130, MUSC 1140, and MUSC 2130.

Semester(s) Traditionally Offered: Spring

MUSC 2210 - Instrumental Conducting Ensemble
1 credit
Lab group for MUSC 4240. Music and nonmusic majors play major and secondary instruments in two concerts per semester.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

MUSC 2220 - Individual Harp Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private harp instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2310 - Introduction to Observational and Behavioral Methods in Music Therapy
2 credits

Basic behavioral terminology and methods, including systematic observations and recording methods for use in music therapy. Students conduct observations in clinical settings in the community.

Semester(s) Traditionally Offered: Fall

MUSC 2320 - Music Therapy Methods and Materials
2 credits

Music interventions and techniques appropriate for a wide range of patient populations, including hospitalized children, older adults, and individuals with orthopedic handicaps.

Prerequisite/Restriction: MUSC 1310 and MUSC 2310.

Semester(s) Traditionally Offered: Spring

MUSC 2350 - Conducting
2 credits

Designed to provide students with basic conducting techniques.

Prerequisite/Restriction: MUSC 2110 and must be a premusic or music major.

Semester(s) Traditionally Offered: Fall

MUSC 2420 - Individual Organ Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private organ instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2420 - Piano Literature I
3 credits

Acquaints pianists with the standard piano composers and keyboard literature from the 14th Century to the Classical Period.

Semester(s) Traditionally Offered: Fall

MUSC 2430 - Piano Literature II
3 credits

Acquaints pianists with the standard piano composers and keyboard literature from the Classical Period to the Romantic Period.

Semester(s) Traditionally Offered: Spring

MUSC 2440 - Piano Literature III
3 credits

Acquaints pianists with the standard piano composers and keyboard literature from the Romantic Period to Impressionism.

Semester(s) Traditionally Offered: Fall

MUSC 2450 - Piano Literature IV
3 credits

Acquaints pianists with the standard piano composers and keyboard literature from the Impressionist Period to
Semester(s) Traditionally Offered: Spring
MUSC 2460 - Individual Jazz Piano Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private jazz piano instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2470 - Individual Jazz Piano Instruction (Second Instrument) for Music Majors
1 credit
Designed to give music majors private jazz piano instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2490 - Individual Piano Instruction (Second Instrument) for Music Majors
1 credit
Designed to give music majors private piano instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2500 - Individual String Bass Instruction (Second Instrument) for Music Majors
1 credit
Designed to give music majors private string bass instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2510 - Individual Cello Instruction for Nonmusic Majors
1-2 credits
Variable credit offered, depending upon lesson time (1 credit equals 30 minutes). Designed to give nonmusic majors private cello instruction at any and all stages of advancement.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2520 - Individual Cello Instruction (Second Instrument) for Music Majors
1 credit
Designed to give music majors private cello instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2530 - Individual Viola Instruction (Second Instrument) for Music Majors
1 credit
Designed to give music majors private viola instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2540 - Individual Violin Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private violin instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2550 - Guitar Styles: Blues
2 credits

Designed to teach students to play blues guitar styles. Presentation of musical form and repertoire.
Prerequisite: Knowledge of basic chords and some standard notation and/or tablature.

Semester(s) Traditionally Offered: Fall

MUSC 2560 - Guitar Styles: Bluegrass/Folk
2 credits

Designed to teach students to play bluegrass and folk guitar styles. Presentation of musical form and repertoire. Prerequisite: Knowledge of basic chords and some experience reading standard notation and/or tablature.

Semester(s) Traditionally Offered: Fall

MUSC 2570 - Fingerboard Theory I
2 credits

Basic music theory course in which students use the guitar as a tool for learning the fundamentals of music.

Semester(s) Traditionally Offered: Fall

MUSC 2580 - Fingerboard Theory II
2 credits

Follow-up to MUSC 2570. Examination of theoretical concepts of music and how they can be visualized and played on the guitar.

Semester(s) Traditionally Offered: Spring

MUSC 2590 - Individual Guitar Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private guitar instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2600 - Women's Choir
1 credit

Performance of choral works in a large choral organization open to all women without auditions.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 2610 - American Festival Chorus
1 credit

Large select mixed choir performing major works for chorus and orchestra.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 2640 - Individual Vocal Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private vocal instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2660 - Italian Diction for Singers
2 credits
Study of singing diction in Italian using International Phonetic Alphabet in spoken, sung, and written drills.

Semester(s) Traditionally Offered: Spring
MUSC 2670 - German Diction for Singers
2 credits

Study of singing diction in German using International Phonetic Alphabet in spoken, sung, and written drills.

Semester(s) Traditionally Offered: Fall
MUSC 2680 - French Diction for Singers
2 credits

Study of singing diction in French using International Phonetic Alphabet in spoken, sung, and written drills.

Semester(s) Traditionally Offered: Spring
MUSC 2690 - Concert Choir
1 credit

Concert Choir is a general choral class for singers of all interests and levels. Provides concerts for the college at large. Most students stay in the choir for the entire year. No audition is required.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
MUSC 2700 - Woodwind Techniques I: Flute, Clarinet
1 credit

Provides music education major with an introduction to performance and pedagogy of the flute and clarinet.

Prerequisite/Restriction: Enrollment limited to majors, or with permission of instructor.

Semester(s) Traditionally Offered: Fall
MUSC 2710 - Woodwind Techniques II: Saxophone, Oboe, Bassoon
1 credit

Provides music education major with an introduction to performance and pedagogy for the saxophone, oboe, and bassoon. Enrollment limited to majors or with permission of instructor.

Prerequisite/Restriction: MUSC 2700.

Semester(s) Traditionally Offered: Spring
MUSC 2720 - Marching Band
2 credits

Preparation of musical entertainment and marching drills for football games.

Prerequisite/Restriction: Consent of director.

Repeatable for credit
Semester(s) Traditionally Offered: Fall
MUSC 2730 - Basketball Band
1 credit

Preparation of “pops” type music for basketball games. Audition necessary.

Prerequisite/Restriction: MUSC 2720.

Repeatable for credit
Semester(s) Traditionally Offered: Spring
MUSC 2745 - Wind Symphony
1 credit

Wind Symphony provides experiences for woodwind, brass and percussion players in a concert band setting. Repertoire includes literature representing many traditional and contemporary styles. Performances are presented in various college and community venues.

Prerequisite/Restriction: Audition.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring
MUSC 2750 - Individual Flute Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private flute instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy
MUSC 2760 - Individual Oboe Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private oboe instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2770 - Individual Clarinet Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private clarinet instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2780 - Individual Bassoon Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private bassoon instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2790 - Individual Saxophone Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private saxophone instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2800 - Brass Techniques I: Trumpet, French Horn
1 credit

Designed to give prospective music teachers a basic playing experience and theoretical understanding of the high brass instruments.

Semester(s) Traditionally Offered: Fall

MUSC 2810 - Brass Techniques II: Trombone, Tuba, Euphonium
1 credit

Designed to give prospective music teachers a basic playing experience and theoretical understanding of the low brass instruments.

Semester(s) Traditionally Offered: Spring

MUSC 2850 - Individual Trumpet Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private trumpet instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
MUSC 2860 - Individual Trombone Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private trombone instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2870 - Individual French Horn Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private French horn instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2880 - Individual Tuba/Euphonium Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private tuba/euphonium instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2890 - Individual Percussion Instruction (Second Instrument) for Music Majors
1 credit

Designed to give music majors private percussion instruction at any and all stages of advancement. One credit given for 30-minute lessons.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in music. Students meet with the instructor/coordinator periodically to determine and evaluate learning objectives, hours to be worked, and credit.

Prerequisite/Restriction: Permission of instructor.

MUSC 2988 - Special Problems
1-3 credits

Independent study work for the serious musician to be approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

MUSC 3010 - Masterpieces of Music (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Acquaints students with great masterpieces of music representing all periods of music history. Examines lives and times of various composers.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3020 - History of Jazz (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Designed to give students an understanding of the development of jazz, popular music, and contemporary idioms, and their contributions to music and culture.

Semester(s) Traditionally Offered: Spring

MUSC 3100 - Motivation and Classroom Management Strategies in Secondary Classroom Music
3 credits

Provides experience in current materials, methods, and management of general music education program in
secondary (grades 6-12) public schools. Designed for
music education majors.

Semester(s) Traditionally Offered: Spring

MUSC 3110 - Music History I: Origins through Baroque
3 credits

History and literature of early, Renaissance, and Baroque
periods.

Prerequisite/Restriction: Enrollment limited to music
majors having sophomore standing or higher.

Semester(s) Traditionally Offered: Spring

MUSC 3120 - Music History II: Classical and Romantic
Periods
3 credits

History and literature of the music of the classical and
romantic periods.

Prerequisite/Restriction: MUSC 3110 and MUSC 3140.

Semester(s) Traditionally Offered: Fall

MUSC 3140 - Musical Form and Analysis
3 credits

Study of imitative, cantus firmus, ostinato, and free
contrapuntal procedures of Western music. Explores
techniques of Sixteenth Century counterpoint. Also
includes study of phrase and period structure, small part
fonts, theme and variations, rondo and sonata forms, and
vocal forms.

Prerequisite/Restriction: MUSC 2110.

Semester(s) Traditionally Offered: Spring

MUSC 3160 - World Music
2 credits

Explores music traditions of non-Western cultures
throughout the world.

Prerequisite/Restriction: MUSC 2110.

Semester(s) Traditionally Offered: Spring

MUSC 3180 - Scoring and Arranging
2 credits

Theoretical and practical study of scoring for orchestral
instruments in various combinations, ranging from small
ensembles to full orchestra.

Prerequisite/Restriction: MUSC 2140 or MUSC 3900 or
permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3190 - Music History III: Music of the Twentieth
Century (CI)
CI Communications Intensive
3 credits

Explores historical and cultural context of important
composers and works of the modern and postmodern
eras, including the influence of non-Western musical
traditions.

Prerequisite/Restriction: MUSC 3110 and MUSC 3120.

Semester(s) Traditionally Offered: Spring

MUSC 3210 - Individual Harp Instruction for Music
Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for
music majors only. Number of credits granted depends
upon practice time and extent of literature required.
Designed to give music majors private harp instruction at
any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major,
music major, music education major, or music therapy
major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3220 - Choral Methods and Materials
2 credits

Investigates factors relating to administration and
teaching of choral music in middle and secondary
schools.
MUSC 3230 - Choral Literature
2 credits
Survey of choral music from the Renaissance, Baroque, Classical, Romantic, and Twentieth Century suitable for middle and secondary school choirs.

Semester(s) Traditionally Offered: Spring

MUSC 3240 - Instrumental Methods and Materials
2 credits
Examination of teaching methods and materials related to wind and percussion pedagogy. Study of literature, organization and administration, and teaching techniques.

Semester(s) Traditionally Offered: Spring

MUSC 3260 - Elementary School Music
2 credits
Methods and materials in singing, rhythms, creating music, listening, using classroom instruments, fundamentals of music, and movement skills, with emphasis on contemporary approaches to music education.

Prerequisite/Restriction: Enrollment limited to students who have earned at least 45 credits and who have been accepted into one of the following majors: Pre-music, music education, music therapy, pre-early childhood education, pre-elementary education, early childhood education, special education, composite early childhood education/special education, composite early childhood education/elementary education, communicative disorders and deaf education, composite early childhood education/deaf education, elementary education, composite elementary education/special education, composite elementary education/early childhood education, or composite elementary education/deaf education. MUSC 1010 (Recommended).

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3310 - Music Therapy and the Exceptional Child
3 credits
Effects of music on physical, social, cognitive, and communication skills of children with disabilities.

Semester(s) Traditionally Offered: Fall

MUSC 3320 - Psychology of Music I
2 credits
Psychological foundations of musical behavior, including psychoacoustics, rhythmic, melodic, and harmonic foundations; affective behaviors and music; musical preferences; functional music; musical ability; and music learning.

Semester(s) Traditionally Offered: Spring

MUSC 3330 - Music Therapy Practicum
1-3 credits
Supervised practicum experience in a community setting with disabled adults, children, older adults, or individuals in a medical setting.

Prerequisite/Restriction: MUSC 2320.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3360 - MIDI Studio Techniques
2 credits
Elements of synthesizer sound production and basic studio techniques.

Semester(s) Traditionally Offered: Spring

MUSC 3370 - Sound Recording and Reinforcement Techniques
2 credits
Explores techniques of studio recording, including microphones, mixing, and signal processing.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

MUSC 3400 - Individual Piano Instruction for Music Majors
1-2 credits
Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private piano instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major,
music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3410 - Ensemble and Accompanying
1-2 credits

Accompanying vocal and instrumental works. Ensemble music for two pianos and four hands. Sight reading and repertoire development.

Prerequisite/Restriction: Admission by audition only, with 16 students per section.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3420 - Keyboard Skills I
3 credits

Study of sightreading, transposing, improvising, figured bass, scales, chords, and score rendering.

Semester(s) Traditionally Offered: Fall

MUSC 3430 - Keyboard Skills II
3 credits

Continuation of MUSC 3420, with further study of sightreading, transposing, improvising, figured bass, scales, chords, and score reading.

Semester(s) Traditionally Offered: Spring

MUSC 3440 - Individual Jazz Piano Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private jazz piano instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3460 - Church Music for Organists I
3 credits

Teaches students to read open scores, transpose hymns, and read scores using alto and tenor clefs. Explores history of hymnody, as well as history of church worship services.

Semester(s) Traditionally Offered: Fall

MUSC 3470 - Church Music for Organists II
3 credits

Teaches students to read open scores, transpose hymns, and read scores using alto and tenor clefs. Explores history of hymnody, as well as history of church worship services.

Semester(s) Traditionally Offered: Spring

MUSC 3480 - Individual Organ Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits. Number of credits granted depends upon practice time and extent of literature required. Flexible course of study leading to enhanced musical and technical skills on the instrument.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3500 - Symphony Orchestra (DHA)
DHA Depth Humanities and Creative Arts
1 credit

Provides experience in performing standard orchestral literature.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3510 - Orchestra Literature
2 credits
Survey of materials, methods, and literature appropriate for elementary school, junior high/middle school, or high school level orchestra programs.

Semester(s) Traditionally Offered: Spring

MUSC 3520 - String Pedagogy and Solo Literature
2 credits

For qualified string players whose interest is primarily in teaching stringed instruments. Materials and teaching techniques via actual teaching experience.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

MUSC 3530 - Cache Symphony Orchestra
1 credit

Provides experience for nonmusic majors in performing standard orchestral literature.

Prerequisite/Restriction: Permission of instructor

Repeatable for credit.

MUSC 3540 - Guitar Performance Practicum
1 credit

On a weekly basis, students required to perform for other class members. Repertoire selected in consultation with the instructor. Community performances also required.

Repeatable for credit.

MUSC 3550 - Individual Guitar Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private guitar instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3560 - Guitar History and Literature
3 credits

Development of guitar from its earliest ancestors to the present, including study of composers of music for guitar, guitarists, and changes to the instrument itself.

Semester(s) Traditionally Offered: Fall

MUSC 3570 - Guitar Pedagogy I
2 credits

Preparing qualified guitarists to teach beginning and intermediate level students. Familiarizes participants with "business" aspects of teaching, how to set up a private studio, available materials, and teaching techniques.

Semester(s) Traditionally Offered: Fall

MUSC 3580 - Guitar Pedagogy II
2 credits

Instruction in teaching various guitar styles. Experience in teaching class guitar and in private instruction. Review of available methods and materials.

Semester(s) Traditionally Offered: Spring

MUSC 3590 - Electric Guitar Ensemble
1 credit

Offers opportunity for guitarists to rehearse and perform ensemble music written for electric guitar. Ensemble includes bass and drums.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3600 - Opera Theatre Production
1-3 credits

Techniques of musical theater, including participation as cast or crew in musical or operatic stage productions or excerpts.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
MUSC 3610 - Vocal Repertory I
2 credits
Survey of German Lieder and French Melodie, including styles, history, and performance practice.
Semester(s) Traditionally Offered: Fall

MUSC 3620 - Vocal Repertory II (CI)
CI Communications Intensive
2 credits
Survey of Italian, American, and British song, including styles, history, and performance practice.
Semester(s) Traditionally Offered: Spring

MUSC 3630 - Vocal Pedagogy I
2 credits
Theoretical course studying anatomy and function of the voice, methods for teaching techniques, respiration, phonation, articulation, and support and health of the voice.
Semester(s) Traditionally Offered: Fall

MUSC 3640 - Vocal Pedagogy II
2 credits
Application of vocal theory to teaching of young, post-pubescent, and mature male and female voices, including challenges of teaching each particular type. Includes practicum in which students teach individual vocal lessons under instructor’s supervision.
Semester(s) Traditionally Offered: Spring

MUSC 3660 - Opera by Children
3 credits
Creative process of developing opera in a classroom for fine-arts and language-arts core instruction. Instruction in opera history, music, drama, art and dance elements, and necessary facilitation skills to build on individual’s natural curiosity and creativity utilized in the process.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3670 - Individual Vocal Instruction for Music Majors
1-2 credits
Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private vocal instruction at any and all stages of advancement.
Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3700 - Woodwind Ensemble
1-2 credits
Helps students gain knowledge and understanding of literature for woodwind ensemble, to gain knowledge of rehearsal techniques for perfecting chamber music, and to demonstrate mastery of these skills through performance.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3710 - Individual Flute Instruction for Music Majors
1-2 credits
Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private flute instruction at any and all stages of advancement.
Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3720 - Individual Oboe Instruction for Music Majors
1-2 credits
Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required.
Designed to give music majors private oboe instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3730 - Individual Clarinet Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private clarinet instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3740 - Individual Bassoon Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private bassoon instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3750 - Individual Saxophone Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private saxophone instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3760 - Jazz Ensemble
1 credit

Select ensemble performing big band jazz music.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3770 - Jazz Orchestra
1 credit

Preparation and performance of big band jazz music.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3780 - Flute Ensemble
1 credit

Helps students gain knowledge and understanding of flute ensemble, to gain knowledge of rehearsal techniques for perfecting chamber music, and to demonstrate mastery of these skills through performance.

Prerequisite/Restriction: Enrollment limited to music majors and music therapy majors only.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall

MUSC 3790 - Symphonic Band (DHA)
1 credit

Performance of significant works from symphonic band repertoire.

Prerequisite/Restriction: Admission by audition or
Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3800 - Trombone Ensemble
1 credit

Intended for trombone majors and nonmajors interested in performing music specifically written and/or arranged for four to twelve trombones.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3810 - Individual Trumpet Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private trumpet instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3820 - Individual Trombone Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private trombone instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3830 - Individual French Horn Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private French horn instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3840 - Individual Tuba/Euphonium Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private tuba/euphonium instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3850 - Brass Ensemble
1 credit

Helps students gain knowledge and understanding of brass ensemble, gain knowledge of rehearsal techniques for perfecting chamber music, and demonstrate mastery of these skills through performance.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3860 - Individual Percussion Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private percussion instruction at any and all stages of advancement.

Prerequisite/Restriction: Permission of instructor.
Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 3870 - Percussion Ensemble
1 credit

Provides opportunity for percussionists to perform select percussion literature in a chamber music setting.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 3900 - Jazz Improvisation
2 credits

Study of techniques of jazz improvisation applicable to all instruments.

Prerequisite/Restriction: MUSC 2110 and MUSC 2130; or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3910 - Individual Composition Instruction
1-12 credits

Individual study of techniques and procedures of music composition, emphasizing assistance in completing individual compositional projects, building composition portfolio, and preparing for composition recitals.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 3920 - Marching Band Techniques
2 credits

Reviews methods and materials necessary for directing high school marching bands, including administration, music selection, drill design, and computer-assisted instruction.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall

MUSC 3930 - Band Literature
2 credits

Study of literature appropriate for beginning, intermediate, and advanced level band programs.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall

MUSC 3950 - Jazz Choir
1 credit

Emphasizes vocal ability, harmonic ear training, and rhythmic understanding. Ability to vocally improvise is helpful, though not a necessary prerequisite. Auditions held during the first week of fall semester.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 4210 - Advanced Music Form and Analysis
3 credits

Expands the contents and helps further develop the skills acquired in MUSC 3140, Musical Form and Analysis. Large and small sectional forms and contrapuntal procedures are further explored in works from the Classical, Romantic, and Modern eras.

Semester(s) Traditionally Offered: Fall

MUSC 4240 - Advanced Conducting
2 credits

Covers techniques, procedures, materials, and philosophies appropriate to the motor skill of conducting and the pedagogy of rehearsal techniques with a band/choir/string ensemble. Students will be able to demonstrate techniques in music selection, score analysis, conducting gesture, and pedagogy. (F—in instrumental) (Sp—Choral).

Semester(s) Traditionally Offered: Fall - instrumental, Spring - choral

MUSC 4310 - Music Therapy with Adult Populations
3 credits
Music therapy methods for adults with major mental illness. Overview of DSM-IV criteria. Psychotherapy models, including cognitive-behavioral and person-centered approaches to treatment.

Semester(s) Traditionally Offered: Fall

MUSC 4320 - Psychology of Music II (CI)
CI Communications Intensive
2 credits

Research and laboratory course, emphasizing design, methods, and statistical procedures appropriate to research in music education and music therapy.

Prerequisite/Restriction: STAT 1040 and permission of instructor.

Semester(s) Traditionally Offered: Spring

MUSC 4330 - Clinical and Professional Issues in Music Therapy
3 credits

Ethical considerations and issues related to private practice, marketing, and reimbursement, as well as continued exploration of psychotherapeutic models and MT methods with adults, specifically anxiety disorders and personality disorders.

Prerequisite/Restriction: MUSC 4310 and MUSC 4320.

Semester(s) Traditionally Offered: Spring

MUSC 4340 - Internship in Music Therapy
2 credits

Six-month resident internship in affiliated, approved clinical setting.

Prerequisite/Restriction: Successful completion of senior year in music therapy.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4410 - Advanced Piano Pedagogy I
1-2 credits

Continuation of MUSC 1430 and MUSC 1440, with analysis, performance, and teaching of basic repertoire at intermediate to advanced levels.

Prerequisite/Restriction: MUSC 1430, MUSC 1440.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

MUSC 4420 - Advanced Piano Pedagogy II
1-2 credits

Continuation of MUSC 4410, with analysis, performance, and teaching of basic repertoire at intermediate to advanced levels.

Prerequisite/Restriction: MUSC 4410.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

MUSC 4500 - String Ensemble
1 credit

Offers opportunity for capable string players to study and perform music written for variety of small ensemble combinations.

Prerequisite/Restriction: Enrollment in music or pre-music major, or special permission of instructor for nonmajors.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 4510 - Individual Violin Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private violin instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4520 - Individual Viola Instruction for Music Majors
1-2 credits

Repeatable for credit.
Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private viola instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4530 - Individual Cello Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private cello instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4540 - Individual String Bass Instruction for Music Majors
1-2 credits

Provides 60-minute lessons, for either 1 or 2 credits, for music majors only. Number of credits granted depends upon practice time and extent of literature required. Designed to give music majors private string bass instruction at any and all stages of advancement.

Prerequisite/Restriction: Must be a pre-music major, music major, music education major, or music therapy major.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4550 - Acoustic Guitar Ensemble
1 credit

Offers opportunity for guitarists to rehearse and perform intermediate and advanced music written for acoustic guitar.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring

MUSC 4600 - University Chorale (DHA)
DHA Depth Humanities and Creative Arts
1 credit

Select mixed choir performing a wide range of choral literature.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring

MUSC 4620 - Choral Conducting Practicum
1 credit

Application of principles of choral music education in public school setting.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring

MUSC 4650 - Chamber Singers (DHA)
DHA Depth Humanities and Creative Arts
1 credit

Select small ensemble performing a wide range of choral literature.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring

MUSC 4700 - Wind Orchestra (DHA)
DHA Depth Humanities and Creative Arts
1 credit

Highly-selective group, performing important traditional and contemporary works from the wind band repertoire.

Prerequisite/Restriction: Admission by audition only.

Repeatable for credit.
 Semester(s) Traditionally Offered: Fall, Spring
MUSC 4710 - Jazz Combo
1-2 credits
Study and performance of the finest literature for the small jazz ensemble.
Prerequisite/Restriction: Audition and permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 4720 - Saxophone Quartet
1-2 credits
Study and performance of the finest classical, jazz, and popular music for the saxophone quartet.
Prerequisite/Restriction: Audition and permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 4730 - Directed Project in Instrumental Pedagogy (CI)
CI Communications Intensive
2 credits
Acquaints students with curricular and business issues of private music teaching. Through written assignments, reviews of literature, and interviews with professionals, students develop strategies for setting up, marketing, and maintaining a private studio.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4900 - Baroque Counterpoint
2 credits
Writing and analysis of tonal counterpoint in two, three, and four parts.
Prerequisite/Restriction: MUSC 1110, MUSC 1120, MUSC 2110, MUSC 3140.
Semester(s) Traditionally Offered: Fall

MUSC 4910 - Music Composition
2 credits
Instruction in principles of music composition, and guidance in completing individual composition projects. Also, analysis of selected Twentieth Century masterworks.
Prerequisite/Restriction: MUSC 1110, MUSC 1120, MUSC 2110, MUSC 3140.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring

MUSC 4920 - Individual Recital
1-6 credits
Performance of pieces selected by the student and approved by the instructor, for performance in accordance with specific music area requirements.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4930 - Readings and Conference
1-6 credits
Undergraduate course designed to provide special interest study.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 4940 - Senior Thesis
1-6 credits
As partial fulfillment of Honors Program requirements, students design and complete a major paper/project. Examples of projects include performance, composition, and musical analysis.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 5420 - Piano Literature I
2 credits
Provides comprehensive examination of piano literature, the history of the instrument, and performance practice.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 5980 - Introduction to Music Research
3 credits

Acquaints graduate students with music research, information science, and technical writing. Topics addressed include print and electronic resources, historical editions, manuscripts and holographs, period recordings, performance practice resources, writing styles, and bibliographic resources.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6100 - Graduate Performance Ensemble
1-2 credits

Designed to give students opportunity for a high-level music experience in choral and instrumental performance ensembles.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6110 - Advanced Conducting
2 credits

Students master manual technique of conducting and improve score study procedures, resulting in analysis and communication of musical ideas.

Semester(s) Traditionally Offered: Fall, Summer

MUSC 6120 - Advanced Rehearsal Techniques
2 credits

Provides students with conducting experience within their major performance areas; i.e., chorale, band, orchestra. This is accomplished through observation of rehearsal techniques and procedures, and by conducting rehearsals at the instructor's discretion.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6130 - Music History Seminar
3 credits

Close study and discussion of a special topic in music history, emphasizing individual research and presentation. Since content differs each semester, course may be repeated for credit.

Prerequisite/Restriction: MUSC 5980.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6140 - Music Theory Seminar
3 credits

Close study and discussion of a special topic in music theory, emphasizing individual analysis and presentation. Since content differs each semester, course may be repeated for credit.

Prerequisite/Restriction: MUSC 5980.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6410 - Collaborative Artistry
2 credits

Helps graduate pianists to develop the skills needed for vocal and instrumental accompaniment. Addresses techniques in score analysis, transposition, ensemble skills, etc. Students receive coaching from piano, voice, and instrumental faculty.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6420 - Pedagogy Practicum
2 credits

Observation of master instructors, practice teaching (private and classroom), and supervised studio instruction.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6430 - Advanced Piano Pedagogy
2 credits

Pedagogy of beginning, intermediate, and advanced methods of teaching piano, as well as strategies for developing a private studio.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6440 - Piano Literature II
2 credits
Provides comprehensive examination of piano literature, the history of the instrument, and performance practice.

Semester(s) Traditionally Offered: Fall, Spring

MUSC 6610 - Practicum in Choral Performance
1-4 credits

Provides the graduate student with insight into advanced choral techniques and methods of preparing choirs for performance by rehearsing one of the University choirs on assigned choral selections while being critiqued by the ensemble director.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 6620 - Seminar in Choral Literature
2 credits

Designed to study and internalize principal forms of choral music through discussion of historical evolution and stylistic characteristics of the periods of music. Embraces significant choral functions of every style period.

Semester(s) Traditionally Offered: Spring, Summer

MUSC 6630 - Individual Instruction for Graduates
1-2 credits

Includes 60-minute lessons for either 1 or 2 credits. Number of credits granted depends upon practice time and extent of literature required. Designed to give graduate students private instruction at any and all stages of advancement.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

MUSC 6900 - Independent Study
1-6 credits

Advanced course designed to meet specific problems of the music educator and the applied music specialist.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 6910 - Individual Recital
1-3 credits

Preparation and presentation of graduate recital, under supervision of major professor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

MUSC 6970 - Research and Thesis
2-6 credits

Individual work in thesis writing with guidance and criticism.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

National Environmental Policy Act

NEPA 6200 - How to Manage the NEPA Process and Write Effective NEPA Documents
2 credits

Introduction to National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations. Explores various levels of NEPA documentation and the skills necessary to identify the actions needed for a thorough environmental analysis.

NEPA 6210 - Clear Writing for NEPA Specialists
2 credits

Teaches how to identify the writing and editing requirements unique to NEPA documents, including making graphics, writing chapters, and reviewing documents for accuracy.

NEPA 6220 - Reviewing NEPA Documents
2 credits

Focuses on how to review the full range of NEPA documents, including Environmental Impact Statements (EISs), Environmental Assessments (EAs), Findings of No Significant Impacts (FONSIs), and Records of Decisions.

NEPA 6230 - Risk Communication for NEPA Specialists: Strategies and Implementation
2 credits

Explains meaning and application of risk communication. Explores full range of response communication, including
development of a communication plan and strategy, standing before an audience, and responding to comments in writing.

NEPA 6260 - Cultural and Natural Resource Management 2 credits

Identifies stewardship responsibilities included in major cultural and natural resource laws and regulations, including the Endangered Species Act and National Historic Preservation Act. Surveys cultural and natural resource legal compliance steps, and reviews how to integrate compliance into the agency mission.

NEPA 6270 - Environmental Compliance Overview 1 credit

Explores why environmental compliance is not only desirable and necessary, but is also a personal responsibility. Identifies key laws and regulations, with associated penalties affecting environmental compliance.

NEPA 6280 - Interdisciplinary Team Building 1 credit

Teaches general principles of interdisciplinary team building. Explores how information flows and how this can impact the success of a team. Students work as a team to apply the principles learned to scenarios of day-to-day actions.

NEPA 6300 - Effective Environmental Contracting 1 credit

Presents a systematic approach to the writing and reviewing of environmental Statements of Works (SOWs). Providing hands-on experience, course includes case studies and examples applying to actual environmental projects.

NEPA 6310 - NEPA Writing for Technical Specialists 1 credit

Designed to teach students how to use a "document management process" to become more efficient writers of NEPA documents.

NEPA 6320 - NEPA: Cumulative Impacts 1 credit

Explores scoping and public involvement strategies leading to sound cumulative impact analysis. Students assess various impact methodologies and learn to record cumulative impact information in ways that support clear, legally sufficient EAs/EISs.

NEPA 6330 - Conflict Management in the NEPA Process 1 credit

Trains students in NEPA conflict negotiation and management. Includes introduction to the nature of public conflict and management styles, along with environmental negotiation techniques.

NEPA 6350 - Socio-economic Impact Analysis for NEPA Specialists 1 credit

Provides students with necessary tools (templates, checklists, and materials) and knowledge (including data analysis) for conducting an effective socio-economic impact analysis, as required by NEPA and CEQ regulations.

NEPA 6360 - Overview of the Endangered Species Act 1 credit


NEPA 6370 - NEPA Capstone Experience 1 credit

opportunities available at the time and preferences of the student. Helps USU to certify that students receiving the certificate have basic mastery of the material presented in the program coursework.

NEPA 6380 - NEPA Process Management 1 credit

Focuses on teaching students to be effective team leaders by understanding how to control the process of project and plan development. Introduces students to various models on time management, project management, team management, and decision-making methods. Students also learn how to frame problems in such a way that they can more clearly identify alternative solutions and develop cause-and-effect models showing how their actions impact resources.

NEPA 6390 - NEPA Climate Change Analysis 1 credit

Introduction to climate change in the NEPA analysis
process. Discussion of science of climate change and impacts in regard to greenhouse gas emissions. Takes into account the effects of climate change on projects, as well as the resources that projects may impact. Students learn to use various methods for analyzing impacts and are exposed to several case studies and court decisions. Also includes guidance on preparation of legally adequate climate change analysis documents.

Natural Resources

NR 1010 - Humans and the Changing Global Environment (BSS)
BSS Breadth Social Sciences
3 credits

Introduction to historical nature and extent of human environmental transformation at global and regional levels. Examination of how socio-economic, political, and scientific factors influence past and current perceptions, use and conservation of natural environments in Western and other cultures, and future options available. For availability, check with the College of Natural Resources Dean's Office.

NR 2220 - General Ecology
3 credits

Study of the interrelationships among organisms, humans, and their environments, addressing where and how organisms live. Adaptation, population growth, species interactions, biodiversity, and ecosystem function are explored for a wide variety of organisms and ecosystems.

Prerequisite/Restriction: BIOL 1610 and BIOL 1620
Cross-listed as: BIOL 2220

Semester(s) Traditionally Offered: Fall, Spring

NR 6450 - Natural Resource and Environmental Policy Presentation
1 credit

In their last year of graduate school, certificate candidates make a presentation on policy dimensions of thesis or dissertation, as part of this student seminar series. Students receive one semester credit for this presentation. For availability, check with the College of Natural Resources Dean's Office.

NR 6510 - Biophysical and Human Dimensions of Ecosystems
4 credits

Intensive two-week course introducing key biophysical and socio-economic concepts through exploration of important concepts central to ecosystem management. Examines how ecosystem management differs from traditional approaches to the management of natural resources.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NR 6520 - Dimensions of Ecosystems and Social Systems
4 credits

Two-week course examining specific processes of landscape development. Establishes the relationship of landscape structure to vegetation and watersheds. Scale and pattern of ecosystems and classification studied at several scales.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NR 6530 - Integrated Inventory, Analysis, and Assessment of Ecosystems
4 credits

Course participants develop techniques and skills for assessing the biophysical and socio-political environment. Participants gain an understanding of measurement, predicting future conditions, and decision-making techniques in ecosystem management.

Course participants develop techniques and skills for assessing the biophysical and socio-political environment. Participants gain an understanding of measurement, predicting future conditions, and decision-making techniques in ecosystem management.
NR 6535 - Leadership for Natural Resources Professionals
2 credits

Online course for students pursuing the professional Master of Natural Resources (MNR) degree. Primary objective is to develop knowledge of leadership techniques in the context of natural resources management through readings, discussions, and position papers.

Semester(s) Traditionally Offered: Fall

NR 6540 - Ecosystem Management Implementation
4 credits

Participants develop an integrated ecosystem assessment of a landscape unit in a capstone exercise. Assessment conducted with an interdisciplinary team during a two-week period in the field.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall

NR 6550 - Intensive Silviculture
3 credits

Topics for this two-week comprehensive course in silviculture include: stand development and density management; growth and yield; silvicultural systems and reproduction methods; economic evaluation of systems; and relationships between practices and forest health, harvest systems, and forest soils.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NR 6560 - Fire and Fuels Management
4 credits

Two-week course evaluating fire and fuels management programs, which incorporate realistically projected changes in vegetation, fuels, and fire behavior over time. Participants inventory fuels and vegetation, predict fire behavior, and predict change in vegetation structure.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NR 6600 - Natural Resources Integrative Experience
1-6 credits

Under the direction of the student's supervisory committee, student completes an integrative capstone experience in his or her specialty. During their program of study, students not allowed to take this course for more than 6 credits.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Navajo

NAV 1010 - Beginning Navajo for Native Speakers
3 credits

Designed to introduce the native Navajo speakers to the written orthography of the Navajo language. Emphasis will be on developing reading and writing skills.

Prerequisite/Restriction: Native Navajo speaker

Campus: USU Eastern only

NAV 1030 - Beginning Navajo for Non-Native Speakers
3 credits

Designed to help students achieve basic functional communication skills in the Navajo language. These skills include vocabulary, listening comprehension, pronunciation, reading, writing, and cultural awareness.

Campus: USU Eastern only

NAV 2010 - Intermediate Navajo for Native Speakers
3 credits

Continuation of NAV 1010. Students will continue developing their reading and writing skills. Students are expected to have a fundamental knowledge of vocabulary and Navajo orthography.

Prerequisite/Restriction: NAV 1010

Campus: USU Eastern only

NAV 2030 - Intermediate Navajo for Non-Native Speakers
3 credits

Continuation of NAV 1030. Students will continue to
develop speaking fluency, listening comprehension, reading, and writing skills, comprehension, pronunciation, reading, writing, and cultural awareness.

Prerequisite/Restriction: NAV 1030

Campus: USU Eastern only

NAV 2070 - Navajo Literacy for Native Speakers
3 credits
Assists the Native Navajo speaker in building communication skills of reading, writing, and speaking the Navajo language. Special emphasis will be given to utilizing the computer in desktop publishing, personal historical, cultural, and educational materials.

Prerequisite/Restriction: Native Navajo speaker

Campus: USU Eastern only

NAV 2080 - Advanced Navajo for Native Speakers
3 credits
Assists the Native speaker of Navajo in building advanced writing skills. Emphasis will be given to developing curriculum materials to be used in the public school classroom setting. Curriculum and writing assignments will be done on the computer.

Prerequisite/Restriction: Native Navajo speaker and NAV 2070

Campus: USU Eastern only

NAV 2988 - Special Problems
1-3 credits
An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Navajo culture will also be emphasized. Significant reading and work outside of class are required.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

NAV 3040 - Navajo Literacy and Grammar for Native Speakers
3 credits
Designed to develop advanced skills in the grammar, comprehension, reading, and writing of Navajo. Integrates Diné holistic teaching concepts in accordance with the “Hózhóogo liná” four-direction Diné philosophy of learning paradigm.

Prerequisite/Restriction: Permission of instructor

Semester(s) Traditionally Offered: Spring

NAV 3050 - Navajo Descriptive and Narrative Writing
3 credits
Presents reading and writing in the genres of Navajo narration and description. Prepares students to take the Navajo Language Proficiency Exam, and integrates holistic teachings in accordance with the “Hózhóogo liná” four-direction Diné philosophy of learning paradigm.

Prerequisite/Restriction: Permission of instructor

Semester(s) Traditionally Offered: Fall

NAV 4400 - Teaching Navajo as a Second Language
3 credits
Addresses major issues in the teaching/learning of second languages, with emphasis on Navajo as taught in the public schools. Integrates Diné holistic teaching concepts in accordance with the “Hózhóogo liná” four-direction Diné philosophy of learning paradigm.

Prerequisite/Restriction: Permission of instructor

Semester(s) Traditionally Offered: Spring

NAV 4410 - Teaching Navajo to Native Speakers
3 credits
Addresses major issues and methods in teaching Navajo literacy and Navajo language arts to native speakers of Navajo. Integrates Diné holistic teaching concepts in accordance with the “Hózhóogo liná” four-direction Diné philosophy of learning paradigm.

Prerequisite/Restriction: Permission of instructor

Semester(s) Traditionally Offered: Fall

Nursing (USU Eastern)
NURS 1000 - Nursing Assistant
4 credits

This course is offered to the student who is interested in preparing for work in a long term facility as a nursing assistant. It meets federal and state requirements and allows the student to apply and test for certification as a Utah Certified Assistant. It is separate from the nursing program. Serves as an elective.

Campus: USU Eastern only
Semester(s) Traditionally Offered:

NURS 1005 - Basic Life Support for Health Care Providers
1 credit

Prepares health care givers with the knowledge to implement life support measures in a variety of health care settings. Student may obtain Level C certification through the American Heart Association. Serves as an elective.

Campus: USU Eastern only

NURS 1008 - Medical Terminology
2 credits

Provides students with the building blocks of basic medical language. Such understanding will facilitate learning of scientific and medical principles encountered during more advanced career preparation. Relationship of word parts to their anatomical counterparts will be studied. Rules for combining word parts into complete medical terms will be stressed. Accurate pronunciation and spelling of word parts and complete terms will be emphasized throughout the course.

Campus: USU Eastern only

NURS 1010 - Introduction to Nursing
2 credits

This course presents an introduction into nursing practice. It includes nursing student responsibilities, holistic care of self and clients, study skills, nursing history, spiritual and cultural needs of clients, medical terminology, ethical and legal responsibilities, and the health care delivery system. Therapeutic communication techniques and basic elements of nursing process will be introduced. Developmental needs of the older adult are explored.

Prerequisite/Restriction: Acceptance into the Practical Nursing Program

Campus: USU Eastern only
Semester(s) Traditionally Offered: Summer

NURS 1015 - Introduction to Health Care I
1 credit

Introduction into the health care professions. Includes orientation to the health care occupations, personal care management and study habits, medical terminology, history of health care, ethical and legal responsibilities, cultural aspects, health care systems, and roles and issues of health care. Therapeutic communication techniques and basic elements of nursing process will be introduced. Special concerns related to caring for pediatric and geriatric clients will be explored.

Campus: USU Eastern only

NURS 1016 - Introduction to Health Care II
3 credits

During the second semester specific health care occupations will be explored. Professionals from many fields will introduce the students to the educational and licensure requirements, job opportunities, and other issues related to specific professions. Students will spend approximately 2/3 of the second semester in job shadowing experiences. Evaluations of the experiences by both the student and the professional will be included in the student’s grade.

Prerequisite/Restriction: NURS 1015

Campus: USU Eastern only

NURS 1020 - Fundamental Concepts of Nursing
5 credits

This course lays the foundation for the development of nursing knowledge, skills, and professional attitudes fundamental to nursing practice. Students are introduced to the basic application of the nursing process. Nursing assessment focuses on identifying human needs and grouping supporting data into NANDA domains. The fundamentals of mental health nursing are also explored.

Prerequisite/Restriction: BIOL 2320, FCHD 1500, NURS 1010, PSY 1010
Corequisite: NURS 1030, NURS 1110 and BIOL 2420

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 1030 - Fundamental Concepts of Nursing Clinical
4 credits

Nursing laboratory and clinical experiences allow the nursing student opportunities to practice the concepts and principles learned in NURS 1020. Clinical experiences include long-term care, acute care in a medical/surgical unit at a hospital, and community care in local clinics/physician offices. Successful completion of all laboratory, theoretical, and clinical components are required to receive credit for the course.

Prerequisite/Restriction: BIOL 2320, NURS 1010, FCHD 1500, PSY 1010

Corequisite: BIOL 2420, NURS 1110, NURS 1020

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 1110 - Pharmacology
3 credits

This course explores the theoretical principles that apply to the administration of medications. Emphasis is placed on competence in the administration of medications, assessment of therapeutic and adverse effects, and nursing interventions which will maximize the desired outcome of drug therapy.

Prerequisite/Restriction: BIOL 2320, FCHD 1500, NURS 1010, PSY 1010

Corequisite: NURS 1020, NURS 1030 and BIOL 2420

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 1115 - Pharmacology Lab
1 credit

This elective course provides additional activities and resources to support the theoretical principles regarding the administration of medications. The instructor leads the discussion of pharmacological concepts. In addition, the student uses self-study and web-based activities to examine pre-test results, develop a study plan, and complete a post-test that supports course outcomes.

Corequisite: NURS 1110

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 1120 - Family Nursing I
1 credit

This course applies the concepts and skills of nursing care for the family (mother, father and newborn) before, during, and after childbirth. Increased awareness of assessment and interventions for clients are integrated through the use of the nursing process. Nursing care related to male and female reproductive systems is included.

Prerequisite/Restriction: BIOL 2320, BIOL 2420, FCHD 1500, NURS 1010, NURS 1020, NURS 1030, NURS 1110, PSY 1010

Corequisite: NURS 1130, NURS 1220, NURS 1230, NURS 1240 and BIOL 2060

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

NURS 1130 - Family Nursing I Clinical
1 credit

Service Learning
This clinical experience guides the student in the application of the concepts and skills of NURS 1120.

Prerequisite/Restriction: NURS 1010, NURS 1020, NURS 1030, NURS 1110, BIOL 2320, BIOL 2420, PSY 1010, FCHD 1500

Corequisite: NURS 1120, NURS 1220, NURS 1230, NURS 1240 and BIOL 2060

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 1220 - Nursing Process I
3 credits

This course explores the theoretical concepts necessary for the care of clients with common health problems. Basic human needs and pathophysiology are explored.
and appropriate nursing care is determined. A greater understanding of the nursing process and NANDA nursing diagnoses are utilized to direct the care of clients across the lifespan. This course builds upon previous knowledge and integrates concepts from support courses.

**Prerequisite/Restriction:** NURS 1010, NURS 1020, NURS 1030, NURS 1110, BIOL 2320, BIOL 2420, PSY 1010, FCHD 1500

**Corequisite:** NURS 1120, NURS 1130, NURS 1230, NURS 1240, BIOL 2060

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Spring

**NURS 1230 - Nursing Process I Clinical**

4 credits

This clinical experience provides the nursing student with opportunities to actively participate in planning and implementing nursing care for clients in multiple health care settings. Emphasis is placed on application of theoretical concepts presented in NURS 1220.

**Prerequisite/Restriction:** NURS 1010, NURS 1020, NURS 1030, NURS 1110, BIOL 2320, BIOL 2420, PSY 1010, FCHD 1500

**Corequisite:** NURS 1120, NURS 1130, NURS 1230, NURS 1240, BIOL 2060

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Spring

**NURS 1240 - Practical Nursing Practice**

1 credit

This course is designed to prepare the student for the role of the practical nurse. It includes information on preparing and studying for the NCLEX-PN exam, licensing requirements, applying for a job, issues and trends in practical nursing, professional organizations, and opportunities in nursing.

**Prerequisite/Restriction:** NURS 1020, NURS 1030, NURS 1110, BIOL 2320, BIOL 2420, PSY 1010, FCHD 1500

**Corequisite:** NURS 1120, NURS 1130, NURS 1220, NURS 1230, BIOL 2060

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Spring

**NURS 2010 - Transition to AD Nursing**

2 credits

This course transitions to the roles of the Associate Degree nurse. Content includes self-study and nursing laboratory activities that enable the student to demonstrate competency in the following areas: nursing process, communication skills, pharmacodynamics, pharmacological math, selected nursing procedures, evidence-based practice, community-based nursing care, and the NANDA domains of Life Principles and Growth/Development. IV therapy introduced.

**Prerequisite/Restriction:** Acceptance into the Associate Degree Nursing program.

**Corequisite:** CHEM 1110, CHEM 1115, MATH 1030

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Summer

**NURS 2020 - Nursing Process II**

4 credits

This course is designed to develop more in-depth knowledge and enables the student to provide care at the ADN level. Content focuses on critical thinking and problem solving skills, assessing human responses, establishing nursing diagnoses, and determining priorities for the implementation and evaluation of holistic nursing care, as well as functioning as a member of the interdisciplinary team. NANDA domains focus include: Health Promotion, Comfort, Activity/Rest, Safety/Protection.

**Prerequisite/Restriction:** CHEM 1110, CHEM 1115, MATH 1030, NURS 2010

**Corequisite:** NURS 2030 and NURS 2120

**Campus:** USU Eastern only

**Semester(s) Traditionally Offered:** Fall

**NURS 2030 - Nursing Process II Clinical**

4 credits

Service Learning

This clinical experience allows the AD nursing student to
integrate theoretical knowledge with clinical application. The student is expected to demonstrate increased application of nursing care, and increased proficiency in the use of the nursing process. Clinical experiences include participation in acute care settings and community health care agencies.

Prerequisite/Restriction: NURS 2010, MATH 1030, CHEM 1110, CHEM 1115

Corequisite: NURS 2020 and NURS 2120

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 2120 - Family Nursing II
1 credit

This course is designed to address nursing care needs of the new family during the child birthing process. It builds upon theoretical concepts and skills of previous coursework. Family needs are addressed through the use of critical thinking and problem solving which address the holistic needs of the mother, father, and the newborn. The NANDA domains of Sexuality and Role Relationships provide the basis for nursing concepts, but other domains are included as appropriate.

Prerequisite/Restriction: CHEM 1110, CHEM 1115, MATH 1030, NURS 2010

Corequisite: NURS 2020 and NURS 2030

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall

NURS 2220 - Manager of Care
5 credits

This theoretical course is the culmination of all prior nursing and support courses. It builds upon theoretical concepts and skills to meet holistic needs of clients. Concepts include the associate degree nursing role of provider care, manager of care, client educator, and member of the interdisciplinary team. While all NANDA domains are explored, specific units provide a focus on the Nutrition, Elimination, Perception/Cognition, Self-Perception and Coping/Stress Tolerance domains.

Prerequisite/Restriction: NURS 2010, NURS 2020, NURS 2030, NURS 2120, MATH 1030, CHEM 1110 and CHEM 1115

Corequisite: NURS 2230

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

NURS 2230 - Manager of Care Clinical
5 credits

Service Learning
This clinical experience is designed to integrate the theoretical concepts learned throughout the program, and to apply this knowledge during the direct care of clients. Critical thinking and problem solving skills are used during the nursing role performances of provider of care, client educator, manager of care, and member of the interdisciplinary team. Clinical experiences include hospitals and community settings.

Prerequisite/Restriction: CHEM 1110, CHEM 1115, MATH 1030, NURS 2010, NURS 2020, NURS 2030, NURS 2120

Corequisite: NURS 2220

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

NURS 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job experience for students in most aspects of nursing, record keeping and laboratory procedures. Students establish learning objectives, hours to be worked, and a credit agreement with the faculty/coordinator at the beginning of the semester. Students then meet with the faculty/coordinator to review progress.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

NURS 2988 - Special Problems
1-3 credits

Individual or group work project relevant to nursing knowledge base arranged between a nursing faculty member and the student. Students establish learning objectives and goals, and a credit agreement with the faculty/coordinator at the beginning of the semester.
Students then meet periodically with the faculty/coordinator to review progress.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

Nutrition, Dietetics, and Food Sciences

NDFS 1000 - Food Science from Farm to Fork
1 credit

Explores the science and technology of food, including careers, disciplines, food commodities, food product development, and the future of food science.

Prerequisite/Restriction: Enrollment limited to freshman (up to 30 credits) and sophomores (up to 60 credits)

Semester(s) Traditionally Offered: Fall

NDFS 1020 - Science and Application of Human Nutrition (BLS)
BLS Breadth Life Sciences
3 credits

Role of dietary choices in providing nutrients and their relationship to the social, mental, and physical well-being of people. How to evaluate nutritional status with personal data using computer diet analysis program.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 1050 - Food Safety Manager Certification
0.5 credit

Covers food safety information required by the Utah Food Safety Manager Certification Act. Includes role of food handlers in controlling food-borne disease, time-temperature, employee hygiene, sanitation methods, preventing contamination from time of purchase to time of serving, food service facilities/equipment, and HACCP.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 1240 - Food Literacy
3 credits

Challenges students to take reasoned and justified action in the home, community, and world related to food from the ground up.

Prerequisite/Restriction: Enrollment limited to Nutrition and Food Sciences majors, Family and Consumer Sciences majors, and Family and Consumer Sciences Education majors only.

Repeatable for credit

Semester(s) Traditionally Offered: Fall

NDFS 1250 - Sanitation and Safety
3 credits

Principles of sanitation and safety applied to food operations. Emphasizes personal hygiene habits and food handling practices that protect the health and safety of employees and consumers.

Semester(s) Traditionally Offered: Spring

NDFS 2020 - Nutrition Throughout the Life Cycle
3 credits

Application of nutrition principles to the human life cycle: nutrient functions, needs, sources, and alterations during pregnancy, lactation, growth, development, maturation, and aging.

Prerequisite/Restriction: NDFS 1020.

Semester(s) Traditionally Offered: Spring

NDFS 3020 - Nutrition and Physical Performance
2 credits

Includes information on macro/micronutrient metabolism during exercise, specific problems experienced by athletes or highly active persons, myths, ergogenic aids, and current interests.

Prerequisite/Restriction: NDFS 1020.

Semester(s) Traditionally Offered: Fall

NDFS 3070 - Science of Food Preparation
3 credits

Science principles underlying modern food theory and practice. Relation of physical and chemical properties of food components and their systems to food preparation.

Prerequisite/Restriction: CHEM 1120 or CHEM 2300 or CHEM 2310.
Semester(s) Traditionally Offered: Spring
NDFS 3110 - Food, Technology, and Health (DSC)
DSC Depth Life and Physical Sciences
3 credits
Impact of food technology on food spoilage, food preservation, food quality, and foodborne diseases. Basic processing operations and regulations ensuring a safe food supply.
Prerequisite/Restriction: University Studies Breadth Life Sciences (BLS) course.

Semester(s) Traditionally Offered: Fall
NDFS 3600 - Medical Terminology for Health Care Professionals
1 credit
Internet-based course teaches medical terminology by focusing on medical word-building rules, prefixes, suffixes, and whole-body terminology related to human body systems. Also includes coverage of anatomy, pathological conditions, and diagnostic treatments and procedures.

Semester(s) Traditionally Offered: Fall, Spring
NDFS 4020 - Advanced Nutrition
3 credits
Structures, properties, and metabolism of protein, lipids, carbohydrates, vitamins, and minerals. Includes digestion, absorption, hormonal control, cellular biochemistry, metabolic interrelationships, excretion, etc.
Prerequisite/Restriction: NDFS 1020, CHEM 3700, BIOL 2420.

Semester(s) Traditionally Offered: Fall
NDFS 4040 - Dairy Foods
4 credits
Explores manufacture of various dairy foods, including pasteurized milk, UHT milk, cream, cheddar cheese, cottage cheese, process cheese, yogurt, butter, and milk and whey powders. Three lectures and one lab.
Prerequisite/Restriction: Enrollment in Animal, Dairy and Veterinary Sciences major.

Semester(s) Traditionally Offered: Fall
NDFS 4050 - Education and Counseling Methods in Dietetics I (CI)
CI Communications Intensive
2 credits
Principles of education, counseling, and communication as applied to the field of nutrition education and clinical dietetics practice. Prerequisite: Junior level in Coordinated or Didactic Program in Dietetics.
Corequisite: NDFS 4550.

Semester(s) Traditionally Offered: Fall
NDFS 4060 - Education and Counseling Methods in Dietetics II (CI)
CI Communications Intensive
2 credits
Continuation of NDFS 4050.
Prerequisite/Restriction: NDFS 4050.
Corequisite: NDFS 4560.

Semester(s) Traditionally Offered: Spring
NDFS 4250 - Culinary Skills and Management Rotation
3-9 credits
Internship experience in various food service settings. Specific locations and durations to be arranged by instructor. H834.
Prerequisite/Restriction: Junior standing.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall
NDFS 4420 - Nutrition Research Methodology (QI)
QI Quantitative Intensive
2 credits
Development of experimental design, data collection, statistical analysis, interpretation, and presentation of results. Clinical, community, and management data analysis. Interpretation and presentation, including benchmarking, cost/benefit analysis, and continuous quality improvement projects. Enrollment limited to
seniors within the Coordinated Program in Dietetics (CPD) or Didactic Program in Dietetics (DPD).

Prerequisite/Restriction: STAT 1040 or higher, MATH 1050.

Semester(s) Traditionally Offered: Spring

NDFS 4440 - Fundamentals of Food Engineering (QI)
QI Quantitative Intensive
4 credits

Engineering concepts taught in a fundamental sense and applied to food processing. Concepts include: general problem solving techniques, material and energy balances, fluid dynamics, heat transfer, refrigeration, and kinetics of common biological processes used in food preparation.

Prerequisite/Restriction: PHYS 2110.

Semester(s) Traditionally Offered: Fall

NDFS 4450 - Clinical Nutrition I Lab
1 credit

Supplement to NDFS 4550. Explores application of nutrition care process to medical case studies.

Semester(s) Traditionally Offered: Fall

NDFS 4460 - Clinical Nutrition II Lab
1 credit

Supplement to NDFS 4560. Explores application of nutrition care process to medical case studies.

Semester(s) Traditionally Offered: Spring

NDFS 4480 - Community Nutrition
3 credits

Introduction to public health nutrition, food programs, and national nutrition monitoring.

Prerequisite/Restriction: NDFS 1020.

Semester(s) Traditionally Offered: Fall

NDFS 4550 - Nutrition Assessment/Clinical Nutrition I
4 credits

Introduction to the profession of dietetics, assessment of nutrition status, and nutrition care planning. Pathophysiology of disease states and applied medical nutrition therapy.

Prerequisite/Restriction: CHEM 3700 enrollment restricted to Nutrition and Food Sciences majors only.

Semester(s) Traditionally Offered: Fall

NDFS 4560 - Clinical Nutrition II (CI)
CI Communications Intensive
4 credits

Continuation of NDFS 4550.

Prerequisite/Restriction: NDFS 4550.

Semester(s) Traditionally Offered: Spring

NDFS 4570 - Clinical Nutrition Experience I
1 credit

Practical experience in health care facilities. Integration and application of material learned in NDFS 4550. Corequisite: NDFS 4550.

Prerequisite/Restriction: Acceptance into Coordinated Program in Dietetics.

Semester(s) Traditionally Offered: Fall

NDFS 4580 - Clinical Nutrition Experience II
2 credits

Continuation of NDFS 4570. Corequisite: NDFS 4560.

Prerequisite/Restriction: NDFS 4570.

Semester(s) Traditionally Offered: Spring

NDFS 4660 - Medical Dietetics (CI)
CI Communications Intensive
12 credits

In-depth study of nutrition relationships in disease
development and treatment with clinical experience in medical facilities in Salt Lake City.

Prerequisite/Restriction: NDFS 4550, NDFS 4560, NDFS 4570, NDFS 4580.

Semester(s) Traditionally Offered: Fall

NDFS 4710 - Quantity Food Preparation
2 credits

Principles of food preparation applied to large quantity production, menu planning, food selection, storage, and equipment.

Prerequisite/Restriction: NDFS 1240, NDFS 1250, and NDFS 3070.

Semester(s) Traditionally Offered: Fall

NDFS 4720 - Food Service Organization and Management (QI)
QI Quantitative Intensive
2 credits

Principles of organization, management theory, financial controls, human and labor relations, employee training, layout, and sanitation.

Prerequisite/Restriction: NDFS 4710.

Semester(s) Traditionally Offered: Spring

NDFS 4730 - Quantity Food Preparation Lab
2 credits


Prerequisite/Restriction: NDFS 1240 and acceptance into Coordinated Program in Dietetics.

Semester(s) Traditionally Offered: Fall

NDFS 4740 - Food Service Organization and Management Lab
2 credits

Practical experience in food service management. Integration and application of NDFS 4720.

Prerequisite/Restriction: NDFS 4730.

Corequisite: NDFS 4720.

Semester(s) Traditionally Offered: Spring

NDFS 4750 - Management of Dietetics
3 credits

Principles of management in dietetics and current practice issues. Prerequisite: Must be enrolled in final year in Coordinated Program in Dietetics (CPD) or Didactic Program in Dietetics (DPD).

Semester(s) Traditionally Offered: Spring

NDFS 4780 - Maternal and Child Nutrition (CI)
CI Communications Intensive
3-4 credits

Normal and clinical nutritional requirements in pregnancy, lactation, and pediatrics. To be taken in Salt Lake City in conjunction with NDFS 4660 or by Didactic Program in Dietetics (DPD) students in their final year.

Prerequisite/Restriction: Enrollment in Nutrition, Dietetics and Food Sciences or Interdisciplinary Studies major

Semester(s) Traditionally Offered: Fall

NDFS 4900 - Special Problems
1-4 credits

Individual problems and research problems in Nutrition and Food Sciences.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 4990 - Nutrition and Food Sciences Seminar
1 credit

Senior student paper and presentation on current topics in nutrition and food sciences.

Prerequisite/Restriction: Senior in NDFS.

Semester(s) Traditionally Offered: Spring

NDFS 5020 - Meat Technology and Processing
4 credits
Emphasizes understanding the conversion of muscle to meat, fabrication of carcases into primal and retail cuts, and principles underlying manufacture of processed meats.

Crosslisted as: NDFS 6020.

Semester(s) Traditionally Offered: Fall

NDFS 5030 - Dairy Technology and Processing
4 credits

Covers biochemistry, microbiology, and technology of milk processing. Includes heat processing, fat separation, homogenization, concentration, drying, fermentation, freezing, and manufacture of dairy foods such as pasteurized milk, UHT milks, ice cream, cheeses, and yogurt.

Prerequisite/Restriction: NDFS 5110/NDFS 6110, NDFS 5560/NDFS 6560.

Crosslisted as: NDFS 6030.

Semester(s) Traditionally Offered: Fall

NDFS 5100 - Sensory Evaluation of Food (QI)
QI Quantitative Intensive
3 credits

Design and implementation of sensory testing of foods. Emphasizes physiology of senses, testing methods, statistical analysis, and taste panel experience.

Prerequisite/Restriction: STAT 3000.

Crosslisted as: NDFS 6100.

Semester(s) Traditionally Offered: Spring

NDFS 5110 - Food Microbiology (CI)
CI Communications Intensive
4 credits

Microorganisms in food spoilage, poisoning, preservation, and sanitation.

Prerequisite/Restriction: BIOL 2060 or BIOL 3300.

Crosslisted as: NDFS 6110.

Semester(s) Traditionally Offered: Spring

NDFS 5150 - Clinical Nutrition Practice
1 credit

Reinforces principles of medical nutrition therapy for preparation of dietetic internships. Includes detailed discussion of nutrition care process and its application in clinical settings. Reviews charting methods, education techniques, and various disease states commonly treated.

Prerequisite/Restriction: NDFS 4550, NDFS 4560.

Semester(s) Traditionally Offered: Spring

NDFS 5160 - Methods in Biotechnology: Cell Culture
3 credits

Techniques and fundamental knowledge for culturing mammalian and insect cells. Students will learn maintenance, growing, genetic engineering of cells, cytotoxicity, hybridoma creation, cloning, etc. Extensive laboratory experience is provided.

Crosslisted as: ADVS 5160 and BIOL 5160, and PSC 5160.

Semester(s) Traditionally Offered: Spring

NDFS 5170 - Principles of Food Safety and Food Quality Assurance
3 credits

Explores modern issues and programs of safety and quality assurance used in the food industry, including Good Manufacturing Practices (GMP), sanitation, Hazard Analysis and Critical Control Points (HACCP), and Safe Quality Food (SQF).

Prerequisite/Restriction: NDFS 5110.

Crosslisted as: NDFS 6170.

Semester(s) Traditionally Offered: Summer

NDFS 5200 - Nutritional Epidemiology
2 credits

Introduction to epidemiologic methods and their application to the study of nutrition, human health, and disease. Useful for students with career interests in
nutrition, food sciences, dietetics, human health sciences, veterinary sciences, biology, public health, anthropology, social work, and public policy.

Prerequisite/Restriction: STAT 1040 or higher, NDFS 1020.

Cross-listed as: NDFS 6200.

Semester(s) Traditionally Offered: Fall

NDFS 5210 - Advanced Public Health Nutrition
2 credits

Effects of diet on development and prevention of disease. Conditions of public health significance, including birth defects, coronary heart disease, hypertension, stroke, Alzheimer’s disease and other causes of dementia, cancer, osteoporosis, diabetes, and international health problems. Discussion of health concerns of minority populations, cross-cultural studies, government policy, and establishment of dietary recommendations.

Prerequisite/Restriction: STAT 1040 or higher, CHEM 1120 or higher.

Cross-listed as: NDFS 6210.

Semester(s) Traditionally Offered: Spring

NDFS 5220 - Endocrine Aspects of Nutrition
2 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: CHEM 3700 or permission of instructor.

Cross-listed as: NDFS 6220 and ADVS 5220/ADVS 6220 and BIOL 5220/BIOL 620.

Semester(s) Traditionally Offered: Spring

NDFS 5250 - Occupational Experiences in Nutrition and Food Sciences
1-3 credits

On-the-job training.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 5260 - Methods in Biotechnology: Molecular Cloning
3 credits

Laboratory-oriented course designed to teach molecular biology techniques such as DNA cloning, genetic probes, polymerase chain reaction, and DNA sequencing.

Prerequisite/Restriction: CHEM 3700 or CHEM 5710; or BIOL 3060; or permission of instructor.

Cross-listed as: ADVS 5260 and BIOL 5260, and PSC 5260.

Semester(s) Traditionally Offered: Fall

NDFS 5300 - Advanced Micronutrient Nutrition
3 credits

Explores the function, interaction, and practical significance of micronutrients in human metabolism and the ability of the diet to meet these needs. Relates nutrient biochemical functions to specific deficiency symptoms.

Prerequisite/Restriction: NDFS 4020.

Cross-listed as: NDFS 6300.

Semester(s) Traditionally Offered: Spring

NDFS 5370 - Nutrition and Immunology
2 credits

This course will explore the relationship of nutrition to either strengthen or weaken the immune system, including the effects of obesity, diabetes, allergies and autoimmune disease.

Prerequisite/Restriction: BIOL 2420 and CHEM 3700

Cross-listed as: NDFS 6370

Semester(s) Traditionally Offered: Fall

NDFS 5410 - Nutrient Gene Interactions
3 credits
Focuses on molecular interactions between nutrients and mechanisms of gene expression, including transcriptional regulation, post-transcriptional regulation, and epigenetics. Emphasizes nutrient/gene interactions involved in the etiology or prevention of chronic disease, such as cancer, cardiovascular disease, and metabolic syndrome.

Prerequisite/Restriction: CHEM 3700.

Cross-listed as: NDFS 6410.

Semester(s) Traditionally Offered: Spring

NDFS 5420 - Molecular Nutrition Laboratory
2 credits

Explores modern molecular nutrition techniques for determining the influence of nutrients on gene regulation. Focuses on modern techniques commonly used in the field of molecular nutrition, including cell culture, mRNA isolation and quantification, western blotting, promoter cloning/mutation, and nutrient/trans factor interactions.

Cross-listed as: NDFS 6420.

Semester(s) Traditionally Offered: Spring

NDFS 5500 - Food Analysis (QI)
QI Quantitative Intensive
4 credits

Application and theory of physical, chemical, and instrumental techniques for determination of composition and quality of food.

Prerequisite/Restriction: NDFS 5560/NDFS 6560.

Cross-listed as: NDFS 6500.

Semester(s) Traditionally Offered: Spring

NDFS 5510 - Food Laws and Regulations
2 credits

Provides background of federal/state laws and regulations and case law history affecting food production, processing, packaging, marketing, and distribution of food products.

Cross-listed as: NDFS 6510.

Semester(s) Traditionally Offered: Spring

NDFS 5560 - Food Chemistry
4 credits

Chemical structure, properties, reactions, and interactions of the important chemical constituents of food.

Prerequisite/Restriction: CHEM 3700 and CHEM 3710, or NDFS 3070.

Cross-listed as: NDFS 6560.

Semester(s) Traditionally Offered: Spring

NDFS 5610 - Food and Bioprocess Engineering
3 credits

Standardization and compounding of biomaterials and food products; preservation processing using heat, refrigeration, concentration, and dehydration. Basic unit operations in the bioprocessing industry.

Prerequisite/Restriction: BENG 3200.

Cross-listed as: NDFS 6610 and BENG 5610/BENG 6610.

Semester(s) Traditionally Offered: Fall

NDFS 5750 - Advanced Dietetics Practicum
1-6 credits

Advanced dietetics practicum in clinical nutrition, community nutrition, food service management, or research.

Prerequisite/Restriction: Must be enrolled in final year in Coordinated Program in Dietetics (CPD) or Didactic Program in Dietetics (DPD).

Cross-listed as: NDFS 6750.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 5830 - International Nutrition: Macronutrients
3 credits

Explores principles and roles of macronutrients in causing malnutrition influencing health, survival, and
developmental capacity of populations, especially in developing societies. Discussion of approaches implemented at household, community, national, and international levels to improve nutritional status.

Cross-listed as: NDFS 6830.

Semester(s) Traditionally Offered: Fall

NDFS 5920 - Food Product Development (CI)
CI Communications Intensive
3 credits

Capstone course that incorporates and unifies the principles of food chemistry, microbiology, engineering, processing, nutrition, sensory analysis, and statistics.

Prerequisite/Restriction: Senior standing.

Semester(s) Traditionally Offered: Fall

NDFS 6020 - Meat Technology and Processing
4 credits

Emphasizes understanding the conversion of muscle to meat, fabrication of carcasses into primal and retail cuts, and principles underlying manufacture of processed meats.

Cross-listed as: NDFS 5020.

Semester(s) Traditionally Offered: Fall

NDFS 6030 - Dairy Technology and Processing
4 credits

Covers biochemistry, microbiology, and technology of milk processing. Includes heat processing, fat separation, homogenization, concentration, drying, fermentation, freezing, and manufacture of dairy foods such as pasteurized milk, UHT milks, ice cream, cheeses, and yogurt.

Prerequisite/Restriction: NDFS 6110/NDFS 5110, NDFS 6560/NDFS 5560.

Cross-listed as: NDFS 5030.

Semester(s) Traditionally Offered: Fall

NDFS 6050 - Community Nutrition Internship
3-6 credits

Supervised school nutrition education internship in elementary and secondary public schools developing child nutrition programs.

Prerequisite/Restriction: Acceptance into USU Distance Dietetic Internship Program.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6100 - Sensory Evaluation of Foods
0 or 3 credits

Design and implementation of sensory testing of foods. Emphasizes physiology of senses, testing methods, statistical analysis, and taste panel experience.

Prerequisite/Restriction: STAT 3000.

Cross-listed as: NDFS 5100.

Semester(s) Traditionally Offered: Spring

NDFS 6110 - Food Microbiology
0 or 4 credits

Microorganisms in food spoilage, poisoning, preservation, and sanitation.

Prerequisite/Restriction: BIOL 2060 or BIOL 3300.

Cross-listed as: NDFS 5110.

Semester(s) Traditionally Offered: Spring

NDFS 6170 - Principles of Food Safety and Food Quality Assurance
3 credits

Explores modern issues and programs of safety and quality assurance used in the food industry, including Good Manufacturing Practices (GMP), sanitation, Hazard Analysis and Critical Control Points (HACCP), and Safe Quality Food (SQF).

Prerequisite/Restriction: NDFS 5110.

Cross-listed as: NDFS 5170.

Semester(s) Traditionally Offered: Summer
NDFS 6200 - Nutritional Epidemiology
2 credits

Introduction to epidemiologic methods and their application to the study of nutrition, human health, and disease. Useful for students with career interests in nutrition, food sciences, dietetics, human health sciences, veterinary sciences, biology, public health, anthropology, social work, and public policy.

Prerequisite/Restriction: STAT 1040 or higher, NDFS 1020.

Cross-listed as: NDFS 5200.

Semester(s) Traditionally Offered: Fall

NDFS 6210 - Advanced Public Health Nutrition
2 credits

Effects of diet on development and prevention of disease. Conditions of public health significance, including birth defects, coronary heart disease, hypertension, stroke, Alzheimer's disease and other causes of dementia, cancer, osteoporosis, diabetes, and international health problems. Discussion of health concerns of minority populations, cross-cultural studies, government policy, and establishment of dietary recommendations.

Prerequisite/Restriction: STAT 1040 or higher, CHEM 1120 or higher.

Cross-listed as: NDFS 5210.

Semester(s) Traditionally Offered: Spring

NDFS 6220 - Endocrine Aspects of Nutrition
2 credits

Provides physiological background into hormones involved in nutrient regulation, as well as mechanisms of hormone action at the cellular and molecular levels. Includes action of steroids in the nucleus and membrane-based signal transduction pathways. Course includes lectures and literature reviews/presentations.

Prerequisite/Restriction: CHEM 3700 or permission of instructor.

Cross-listed as: NDFS 5220 and ADVS 6220/ADVS 5220 and BIOL 6220/BIOL 5220.

NDFS 6250 - Clinical Nutrition Internship
5-10 credits

Supervised clinical nutrition experience including medical, geriatric, long-term care, and oncology.

Prerequisite/Restriction: Acceptance into USU Distance Dietetic Internship Program.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6300 - Advanced Micronutrient Nutrition
3 credits

Explores the function, interaction, and practical significance of micronutrients in human metabolism and the ability of the diet to meet these needs. Relates nutrient biochemical functions to specific deficiency symptoms.

Prerequisite/Restriction: NDFS 4020.

Cross-listed as: NDFS 5300

Semester(s) Traditionally Offered: Spring

NDFS 6350 - Food Service Management Internship
6-12 credits

Supervised school food service internship. Includes purchasing, inventory control, food service, and food production.

Prerequisite/Restriction: Acceptance into USU Distance Dietetic Internship Program.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6370 - Nutrition and Immunology
2 credits

This course will explore the relationship of nutrition to either strengthen or weaken the immune system, including the effects of obesity, diabetes, allergies and autoimmune disease.

Prerequisite/Restriction: BIOL 2420 and CHEM 3700

Cross-listed as: NDFS 5370
Semester(s) Traditionally Offered: Fall
NDFS 6410 - Nutrient Gene Interactions
3 credits
Focuses on molecular interactions between nutrients and mechanisms of gene expression, including transcriptional regulation, post-transcriptional regulation, and epigenetics. Emphasizes nutrient/gene interactions involved in the etiology or prevention of chronic disease, such as cancer, cardiovascular disease, and metabolic syndrome.

Prerequisite/Restriction: CHEM 3700.

Cross-listed as: NDFS 5410

Semester(s) Traditionally Offered: Spring
NDFS 6420 - Molecular Nutrition Laboratory
2 credits
Explores modern molecular nutrition techniques for determining the influence of nutrients on gene regulation. Focuses on modern techniques commonly used in the field of molecular nutrition, including cell culture, mRNA isolation and quantification, western blotting, promoter cloning/mutation, and nutrient/trans factor interactions.

Cross-listed as: NDFS 5420.

Semester(s) Traditionally Offered: Spring
NDFS 6500 - Food Analysis
0 or 4 credits
Application and theory of physical, chemical, and instrumental techniques for determination of composition and quality of food.

Prerequisite/Restriction: NDFS 6560/NDFS 5560.

Cross-listed as: NDFS 5500.

Semester(s) Traditionally Offered: Fall
NDFS 6510 - Food and Bioprocess Engineering
3 credits
Standardization and compounding of biomaterials and food products; preservation processing using heat, refrigeration, concentration, and dehydration. Basic unit operations in the bioprocessing industry.

Prerequisite/Restriction: BENG 3200.

Cross-listed as: NDFS 5610 and BENG 6610/BENG 5610.

Semester(s) Traditionally Offered: Spring
NDFS 6610 - Microbiology of Fermented Dairy Foods
1 credit
Explores the microbiology and physiology of dairy starter and nonstarter bacteria. Particular emphasis placed on important metabolic functions and biochemical pathways used by these microorganisms in food fermentations and their influence on product attributes.

Semester(s) Traditionally Offered: Spring
NDFS 6640 - Food Proteins
1 credit
Covers topics in protein structure, folding, functional properties, allergens, and purification.
NDFS 6650 - Meat Science
2 credits
Structure of muscle tissue, chemistry of contraction and relaxation, factors affecting meat tenderness, and postmortem changes and their effect on meat quality.
Prerequisite/Restriction: CHEM 3700.

NDFS 6660 - Cheese Science
2 credits
Studies application of chemistry and microbiology to the manufacture of cheese.

NDFS 6670 - Food Biosecurity and Crisis Management
1 credit
Food biosecurity addresses the intentional contamination of a food product. Crisis management focuses on how a food company deals with a crisis situation; including product recalls, dealing with the media, and damage control.

NDFS 6680 - Food Enzymes
2 credits
Covers topics in food enzymes, including enzyme classification and nomenclature, reaction kinetics, food applications, and immobilization technology.

NDFS 6690 - Genetics of Lactic Acid Bacteria
1 credit
Describes structural and functional characteristics of four major genetic elements described in lactic acid bacteria: plasmid DNA, transposable elements, bacteriophages, and the chromosome.
Prerequisite/Restriction: BIOL 3300 and CHEM 5700.

NDFS 6700 - Dairy Chemistry
1 credit
Students gain an understanding of the chemical structure, properties, biosynthesis, and reactions of the main constituents in milk. Students apply this knowledge to the development and processing of dairy foods.

NDFS 6720 - Lipid Analysis and Metabolism
1 credit
Focuses on lipid analysis and metabolism. Discusses biological roles of lipid classes, as well as appropriate methods for their analysis. Additionally, covers biological role lipids play in health and disease.

NDFS 6730 - Understanding Crystallization in Food Systems
2 credits
Introduces basic concepts of crystallization mechanisms, including theories governing the crystallization process and their applications in food systems. Emphasizes the importance of controlling crystallization and its influence on final product quality and stability.

NDFS 6740 - Waste and Energy Management
1 credit
Explores energy and waste management, including waste treatment methods and ways to reduce energy, or substitute with less-costly energy, in the food processing industry. Students learn through lectures, cooperative learning, site visits, and example problems.

NDFS 6750 - Advanced Dietetics Practicum
1-6 credits
Advanced dietetics practicum in clinical nutrition, community nutrition, food service management, or research. Prerequisite: Must be enrolled in final year in
Coordinated Program in Dietetics (CPD) or Didactic Program in Dietetics (DPD).

Cross-listed as: NDFS 5750.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6760 - Special Topics in Nutrition and Food Science
1-3 credits

Selected topics in nutrition and food science, based on individual faculty interests.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6770 - Advanced Management in Dietetics I
3 credits

First of a two part series meant to refine principles of management in the three practice areas of dietetics (clinical, food service management, and community nutrition programs) with an emphasis on School Nutrition Program Management.

Prerequisite/Restriction: Must be an MS candidate in dietetics or be eligible to take the national SFNS (School Food and Nutrition Service) exam.

Semester(s) Traditionally Offered: Fall

NDFS 6780 - Advanced Institutional Food Service Management
3 credits

Principles of management applied to institutional food services and advanced professional certification curriculum. To enroll, student must be an MS candidate in dietetics or be eligible to take the national SFNS (School Food and Nutrition Service) exam.

Semester(s) Traditionally Offered: Spring

NDFS 6830 - International Nutrition: Macronutrients
3 credits

Explores principles and roles of macronutrients in causing malnutrition influencing health, survival, and developmental capacity of populations, especially in developing societies. Discussion of approaches implemented at household, community, national, and international levels to improve nutritional status.

Cross-listed as: NDFS 5830.

Semester(s) Traditionally Offered: Fall

NDFS 6900 - Special Problems
1-4 credits

Individual problems and research problems for upper-division students in Nutrition and Food Sciences.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6910 - Teaching Experiences in Nutrition and Food Sciences
1-2 credits

Students work with faculty in the Nutrition, Dietetics, and Food Sciences Department to gain experience in teaching.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6970 - Thesis Research
1-12 credits

For students working on MS research.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 6990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 7800 - Seminar
1 credit

Reports and discussion on research and current literature.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

NDFS 7970 - Dissertation Research
1-12 credits

For students working on PhD research.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

NDFS 7990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Office Systems Support

OSS 1050 - Bookkeeping Essentials
3 credits
Overview of accounting concepts, with special emphasis on practical applications. Taught only as a special extension course as requested.

OSS 1060 - Introduction to Personal Financial Planning
1-3 credits
Introduction to concepts of financial planning for individuals. Taught only as a special extension course as requested.

OSS 1110 - Keyboarding
2 credits
For students with no previous keyboarding experience. Designed so student can touch type and learn basic concepts related to word processing and document formatting.

OSS 1400 - Microcomputer Applications
3 credits
Introduction to operating systems, word processing, Internet, graphics, database, and spreadsheet applications. Includes preparation for University Studies Computer and Information Literacy (CIL) examination.
Prerequisite/Restriction: Ability to keyboard at a minimum of 25 wpm.

OSS 1410 - Special Topics
1-3 credits
Selected topics related to using computers.
Repeatable for credit.

OSS 1420 - Word Processing Applications
3 credits
Word processing software instruction designed for office applications. Emphasizes creating business documents and improving keyboarding skills. Assumes ability to keyboard by touch at a minimum of 50 wpm.

OSS 1450 - Financial Software for Small Business Applications
3 credits
Instruction in the use of small business accounting software.
Prerequisite/Restriction: OSS 1050 or equivalent.

OSS 1550 - Business Correspondence (CI)
CI Communications Intensive
3 credits
Development and application of effective business writing skills, emphasizing business correspondence. Includes thorough review of grammar, spelling, and punctuation related to business correspondence.

OSS 2300 - Data Communications and Networking
3 credits
Emphasizes data communications in a LAN and WAN networking environment. Includes network protocols, cable technology, telecommunications standards, security issues, and general telecommunications management issues.
Prerequisite/Restriction: OSS 1400

OSS 2400 - Web Design Applications
3 credits
Design, development, and evaluation of documents for electronic media utilizing the worldwide web.
Prerequisite/Restriction: OSS 1400

OSS 2450 - Spreadsheets and Databases
3 credits
Use of spreadsheets and databases to accomplish application development.
Prerequisite/Restriction: OSS 1400
OSS 2500 - Visual Basic Applications
3 credits

Designed to teach nontechnical students to develop application solutions using Visual Basic. Features of Microsoft Access requiring knowledge of Visual Basic are introduced.

Prerequisite/Restriction: OSS 2450.

OSS 2520 - Integrating Office Technology
3 credits

Advanced applications of office technology for production of business documents, emphasizing efficient use of word processing, graphics, and desktop publishing.

Prerequisite/Restriction: OSS 1400

OSS 2600 - Office Procedures
3 credits

Finishing course which integrates office knowledge and skills. Applies administrative activities which are part of the office process.

Prerequisite/Restriction: OSS 2520; OSS 1550 or MIS 2200.

OSS 2800 - Principles of Selling
2 credits

Focuses on the sales process, including prospecting, qualifying customers, planning and delivering the sales presentation, overcoming objections, closing the sale, and satisfying the customer’s needs.

Parks and Recreation Professional

PRP 1000 - Introduction to Recreation Services
3 credits

Introduces the conceptual foundations of play, recreation, and leisure, as well as the history and current trends of the profession. Provides insight into the careers offered within the recreation services industry.

Semester(s) Traditionally Offered: Fall, Spring

PRP 1320 - Outdoor Ethics
3 credits

One of five foundation courses required for the Outdoor Recreation program. Covers four basic outdoor ethical areas: Ecological issues for activities in the wilderness, Federal and State rules and regulations for activities on their land, Archeological and Paleontological ethics and the consequences of human decisions on the environment. Students will learn the nine basic principles of “no trace left behind” which mitigates the hikers/campers impact on the natural environment. Students will learn how to conduct themselves in a wilderness environment with a minimal impact on geology, flora and fauna. Students will become familiar with the general rules Federal land. Primary “do's and don’ts will be covered for BLM, Forest Service and State or Federal Park lands. Covers policies related to archeological and paleontological artifacts and what the law requires from participants who encounter these artifacts. Course involves lecture, lab, and field trips and an activity fee is required. Adherence to safety protocols is mandatory for field trips.

Campus: USU Eastern only

PRP 1330 - Outdoor Safety
2 credits

Elective course designed for students interested in developing an awareness of safety and survival techniques necessary for a variety of activities such as backpacking, mountaineering, skiing, and prospecting. May be an elective for all majors. Provides for basic skill building so that should an unexpected outdoor emergency occur the student is prepared to survive. Students will gain general understanding of trip planning, attitude, safety, and survival techniques and business opportunities in the growing industry of farm and ranch recreation to supplement agricultural income. May be an elective credit for all majors. Ranch recreation is any recreational activity enjoyed by guests for a few hours or a few weeks, while on a farm or ranch. Coursework will include choosing, developing appropriate activities, resources, marketing, risk management and insurance. Course teaching methods include lecture, video, and labs.
principles. Class includes field work, labs, guest lecturers, video tapes and handouts. Completers will have knowledge of basic survival and of career opportunities in the recreation field.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

PRP 1340 - Introduction to Tour Guiding
1 credit

Helps students learn about the occupation of tour guiding and gain an appreciation for these unique areas and the people who have lived there over the past 2,000 years.

Campus: USU Eastern only

PRP 1600 - Outdoor Foods and Clothing
1 credit

Designed to introduce the novice student to the art of outdoor survival, with emphasis on food, clothing and self reliance. Covers the philosophies and history of the outdoor experience. Some student equipment will be required. Course includes lecture, guest speakers, lab and hands on experience.

Campus: USU Eastern only

PRP 1800 - Service Learning
1-3 credits

Designed to provide students with experience in the process and development of their altruistic tendencies. Students must select approved service areas. Learning will be experiential. Students will become aware of the needs in the community and adopt techniques and practices that will be beneficial to the recipient of the service. Students will profit from the opportunity to serve.

Campus: USU Eastern only

PRP 2380 - Facility Management
2 credits

Teaches the student how to properly maintain an athletic field. Students will learn to care for the playing surface and also the grounds around the playing surface. This is a "hands-on" course. Students will meet for a short description on what is to be accomplished each day, and the reminder of class time will be spent working on actual projects.

Campus: USU Eastern only

Page: 1 <- Back 10 .. 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 .. Forward 10 -> 55

Parks and Recreation Professional

PRP 2977 - Coopertive Education
1-3 credits

Provides supervised on-the-job training in recreation. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

PRP 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

PRP 3000 - Designing Recreation Experiences
3 credits

Introduces aspects of designing theory-based recreation experiences, utilizing methods, models, marketing, budgets, and evaluation.

Semester(s) Traditionally Offered: Fall, Spring

PRP 3025 - Techniques of Experiential Recreation
3 credits

Explores the foundations behind and techniques utilized in leading recreation experiences. Emphasizes practical experience with planning recreation activities.

Prerequisite/Restriction: PRP 1000, PRP 3000.

Semester(s) Traditionally Offered: Fall
PRP 3050 - Evaluation of Recreation Services (QI)
QI Quantitative Intensive
3 credits

Examines methods and practical applications of evaluation utilized in recreation services.

Prerequisite/Restriction: Enrollment limited to PRP majors only; PRP 1000, PRP 3000, PRP 3025; and MATH 1030 or STAT 1040 or a higher MATH or STAT course.

Semester(s) Traditionally Offered: Spring

PRP 3075 - Applications of Experiential Recreation
3 credits

Applies the management aspects of recreation services. Culminating course emphasizing design, implementation, and evaluation of recreation experiences.

Prerequisite/Restriction: PRP 1000, PRP 3000, PRP 3025, PRP 3050, PRP 4500, PRP 4550

Semester(s) Traditionally Offered: Spring

PRP 3900 - Diverse Populations
3 credits

Examines participation and management aspects of recreation experiences for diverse clientele. Explores settings, cultures, and contexts within the recreation services industry.

Prerequisite/Restriction: PRP 1000 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall

PRP 4100 - History of Leisure (CI)
CI Communications Intensive
3 credits

Explores historical, behavioral, scientific, and philosophical foundations of leisure and recreation.

Prerequisite/Restriction: PRP 1000 and fulfillment of Communications Literacy CL2 requirement.

Semester(s) Traditionally Offered: Spring

PRP 4250 - Cooperative Work Experience
1-12 credits

Provides practical and educational work and/or voluntary opportunities to gain professional experience prior to PRP 4750.

Prerequisite/Restriction: PRP 1000, PRP 3000 (both of which may be taken concurrently).

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PRP 4500 - Management of Recreation Services
3 credits

Provides entry-level knowledge of current management practice, specializing in human resources, finance, budget, and marketing.

Prerequisite/Restriction: PRP 1000, PRP 3000.

Semester(s) Traditionally Offered: Fall

PRP 4550 - Legal Aspects and Facility Management
3 credits

Provides entry-level knowledge of infrastructure management, risk management, and legal aspects of the recreation services industry.

Prerequisite/Restriction: PRP 1000 and PRP 3000

Semester(s) Traditionally Offered: Fall

PRP 4500 and PRP 4550 may be taken concurrently.

Corequisite: PRP 4500 and PRP 4550

Semester(s) Traditionally Offered: Fall

PRP 4725 - Senior Seminar (CI)
CI Communications Intensive
3 credits
Focuses on current issues and trends in recreation services through analysis, papers, presentation, and discussion with professionals.

Prerequisite/Restriction: PRP 1000, PRP 3000, PRP 3025, PRP 3050, PRP 3075, PRP 3900, PRP 4100, PRP 4500, PRP 4550 and fulfillment of CL2 requirement (ENGL 2010). PRP 3075 and PRP 4100 may be taken concurrently.

Corequisite: PRP 3075 and PRP 4100

Semester(s) Traditionally Offered: Spring

PRP 4750 - Internship in Recreation Services
6 credits

Fulfills professional practice requirement of a minimum of 400 hours with a cooperating recreation service agency.

Prerequisite/Restriction: PRP 1000, PRP 3000, PRP 3025, PRP 3050, PRP 3075, PRP 3900, PRP 4100, PRP 4500, PRP 4550, PRP 4700, PRP 4725; INST 5205.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PRP 4970 - Honors Senior Thesis
1-6 credits

Culminating experience within the department for honors students. Student works closely with faculty mentor in an extensive project in the student’s area of interest.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PRP 5900 - Independent Study
1-3 credits

Students work on special projects and/or research out of the classroom, with approval and guidance of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PRP 5910 - Independent Research
1-3 credits

Students work on research out of the classroom, with approval and guidance of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PFP 3460 - Fundamentals of Personal Investing
3 credits

Examination of investment vehicles available to personal investor. Principal emphasis on corporate and government securities. Credit cannot be used toward requirements for finance major.

Semester(s) Traditionally Offered: Spring

PFP 5060 - Personal Financial Planning and Advising
3 credits

Fundamental concepts and principles of personal financial planning for individuals.

Cross-listed as: PFP 6060.

Semester(s) Traditionally Offered: Fall

PFP 5070 - Retirement Planning
3 credits

Concepts and principles of retirement planning, including retirement and benefit plans, deferred compensation, and investments.

Cross-listed as: PFP 6070.

Semester(s) Traditionally Offered: Spring

PFP 5080 - Estate Planning
3 credits

Concepts and principles of estate planning for individuals, including goal identification, data gathering, forms of property ownership, documents, probate, and transfer taxes.

Cross-listed as: PFP 6080.

Semester(s) Traditionally Offered: Spring

PFP 5090 - Personal Financial Plans
3 credits

Capstone course in personal financial planning.
Knowledge from other financial planning courses used to prepare comprehensive personal financial plans.

Prerequisite/Restriction: ACCT 3410; PFP 3460 or FIN 4460; PFP 5060/PFP 6060, PFP 5070/PFP 6070, PFP 5080/PFP 6080 (all prerequisites may be taken concurrently).

Cross-listed as: PFP 6090.

PFP 6060 - Personal Financial Planning and Advising
3 credits

Fundamental concepts and principles of personal financial planning for individuals.

Cross-listed as: PFP 5060.

Semester(s) Traditionally Offered: Fall

PFP 6070 - Retirement Planning
3 credits

Concepts and principles of retirement planning, including retirement and benefit plans, deferred compensation, and investments.

Cross-listed as: PFP 5070.

Semester(s) Traditionally Offered: Spring

PFP 6080 - Estate Planning
3 credits

Concepts and principles of estate planning for individuals, including goal identification, data gathering, forms of property ownership, documents, probate, and transfer taxes.

Cross-listed as: PFP 5080.

Semester(s) Traditionally Offered: Spring

PFP 6090 - Personal Financial Plans
3 credits

Capstone course in personal financial planning. Knowledge from other financial planning courses used to prepare comprehensive personal financial plans.

Prerequisite/Restriction: ACCT 3410; PFP 3460 or FIN 4460; PFP 6060/PFP 5060, PFP 6070/PFP 5070, PFP 6080/PFP 5080 (all prerequisites may be taken concurrently).

Cross-listed as: PFP 5090.

PFP 6560 - Business Law and Professional Responsibilities
3 credits

Examines the ethical and legal responsibilities of business professionals. Includes the application of law to business organizations, contracts, government regulation of business, and the uniform commercial code.

Semester(s) Traditionally Offered: Fall, Spring

Philosophy

PHIL 1000 - Introduction to Philosophy (BHU)
BHU Breadth Humanities
3 credits

Introduction to philosophical questions regarding truth, knowledge, reality, mind, God, morality, and meaning. Examination of various philosophical responses to these questions.

Semester(s) Traditionally Offered: Fall, Spring

PHIL 1120 - Social Ethics (BHU)
BHU Breadth Humanities
3 credits

Examination of principles and arguments underlying current debate in American law and politics. Topics may include abortion, euthanasia, capital punishment, discrimination and affirmative action, sexual harassment, freedom of expression, welfare, and duties to help the poor in other nations.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PHIL 1250 - Practical Logic (BHU)
BHU Breadth Humanities
3 credits

Recognition of arguments and diagramming their logical structure. Study of valid argument forms, as well as formal and informal fallacies. Evaluating categorical syllogisms using rules and Venn diagrams. Basic propositional logic.
PHIL 2200 - Deductive Logic (QI)
QI Quantitative Intensive
3 credits

Study of deductive arguments and techniques for evaluating their validity, including construction of proofs. Recognizing formal fallacies in reasoning. Symbolizing English sentences and arguments to make their meanings precise. Propositional logic. Study of quantifiers and relations.

Prerequisite/Restriction: MATH 1050 or STAT 1040.

Semester(s) Traditionally Offered: Fall

PHIL 2400 - Ethics (BHU)
BHU Breadth Humanities
3 credits

Study of judgments concerning what is good or bad, right or wrong. How judgments are justified and related to action. Relativism, subjectivism, absolutism, freedom, and responsibility.

PHIL 2600 - Introduction to Philosophy of Religions (BHU/OCI)
BHU/OCI Breadth Humanities and Oral Communication Intensive (USU Eastern)
3 credits

Explores the importance of spirituality for human life. First half of this course looks at the role of myth, symbolism and ritual as found in ancient religion. Second half of this class looks at the transition from polytheism to monotheism and the effect it has had on human nature. Some time will be dedicated to the understanding of Native American, Eastern and alternative religions.

Campus: USU Eastern only

PHIL 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

PHIL 3100 - Ancient Philosophy (CI)
CI Communications Intensive
3 credits

Development of philosophical thought in the Ancient Greek world. Readings from the pre-Socratics, Plato, Aristotle, the Stoics, and Epicureans.

PHIL 3110 - Medieval Philosophy
3 credits

Neo-Platonism with stress on Plotinus, St. Augustine, and early Christian philosophy; early medieval thought; St. Thomas Aquinas and the rise of scholasticism; and philosophical thought in the Renaissance.

Prerequisite/Restriction: PHIL 1000 or PHIL 3100 or permission of instructor

PHIL 3120 - Early Modern Philosophy (CI)
CI Communications Intensive
3 credits

Philosophers and philosophical disputes in Western Europe from 1400-1750. Figures and topics may include: Bacon, Hobbes, Descartes, Locke, Hume, nominalism, empiricism, rationalism, religion, politics, and morals.

PHIL 3150 - Kant and the Nineteenth-Century (CI)
CI Communications Intensive
3 credits

Study of Kant and nineteenth-century European philosophers, which may include, Hegel, Kierkegaard, Mill, Marx, Schopenhauer, and Nietzsche.

Prerequisite/Restriction: PHIL 1000 or PHIL 3120 or permission of instructor

PHIL 3180 - Contemporary European Philosophy (CI)
CI Communications Intensive
3 credits

Study of twentieth-century philosophical movements originating and developing on the European continent. Movements to be considered may include: existentialism, phenomenology, hermeneutics, and post-metaphysical philosophy.

Prerequisite/Restriction: PHIL 1000 or PHIL 3120 or PHIL 3110 or PHIL 3120 or PHIL 3150 or PHIL 3600 or PHIL 4400 or PHIL 4410 or permission of instructor

PHIL 3500 - Medical Ethics
3 credits
Key issues in medicine, including: consent, competency, confidentiality, euthanasia, abortion, and the justification of health care.

PHIL 3510 - Environmental Ethics (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Key issues in the treatment of nature, such as: the value of wilderness, animal rights, comparative views of nature, and moral issues in economic approaches to the wilderness.

PHIL 3520 - Business Ethics (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Key issues in business, including: foreign bribery, corporate responsibility, corporate culture, ethical theories, justice, and preferential treatment.

PHIL 3600 - Philosophy of Religion (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Problems in defining “religion” and the existence of God; the problem of evil; the immortality of the soul; religious experience; faith; alternatives to theism; religious language.

PHIL 3710 - Philosophies of East Asia
3 credits

Study of Confucianism, Buddhism, Zen Buddhism, and Taoism. Focus on appreciating the merits of each system of thought. Emphasis on class discussion. Includes much assigned reading every week.

PHIL 3720 - Philosophical Theology After Kant
3 credits

Explores attempts to reconstruct the reasonable basis of religion in the two centuries after the Enlightenment.

PHIL 4300 - Epistemology
3 credits

Study of foundations of knowledge and belief systems, and related topics in epistemology, including perception, certainty, and skepticism.

Prerequisite/Restriction: PHIL 1000 or PHIL 3100 or PHIL 3110 or PHIL 3120 or PHIL 3150 or PHIL 3600 or PHIL 4310 or PHIL 4400 or PHIL 4410 or permission of instructor

PHIL 4310 - Philosophy of Science (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Study of different views of the nature of science: the classical traditions of Hempel and Popper, Kuhn’s subjectivism, and Feyerabend’s anarchism. Topics include confirmation, induction, scientific realism, reductionism, and the growth of scientific knowledge.

PHIL 4400 - Metaphysics
3 credits

Study of fundamental problems of existence. Topics include: mind and its relation to the body, determinism and human freedom, fatalism, idealism and realism, truth, and our knowledge of the world.

PHIL 4410 - Philosophy of Mind
3 credits

Beginning with the context of Cartesian mind/body dualism, a thorough examination of Cartesian privacy, privileged access, and the problem of other minds is conducted. Ancillary topics may include the mind/machine controversy and animal intelligence.

PHIL 4500 - Contemporary Ethical Theory
3 credits

Careful examination of one or more topics playing a central role in current moral philosophy. Focus on work produced in philosophical literature within last twenty years.

Prerequisite/Restriction: PHIL 1000 or PHIL 1120 or PHIL 2400 or PHIL 3500 or PHIL 3510 or PHIL 3520 or permission of instructor

PHIL 4530 - Ethics and Biotechnology (DSC)
DSC Depth Life and Physical Sciences
3 credits

Interdisciplinary examination of key issues such as: cloning, human genetic screening and therapy, and transgenic animals and food.

Cross-listed as: PHIL 6530.
PHIL 4600 - Philosophy of Law
3 credits
Examines the nature of law, relations between law and morality, the obligation to obey law, ways to interpret law, the justification of legal punishment, and appropriate conditions for civil and criminal liability.

PHIL 4610 - Social and Political Philosophy (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Explores the nature of a just society, political obligation, and justification and proper limits of political power.

Semester(s) Traditionally Offered: Fall, Odd Years

PHIL 4900 - Special Topics
3 credits
Detailed consideration of a particular philosopher or philosophical problem. Course may be repeated when a different topic is discussed.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

PHIL 4910 - Readings and Research
1-4 credits
Independent study of a particular philosopher or philosophical topic. Course may be repeated when a different topic is discussed.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

PHIL 4920 - Senior Honors Seminar
1 credit
Credit for completing and presenting a senior honors thesis project. Requirement may be fulfilled by publishing the thesis in an academic journal, defending the thesis before a faculty committee, presenting the thesis at an academic conference, or presenting the thesis in the philosophy session during Scholar’s Day.

Semester(s) Traditionally Offered: Spring

PHIL 4930 - Senior Honors Thesis
1-4 credits
Independent study research credits for preparation of a senior honors thesis to fulfill requirements for a degree in philosophy with departmental honors.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PHIL 4990 - Philosophy Seminar
3 credits
Advanced study of recent work in philosophy. Topic will vary by instructor. Especially appropriate for students planning to go on to graduate or professional school.

Repeatable for credit.

PHIL 6530 - Ethics and Biotechnology
3 credits
Interdisciplinary examination of key issues such as: cloning, human genetic screening and therapy, and transgenic animals and food. To receive graduate credit, extra readings and a 25-30 page paper will be required.

Cross-listed as: PHIL 4530.

PHIL 6890 - Philosophy of Science
3 credits
PHIL 6900 - Independent Study
1-4 credits
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Physical Education Activity

PE 1010 - Aerobics
1 credit
Fitness program, primarily designed to improve cardiovascular fitness, muscular endurance, and flexibility.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring
PE 1014 - Turbo Dance Aerobics  
1 credit

Course will leave students feeling energized, with a warm up, a little cardio time to burn calories, along with toning for their arms, waist, hips, thighs, and your abs, plus cool down. Students should bring a smile, towel, and water, and wear comfortable workout shoes and clothing.

Campus: USU Eastern only

PE 1016 - Spinning  
1 credit

Intense cardiovascular conditioning class performed on stationary bikes.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

PE 1030 - Aerobic Kickboxing  
1 credit

Designed as a fitness program to improve cardiovascular fitness, muscular endurance, and flexibility through a combination of aerobic exercise and kickboxing. Emphasis placed on safety, fitness, and enjoyment.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

PE 1046 - Jog/Walk  
1 credit

Provides students with opportunity to achieve and maintain personal fitness through jogging and/or walking.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1055 - Pilates  
1 credit

Provides a mind-body exercise program designed to strengthen core stability, increase flexibility, and increase muscle tone.

Repeatable for credit.

Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

PE 1057 - Yoga  
1 credit


Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1058 - Yoga II  
1 credit

Provides an opportunity for students to learn and practice basic and intermediate Hatha Yoga skills. May be elective credit depending on major. These courses will focus on warmups, posture, and floor exercise. Skills learned in this course will assist in the development of strength, muscle tone and weight regulation. Students will also increase endurance, flexibility, and peace of mind, while providing for a means of eliminating stress. Class includes lectured lab.

Campus: USU Eastern only  
Semester(s) Traditionally Offered: Fall, Spring

PE 1063 - Conditioning  
1 credit

Designed to improve overall flexibility, strength, and endurance capacity of the body.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

PE 1085 - Weight Training  
1 credit

Demonstration of proper weight training techniques. Helps students understand basic concepts related to weight training, in order to gain strength, improve muscle tone, and start or continue a healthy lifestyle.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer
PE 1090 - Resistance and Stabilization Training
1 credit
Provides students with combination of strength and stabilization training, including agility, balance, and coordination work. Some plyometrics may also be incorporated.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1097 - Fitness for Life
2 credits
Designed to help students learn and apply overall wellness principles, including physical, psychological, and social areas, to help improve and maintain what would be considered a healthy lifestyle. Successful completers should learn to assess, prescribe, and implement exercise, nutrition, weight control, and stress management programs through class discussions, individual fitness evaluations, and class assignments. There is not a prerequisite, although it would benefit students entering the fitness or sports professions.
Campus: USU Eastern only

PE 1093 - Table Tennis
1 credit
Designed for students desiring a basic understanding of table tennis. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1050 - Badminton
1 credit
Through active participation, students learn basic skills, rules, and strategies of singles and doubles badminton.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1100 - Tennis I Beginning
1 credit
Designed for students desiring a basic understanding of tennis. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1101 - Tennis II Intermediate
1 credit
Designed for students with a basic knowledge of tennis who desire to learn intermediate skills. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1102 - Racquetball I Beginning
1 credit
Designed to help students understand the general rules and strategies of racquetball, improve competitive skills, and play safely and effectively.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1103 - Table Tennis
1 credit
Designed for students desiring a basic understanding of table tennis. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1105 - Badminton
1 credit
Through active participation, students learn basic skills, rules, and strategies of singles and doubles badminton.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1110 - Racquetball I Beginning
1 credit
Designed to help students understand the general rules and strategies of racquetball, improve competitive skills, and play safely and effectively.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1111 - Racquetball II Intermediate
1 credit
Designed for students with a basic knowledge of racquetball who desire to learn intermediate skills. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1112 - Racquetball III Advanced
1 credit
Designed for students with proficient skills and knowledge of racquetball who desire to learn advanced skills. Improvement of skills and strategies through active participation in drills and games.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1120 - Handball
1 credit
Provides skills and knowledge in the fundamentals of handball.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1130 - Golf Beginning
1 credit
Designed for the beginning and novice golfer. Basics of individual grip, set-up, posture, and swing. Includes putting, chipping, weight transfer, and balance.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1131 - Golf Intermediate
1 credit
Designed for students with basic golf skills who desire to learn more about golf and improve their golf skills. Improvement of strategies and skills through active participation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1135 - Archery I
1 credit
Elective course to introduce students to the fundamentals of archery. Also covers the history and development of bow shooting. Includes lecture, lab and range shooting. Some student equipment may be required.

Campus: USU Eastern only

PE 1136 - Archery II
1 credit
Elective course to introduce students to the fundamentals of archery. Also covers the history and development of bow shooting. Includes lecture, lab and range shooting. Some student equipment may be required.

Campus: USU Eastern only

PE 1140 - Marksmanship I
1 credit
Provides the opportunity for students to become familiar with small bore target shooting. Course starts with small bore firearms, usually using the 22 Long Rifle caliber firearm. Students will become familiar with and understand the basic concepts of precision shooting, breathing control, sighting techniques and proper trigger squeeze. Basic shooting positions will be discussed and practiced. Ballistics and firearm response will be taught. A large portion of the course will center around general firearm etiquette and safety procedures and students will have extensive opportunities to practice on a firing range. Safety protocols will be learned and adherence to those policies is mandatory. Course involves lecture, lab and field trips. A lab fee is required.

Campus: USU Eastern only

PE 1141 - Marksmanship II
1 credit
Course is a continuing opportunity for students to become familiar with large bore target shooting. Course utilizes large bore center fire rifles. Students will further explore and understand the basic concepts of precision shooting, breathing control, sighting techniques and proper trigger squeeze. Basic shooting positions will be discussed and practiced. Ballistics and firearm response will be taught. A large portion of the course will center around general firearm etiquette and safety procedures and students will have extensive opportunities to practice on a firing range. Safety protocols will be learned and adherence to those policies is mandatory. Course involves lecture, lab and field trips. A lab fee is required.

Campus: USU Eastern only

PE 1145 - Bowling
1 credit
Provides students with the knowledge, skills, and strategies for successful participation and enjoyment.
 Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1146 - Bowling Intermediate
1 credit

Designed for students with basic bowling skills who desire to learn intermediate skills. Improvement of strategies and skills through active participation and games.

Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1150 - Billiards Beginning
1 credit

Designed to develop basic knowledge and concepts for playing a variety of games. Focuses on stroke mechanics, shot selection, and strategy.

Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1151 - Billiards Intermediate
1 credit

Designed for students with basic billiards skills who desire to learn intermediate skills. Improvement of strategies and skills through active participation and games.

Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1152 - Billiards Advanced
1 credit

Designed for students with proficient skills and knowledge of billiards who desire to learn and improve their skills. Improvement of strategies and skills through active participation and games.

Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1155 - Fencing
1 credit

Introduction to basic techniques of fencing.

Repeatable for credit. 
Pass/Fail only.

PE 1160 - Trap and Skeet Shooting
2 credits

Introduces students to clay target sports. Students will learn the history as well as the difference between trap, skeet and sporting clays. Students will learn how clay target sports evolved and how to play several different games. Main emphasis will be on trap shooting. Proper stance, target acquisition, trigger squeeze and follow through will also be taught. Course involves lecture, lab and field trips. A lab fee is required.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

PE 1170 - Gymnastics
1 credit

Designed to enhance current abilities and teach skills according to the individual student’s abilities. Skills taught through drill work and lecture.

Repeatable for credit. 
Pass/Fail only. 
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1171 - Gymnastics II
1 credit

Elective course will provide an opportunity for students to learn basic and intermediate gymnastic skills. May be elective credit depending on major. Coaching on all four events: vaults, bars, beam and floor exercise. Class includes lectured labs.

Campus: USU Eastern only
PE 1200 - Basketball
1 credit

Designed to help the recreational player become more familiar with the basic skills involved in the game of basketball. During the course, games and/or a “mini” tournament will be played.
Repeated for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1210 - Volleyball Beginning
1 credit

Designed to help students understand the general rules and strategies and enjoyment of the game through active participation.

Repeated for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1211 - Volleyball Intermediate
1 credit

Designed for students with basic knowledge of volleyball who desire to learn intermediate skills. Improvement of skills and strategies through active participation in drills and games.

Repeated for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1212 - Volleyball Advanced
1 credit

Designed for students with proficient skills and knowledge of volleyball who desire to learn new skills and improve their skills. Improvement of skills and strategies through active participation in drills and games.

Repeated for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1225 - Softball
1 credit

Designed to help students develop and understand the skills and strategies of recreational softball through active participation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1230 - Soccer
1 credit

Designed to help students develop and understand the skills and strategies of soccer through active participation in drills and games.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1235 - Flag Football
1 credit

Designed to help students develop and understand the skills and strategies of recreational flag football through active participation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

PE 1245 - Ultimate Frisbee
1 credit

Designed to enhance each student's skills and abilities in ultimate frisbee. Emphasizes cardiovascular and muscular fitness. Course is progressive, with increase in intensity as the individual improves abilities.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1246 - Ultimate Frisbee Intermediate
1 credit

Designed to enhance the skills and abilities of students desiring to learn intermediate skills in ultimate frisbee. Emphasizes cardiovascular and muscular fitness. Improvement of skills and strategies through active participation in drills and games.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring
PE 1260 - Ice Hockey Beginning
1 credit

Designed for students desiring a basic understanding of ice hockey. Conditioning and skill development achieved through active participation in drills and games.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1261 - Ice Hockey Intermediate
1 credit

Designed for students with a basic understanding of ice hockey who would like to learn intermediate skills and techniques. Conditioning and skill development achieved through active participation in drills and games.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1265 - Officiating Ice Hockey
1 credit

Development of skating skills, positioning, and rules knowledge. Students officiate at scrimmages and games, and are evaluated on their performance. Course leads to USA Hockey levels 1, 2, and 3 certification.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

PE 1300 - Swimming Beginning
1 credit

Designed for swimmers and nonswimmers desiring to improve swimming skills and enhance cardiovascular and muscular fitness. Emphasizes swimming safety and enjoyment in a variety of water activities. Beginning and intermediate swim sections offered.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1301 - Lap Swimming
1 credit

Designed for swimmers desiring to improve swimming skills and enhance cardiovascular and muscular fitness.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1315 - Water Aerobics
1 credit

Provides students with opportunity to maintain personal fitness, with an emphasis on non-weight-bearing cardiovascular activity in water.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1340 - Life Guard
1 credit

Campus: USU Eastern only

PE 1345 - Water Safety Instructor
1 credit

Prerequisite/Restriction: Must be able to tread water for two minutes, to swim the Side Stroke, Breast Stroke and Back Crawl Stroke, 500 yards each. A qualifications test will be given before the first day of class.

Campus: USU Eastern only

PE 1350 - Scuba Diving I
1 credit

Campus: USU Eastern only
PE 1400 - Self-Defense
1 credit
Covers skill development in terms of defensive capability, environment assessment, situation management, and the legal ramifications of the use of force.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1407 - Rape Aggression Defense
1 credit
Designed to develop and enhance the options of self-defense, so they may become viable considerations to the woman who is attacked. Students learn how to use personal weapons against abduction.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1410 - Tai Chi Chuan
1 credit
Designed to give participants entry-level experience in the art of Tai Chi Chuan. Participants explore the physical, meditational, yogic, metaphysical, and martial foundations of the art.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1430 - Karate
1 credit
Designed to develop and enhance the options of self-defense for students with little or no background in martial arts (Eastern or Western) with the rudimentary skills of self-defense.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1444 - Martial Arts Tang Soo Do
2 credits
Introduction to a Korean form of martial arts called Tang Soo Do. Course will take students through physical training specific to the discipline in preparation of learning the style basics for stances and blocking in defensive moves and techniques of punching and kicking in offensive moves. History and philosophy of the discipline will also be taught. Respect and etiquette of this style of art are factors that will lead a student to understand and demonstrate self control and self awareness. Course requires physical exertion and physical contact.
Campus: USU Eastern only

PE 1445 - Tae Kwon Do
1 credit
Students learn Tae Kwon Do self-defense techniques through blending with the energy of an attacker, physical exercises for mind-body coordination, and forms of breathing to improve concentration and relaxation.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1446 - Shorinji Kempo
1 credit
Elective course that allows students to progress through various levels of the Japanese martial art of self defense known as Shorinji Kempo. Instruction includes both “soft” techniques (escapes, arm locks, throws, and pins) and “hard” techniques (blocks, punches, and kicks). Through mastery of skills, students may progress from the white belt of the beginner through the colored belts of more advanced ranks. Qualifying exams by a Branchmaster will determine advancement. Repeatable credit is available so that this class can be taken multiple semesters to allow accomplishment of individual goals.
PE 1480 - Mountaineering I
2 credits

Designed to introduce and acquaint students with mountaineering skills and knowledge such as: rock climbing, mountain travel, and camping at elevation, as well as route finding and safety procedures. May be an elective credit depending on major. In order to enjoy the class outings, students should be in good health and physical condition. Some student outdoor equipment and clothing may be required. Course includes lecture, lab and field experience.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

PE 1490 - Mountaineering II
2 credits

Designed to introduce and acquaint students with mountaineering skills and knowledge such as: rock climbing, mountain travel, and camping at elevation, as well as route finding and safety procedures. May be an elective credit depending on major. In order to enjoy the class outings, students should be in good health and physical condition. Some student outdoor equipment and clothing may be required. Course includes lecture, lab and field experience.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

PE 1500 - Canoeing I
1 credit

Introduces students to the sport of canoeing. Provides students with the opportunity to gain the knowledge and skills necessary to enjoy floating class I and II rivers safely. Students will participate in day trips. Safety, environmental, and ethical issues will be considered. Students need to be in good physical condition and must be able to swim. Safety protocols will be learned and adherence to those policies is mandatory. Course involves lecture, lab and field trips and a lab fee is required.

Campus: USU Eastern only

PE 1505 - Kayaking I
1 credit

Provides basic skills and knowledge in kayaking.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1506 - Kayaking II
1 credit

Continuation of Kayaking I, where students will put their skills to use learning how to navigate and handle kayaks in the river environment. Students will become familiar with techniques necessary to properly handle a kayak on a variety of river conditions utilizing the skills they were previously taught. These techniques will be practiced and taught under the supervision of a qualified instructor on field trips that will provide the student the ability to test their skills under conditions. Proper gear and equipment will be emphasized. Kayaking history, river ethics and environmental considerations will be taught. Safety protocols will be learned and adherence is mandatory. Students must be good swimmers. Field trips will be taken and lab fees assessed to rent equipment and pay river permits.

Prerequisite/Restriction: PE 1505

Campus: USU Eastern only

PE 1508 - River Guide Preparation
3 credits

Introduces students to responsibilities of river guiding and to learn the skills necessary to become an apprentice river guide. Safety and environmental considerations will be emphasized. Students need to be in good physical condition. History, river ethics and environmental considerations will also be taught. Safety protocols will be learned and adherence is mandatory. Students must be good swimmers. Field trips will be taken and lab fees assessed to rent equipment and travel.

Campus: USU Eastern only

PE 1509 - River Running I
1 credit

Introduces students to the sport of river running. Provides students with the opportunity to gain the
knowledge and skills necessary to enjoy river running safely. Students will participate in rafting rivers up to class 3. Skills involved with paddle boats will be emphasized. Safety, environmental, and ethical issues will be considered. Students need to be in good physical condition. Safety protocols will be learned and adherence is mandatory. Students must be good swimmers. Field trips will be taken and lab fees assessed to rent equipment and pay for river trips.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

PE 1510 - Fly Fishing
1 credit
Provides students with the opportunity to develop the skills, knowledge, and strategies for successful participation and enjoyment. Classes are offered in beginning and intermediate fly tying, rod building, and casting.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1511 - Fly Tying Beginning
1 credit
Provides students with an introduction to fly tying, including knots, flies, casting, fishing, and understanding trout streams.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1512 - Fly Tying Intermediate
1 credit
Designed for students with basic fly tying skills who are interested in learning intermediate skills.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1513 - Fly Casting
1 credit
Designed for students desiring a basic understanding of fly casting techniques and strategies.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1514 - Fly Rod Building
1 credit
Designed for students desiring a basic understanding of fly rod building. Students will build a fly rod for their own personal use.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1515 - Sailing
1 credit
Provides skills and knowledge in the fundamentals of sailing and water safety.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1520 - Hiking
1 credit
Provides skills and knowledge in hiking, with an emphasis on leave no trace techniques and safe operations in an outdoor environment.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1523 - Orienteering
1 credit
Provides skills and knowledge in the fundamentals of orienteering with an emphasis on wilderness travel techniques and safety in the outdoors.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1527 - Rock Climbing: Basic
1 credit
Provides skills and knowledge in basic rock climbing.
teaching safe judgment and proper techniques in a climbing gym.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1529 - Introduction to Wall Climbing
0.5 credit

Introduces students to the sport of Bouldering and to learn the skills necessary to make Bouldering safe and fun. Safety and environmental considerations will be emphasized. Students need to be in good physical condition. Students who are incapable of doing the basics on the climbing wall will not be allowed to continue in the class. This is for their own safety.

Campus: USU Eastern only

PE 1530 - Bouldering
1 credit

Introduces students to the sport of Bouldering and to learn the skills necessary to make Bouldering safe and fun. Safety and environmental considerations will be emphasized. Students need to be in good physical condition - this can't be emphasized enough. Students who are incapable of doing the basics on the climbing wall will not be allowed to continue in the class. This is for the student's own safety.

Campus: USU Eastern only

PE 1532 - Outdoor Survival
1 credit

Provides skills and knowledge in the fundamentals of outdoor survival and developing a wilderness ethic to allow for safe participation in wilderness activities.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1535 - Backpacking
1 credit

Elective course designed to introduce students to the fundamental skills and lifetime recreational opportunities of backpacking. May be an elective credit for all majors. As more and more people head into the backcountry for a wilderness experience, it becomes critical that they have the knowledge and skills required to safely and fully enjoy that wilderness and at the same time preserve it for others. Course also covers the philosophies, history, personal outdoor ethics of backpacking and career opportunities which are available. Teaching methods include lecture, videos, labs, and field work. Some student equipment will be required.

Campus: USU Eastern only

PE 1536 - Desert Backpacking
1 credit

Covers minimum-impact camping skills, outdoor cooking, basic first-aid, map and compass use, route finding, knot tying and rope handling. Students will backpack through the challenging sandstone and slick rock terrain and stop along the way to explore ruins and interesting geology. Covers the history of ancient inhabitants and the geological formations. As the course progresses and student skills and experience increase, instructors turn more and more responsibility over to student patrols. This gives students the opportunity to make the course challenging, to create a pace that is “doable” for everyone, to become friends and confidantes with other class members, and to have some fun. Students need to be in good physical condition. Safety protocols will be learned and adherence to those policies is mandatory. Course involves lecture, lab and field trips and a lab fee is required.

Campus: USU Eastern only

PE 1538 - Yurt Camping
1 credit

Provides skills and knowledge for safe winter camping using a yurt for shelter. Assists in the development of high outdoor ethics.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1543 - Wilderness First Aid
1 credit

Provides outdoor leaders with an introduction to wilderness first aid. Upon completion of course, students may receive a two-year wilderness first aid certification.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1550 - Mountain and Road Biking
1 credit

Introduction to road safety principles, various riding techniques, and cycle maintenance. Sections of road and mountain biking offered. Beginning and intermediate classes offered for both road and mountain biking.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1570 - National Outdoor Leadership School Course
3-18 credits

Provides students with the opportunity to earn USU credit for attending National Outdoor Leadership (NOLS) courses.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1580 - Canyoneering I
1 credit

Canyoneering is a term used to describe an adventure sport that combines hiking, wading, swimming, boulder hopping, rock climbing, and rappelling. Introduces students to the sport of canyoneering. Students will learn the skills necessary to make canyoneering safe and enjoyable. Safety and environmental considerations will be emphasized. Outings will include training at the Spring Canyon Climbing Area and outings to the world famous canyons of the San Rafael Swell. Students need to be in good physical condition. Safety protocols will be learned and adherence to those policies is mandatory. Course involves lecture, lab and field trips. A lab fee is required.

Campus: USU Eastern only

PE 1600 - Winter Exploration
1 credit

Provides skills and knowledge for safe winter camping using backpacking equipment. Assists in the development of high outdoor ethics.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1605 - Skiing
1 credit

Alpine ski instruction for all students. Offered for beginning, intermediate, and advanced levels. Focuses on knowledge, techniques, equipment, and safety necessary for participating in and enjoying alpine skiing, snowboarding, and telemark skiing.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1615 - Snowboarding
1 credit

Provides opportunity for students of all skill levels and experience to develop their riding techniques. Emphasizes versatility and efficiency in varied snow and terrain conditions.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1625 - Cross Country Skiing I
1 credit

Focuses on knowledge, techniques, equipment, and safety necessary to participate in and enjoy winter recreational activities, including cross country ski touring and snowshoeing.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

PE 1630 - Cross Country Skiing II
1 credit

Designed for students interested in developing a healthy lifestyle and an appreciation of the outdoors during the winter season. May be an elective for all majors. Provides for skill building in areas such as basic techniques, clothing, safety, equipment, awareness and group management. Students will gain general understanding
Students will also develop leadership skills. Class includes field work, labs, video tapes, and handouts. Completers will have knowledge of basic cross country touring and of career opportunities in the recreation field.

Prerequisite/Restriction: PE 1625

Campus: USU Eastern only

PE 1635 - Telemark Skiing
1 credit

Provides opportunity for students of all skill levels and experience to develop their telemark skiing skills. Emphasizes versatility and efficiency in varied snow and terrain conditions.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1655 - Snowshoeing
1 credit

Provides skills and knowledge of snowshoeing, with an emphasis on leave no trace techniques and development of safe winter activity skills.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1670 - Figure Skating Beginning
1 credit

Designed for students desiring to learn basic figure skating skills. Conditioning and skill development achieved through active participation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1671 - Figure Skating Intermediate
1 credit

Designed for students with basic figure skating skills who are interested in becoming more proficient skaters and learning new techniques and skills. Conditioning and skill development achieved through active participation.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1680 - Curling
1 credit

Designed for students desiring to learn the rules, skills, strategies, and etiquette of curling.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1700 - Dance
1 credit

Designed to help students enhance their basic skills and enjoyment of dance through the following forms: jazz, modern, ballet, ballroom, social, Latin, western swing, etc.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1701 - Introduction to Modern Dance
1 credit

Designed for individuals to gain basic dance experience through a wide variety of modern and post-modern dance techniques and choreographic exercises.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1702 - Modern Dance Intermediate
1 credit

Designed for individuals to expand their dance experience through a wide range of modern and post-modern dance techniques and choreographic exercises.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1710 - Western Swing
1 credit
Designed to help students enhance their basic skills and enjoyment of country western swing dance (e.g., western swing, two-step, waltz, cowboy cha-cha, line dancing, etc.).

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1711 - Western Swing Intermediate
1 credit

Designed for students who have basic western swing dancing skills and would like to develop and improve their techniques.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1720 - Social and Ballroom Dance
1 credit

Designed to provide knowledge and experience in ballroom and social dance.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1745 - Big Band Swing Level I
1 credit

Designed to provide students with basic knowledge and experience in Big Band Swing dance (e.g., lindy hop, boogie woogie, etc.).

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1746 - Big Band Swing Level II
1 credit

Designed for students with basic knowledge and experience in Big Band Swing dance (e.g., lindy hop, boogie woogie, etc.) to learn new techniques and enhance their skills.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1760 - Jazz Technique
1 credit

Designed for students who want to learn basic jazz technique. Includes center floor work, as well as across floor progressions. Improves strength and endurance levels through dancing.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1765 - Hip Hop Beginning/Intermediate
1 credit

Advanced, up-beat, energetic class designed to increase coordination, improve rhythm, and increase stamina.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1770 - Reiki Energy and Stress Relief
1 credit

Students will be introduced to the possibilities of Reiki Energy. Rei (produced Ray) represents “Universal” and Ki (pronounced Key) meaning “Life Force Energy,” thus Reiki represents “Universal Life Force Energy” which flows around and through all matter. Students will experience Reiki sessions, learn to give self treatments, be attuned to the Reiki energy, and learn how to share Reiki with others for the purpose of relaxation and health promotion. Students will be encouraged to participate in volunteer Reiki Share opportunities.

Campus: USU Eastern only

PE 1900 - Club Sports
1 credit

Designed for students desiring to participate in extramural competition against other colleges and universities in the following sports: ballroom dance, baseball, bowling, cycling, disc golf, hockey, men’s lacrosse, racquetball, rodeo, rugby, men’s soccer, ultimate frisbee, men’s volleyball, waterpolo, and wrestling.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring
PE 1905 - Aggiettes
1 credit

Designed for students who audition for and are accepted into the Aggiette dance program to represent Utah State University at sporting events.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PE 1906 - Eagle Dancers
1 credit

Designed for students who audition and are selected as members of the Dance Team. Emphasizes learning and rehearsing a variety of dance styles for performance at athletic events. Includes physical fitness, weight management, nutrition, choreography, sportsmanship, and intermediate to advanced level dance technique. Team members are required to take a weight management course each semester and Basic Ballet I or higher.

Prerequisite/Restriction: Audition
Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1910 - African Dance
1 credit

Introduces students to African dance using live drummers. Each class incorporates a series of warm-up exercises, followed by specific dances inspired by traditional African ceremonies and events, all accompanied by a traditional African drum ensemble.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PE 1915 - Cheer Squad
1 credit

Designed for students who audition for and are accepted into the Cheer Squad program to represent Utah State University at sporting events.

Repeatable for credit.

PE 2000 - Personal Instruction and Conditioning
1 credit

Designed for students and prospective members of varsity teams, as well as for the student/athlete requiring a personalized program.

Repeatable for credit.
Pass/Fail only.

PE 2010 - Varsity Cross Country
1 credit

Designed to meet the needs of varsity student/athletes in cross country.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

PE 2020 - Varsity Football
1 credit

Designed to meet the needs of varsity student/athletes in football.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

PE 2030 - Varsity Soccer
1 credit

Designed to meet the needs of varsity student/athletes in soccer.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

PE 2040 - Varsity Volleyball
1 credit

Designed to meet the needs of varsity student/athletes in volleyball.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

**PE 2050 - Varsity Indoor Track and Field**
1 credit

Designed to meet the needs of varsity student/athletes in indoor track and field.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

**PE 2060 - Varsity Basketball**
1 credit

Designed to meet the needs of varsity student/athletes in basketball.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

**PE 2070 - Varsity Gymnastics**
1 credit

Designed to meet the needs of varsity student/athletes in gymnastics.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

**PE 2080 - Varsity Track and Field**
1 credit

Designed to meet the needs of varsity student/athletes in track and field.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

**PE 2090 - Varsity Softball**
1 credit

Designed to meet the needs of varsity student/athletes in softball.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Spring

**PE 2100 - Varsity Golf**
1 credit

Designed to meet the needs of varsity student/athletes in golf.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

**PE 2110 - Varsity Tennis**
1 credit

Designed to meet the needs of varsity student/athletes in tennis.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

**PE 2120 - Varsity Weight Training**
1 credit

Designed for varsity athletes. Emphasizes strength development.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

**PE 2130 - Varsity Baseball**
1 credit

Open to all students. Emphasis will be on team play with students learning all the basic skills associated with the game of baseball. Includes demonstrations and application in pitching, hitting, base running and defensive skills.

Repeatable for credit
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

**PE 2988 - Special Problems**
1-3 credits

Individual work approved by the instructor. Time and credit to be arranged.

Campus: USU Eastern only
**PE 2999 - Workshop**  
1-3 credits  
Designed to meet the changing needs of the student in Physical Education.  
Campus: USU Eastern only

**PE 3000 - Dynamic Fitness**  
3 credits  
Designed to develop positive health practices in the areas of physical activity, diet, rest, and relaxation of living through classroom, laboratory, and activity experiences.  
Cross-listed as: PEP 3000.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

**PE 4000 - Lifeguard Training**  
2 credits  
Designed to prepare students as pool or nonsurf open water lifeguards. Presents knowledge and skills necessary for lifeguard functions. American Red Cross certification available.  
Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

**PE 4050 - Water Safety Instructor**  
2 credits  
Attention given to methods of teaching swimming and lifesaving. Presents knowledge and skills necessary for lifeguard functions. American Red Cross certification available.  
Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

**PE 4200 - Athletic Transition**  
2 credits  
Life skills course designed to meet the needs of fourth-year and fifth-year student athletes. Provides personal and career assistance.  
Semester(s) Traditionally Offered: Fall, Spring

---

**Physical Education Professional**

**PEP 1900 - Mental Strategies**  
2 credits  
Survey of the mental strategies and techniques used by pro athletes, star entertainers, and top executives to attain and maintain high performance levels in their fields and how those strategies and techniques can be applied in sports, business, etc.  
Campus: USU Eastern only

**PEP 2000 - Introduction and History of Physical Education**  
2 credits  
Acquaints P.E. students with four areas of physical education, including: the department, with respect to the University and the College of Education and Human Services; the history of physical education; the effects of sociology on physical education; and future employment opportunities in the fields of physical education.  
Semester(s) Traditionally Offered: Fall, Spring

**PEP 2020 - Introduction to Physical Therapy**  
2 credits  
Introduces prephysical therapy students to the discipline of physical therapy and familiarizes them with its associated spectrum of opportunities and responsibilities.  
Semester(s) Traditionally Offered: Fall

**PEP 2030 - Introduction to Fundamentals of Coaching**  
2 credits  
Designed for youth as well as secondary coaches. Class overviews, methods, teaching techniques, coaching philosophies and practical experiences in both team and individual sports. Includes lecture demonstration, media presentations, game scouting, field project and class journals. Course stresses motivation, selection, discipline, management and the technical aspects of coaching.  
Campus: USU Eastern only

**PEP 2050 - Sport Rules and Regulations of the Utah High School Athletic Association**  
1 credit
Knowledge of the rules and mechanics of officiating all Utah high school sports.

PEP 2100 - Skills 1 (Swimming, Volleyball, Football) 1 credit

Provides physical education majors and minors with the knowledge, skills, practice, and understanding of swimming, volleyball, and football needed for successful participation. Exposes students to a variety of teaching methods for these three sports.

Semester(s) Traditionally Offered: Fall, Spring

PEP 2200 - Skills 2 (Lifetime Activities) 1 credit

Provides physical education majors and minors with the knowledge, skills, practice, and understanding of lifetime activities needed for successful participation. Exposes students to a variety of teaching methods for these activities.

Semester(s) Traditionally Offered: Fall, Spring

PEP 2300 - Skills 3 (Softball, Basketball, Soccer) 1 credit

Provides physical education majors and minors with the knowledge, skills, practice, and understanding of softball, basketball, and soccer needed for successful participation. Exposes students to a variety of teaching methods for these three sports.

Semester(s) Traditionally Offered: Fall, Spring

PEP 2400 - Skills 4 (Tennis, Badminton, Track and Field) 1 credit

Provides physical education majors and minors with the knowledge, skills, practice, and understanding of tennis, badminton, and track and field needed for successful participation. Exposes students to a variety of teaching methods for these three sports.

Semester(s) Traditionally Offered: Fall, Spring

PEP 2500 - Skills 5 (Dance Activities) 1 credit

Focuses on fundamental motor skills, mixers, aerobic, line, folk, ballroom, and square dance. Provides opportunities to practice rhythms and movement, as well as opportunities to practice teaching. Designed for physical education majors and minors.

Semester(s) Traditionally Offered: Fall, Spring

PEP 2550 - PE for Young Children 2 credits

For students in early childhood education and elementary education. Combines the philosophy of physical education with the practical planning and implementing of physical education experiences for children in the primary and elementary settings.

Cross-listed as: FCHD 2030

Campus: USU Eastern only

PEP 2650 - Kinesiology 3 credits

Study of the anatomical, physiological, and mechanical principles applied to human movement.

Campus: USU Eastern only

PEP 2710 - Introduction to Athletic Training 3 credits

Introductory course in the field of athletic training for students interested in physical therapy, coaching, or training and physical education fields. Course includes lectures, demonstrations, and laboratory experience in basic first aid and CPR principles, injury prevention, evaluation and treatment of injuries with emphasis on protective taping.

Prerequisite/Restriction: First Aid training is recommended

Campus: USU Eastern only
PEP 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in physical education. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked and credit agreements.

Prerequisite/Restriction: Permission of instructor

Campus: USU Eastern only

PEP 3000 - Dynamic Fitness
3 credits

Designed to develop positive health practices in the areas of physical activity, diet, rest, and relaxation of living through classroom, laboratory, and activity experiences.

Cross-listed as: PE 3000.

Semester(s) Traditionally Offered: Fall, Spring

PEP 3050 - Physical Education in the Elementary School
3 credits

Prepares students to teach elementary physical education. Focuses on developmentally appropriate activities, locomotor and manipulative skills, fitness, games, rhythms, motor learning, and lesson planning. Students will teach physical education lessons in the elementary school.

Prerequisite/Restriction: Completion of 45 credits prior to registration.

Semester(s) Traditionally Offered: Fall, Spring

PEP 3100 - Athletic Injuries
3 credits

Care and prevention of common athletic injuries and standard taping techniques. Emphasizes recognition, first aid, and referral for these injuries. Taping techniques taught in a lab setting.

Semester(s) Traditionally Offered: Fall, Spring

PEP 3200 - Motor Learning and Technology in Skill Analysis (CI)
CI Communications Intensive

PEP 3250 - Anatomical Kinesiology
3 credits

Study of the anatomical bases of human movement. Laboratory provides application of principles.

Prerequisite/Restriction: PEP 2000 or PEP 2020

Semester(s) Traditionally Offered: Fall, Spring

PEP 3300 - Clinical Experience I
1 credit

Public school clinical experience in physical education.

Prerequisite/Restriction: Admission into Teacher Education program.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PEP 3550 - Strategies for Teaching Physical Education
3 credits

Designed to provide future physical education teachers with sound strategies and methods for teaching lifetime activities including fitness, as well as team, individual, and dual sports.

Prerequisite/Restriction: Enrollment limited to students who have been admitted to Teaching Emphasis of Human Movement Science Major or to Physical Education Coaching Minor.

Semester(s) Traditionally Offered: Fall

PEP 3600 - Elementary Physical Education Practicum
3 credits

Prepares teachers to teach elementary physical education as a support minor.
Prerequisite/Restriction: PEP 3050.

Semester(s) Traditionally Offered: Arranged

PEP 3650 - Movement Exploration for Elementary Teachers
2 credits

Covers creative movement and international folk dance. Experiences range from classroom management and curriculum development to large open-space activities and performance. Includes art and sound activities.

Semester(s) Traditionally Offered: Fall

PEP 4000 - Mental Aspects of Sports Performance
3 credits

Provides current knowledge of sport psychology. Applies this knowledge to teaching sports and coaching in public schools.

Cross-listed as: PSY 4000.

Semester(s) Traditionally Offered: Fall, Spring

PEP 4100 - Exercise Physiology
4 credits

Designed to expose students to theory and application of exercise physiology and principles of training and conditioning. Laboratory experience provides hands-on practicum for concepts taught in the classroom.

Prerequisite/Restriction: BIOL 2320, BIOL 2420; PEP 2000 or PEP 2020; and MATH 1050 or ACT score of 25 or higher.

Semester(s) Traditionally Offered: Fall, Spring

PEP 4150 - Advanced Care and Prevention of Athletic Injuries
3 credits

Final preparation and competency demonstration of knowledge and skills prior to taking the national certification exam for the Athletic Training credential.

Prerequisite/Restriction: PEP 3100, permission of instructor, and NATA2BOC certification eligibility.

Semester(s) Traditionally Offered: Fall

PEP 4200 - Biomechanics (QI)
QI Quantitative Intensive
4 credits

Understanding and application of human anatomical kinesiology and biomechanical principles fundamental to efficient human movement. In required concurrent one-hour lab, students obtain hands-on application of principles of anatomical kinesiology and biomechanics.

Prerequisite/Restriction: BIOL 2320, BIOL 2420; PEP 3250 and MATH 1050 or ACT score of 25 or higher.

Semester(s) Traditionally Offered: Fall, Spring

PEP 4250 - Advanced Cooperative Work Experience
1-10 credits

Cooperative education work experience offers student opportunity to work in related field work of the major.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 4300 - Clinical Experience II
1 credit

Public school clinical experience in physical education.

Prerequisite/Restriction: Admission into Teacher Education program.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

PEP 4350 - Administration and Classroom Management of Physical Education
2 credits

Designed for students to develop a philosophy toward the development and implementation of quality physical education programming. Effective classroom management techniques presented and discussed. Reviews budget, personnel, facilities management, programs, and activities.

Semester(s) Traditionally Offered: Fall
PEP 4400 - Evaluation in Physical Education (QI)  
QI Quantitative Intensive  
3 credits  
Focuses on the nature and use of a variety of tests in physical education. Practical application, interpretation, and use of test results are stressed.  
Prerequisite/Restriction: PEP 2000 or PEP 2020 and enrollment in major within Health, Physical Education and Recreation Department.  
Semester(s) Traditionally Offered: Fall, Spring  

PEP 4500 - Motivational Strategies for Physical Education and Coaching  
3 credits  
Addresses issues related to development of coaching philosophy, administration, and reviewing motivational strategies to develop and encourage positive behavior toward sport. Intrinsic motivation, goal setting, team building, and discipline discussed. Provides opportunity to work with local youth sports.  
Semester(s) Traditionally Offered: Spring  

PEP 4600 - Methods of Coaching Football and Soccer  
1 credit  
Outlines the methods, strategies, and techniques for coaching scholastic football and soccer. Emphasizes young player skill development and high school coaches’ administration of these sports.  
Prerequisite/Restriction: PEP 4500 (may be taken concurrently).  
Semester(s) Traditionally Offered: Arranged  

PEP 4700 - Methods of Coaching Volleyball, Track and Field  
1 credit  
Outlines the methods, strategies, and techniques for coaching scholastic volleyball, as well as track and field. Emphasizes young player skill development and high school coaches’ administration of these sports.  
Prerequisite/Restriction: PEP 4500 (may be taken concurrently).  

PEP 4800 - Methods of Coaching Basketball, Baseball, and Softball  
1 credit  
Outlines methods, strategies, and techniques of coaching scholastic basketball, baseball, and softball. Emphasizes young player skill development and high school coaches’ administration of these sports.  
Prerequisite/Restriction: PEP 4500 (may be taken concurrently).  

PEP 4850 - Methods of Teaching and Coaching Women’s Gymnastics  
3 credits  
Instructs students in required coaching methods for women’s gymnastics from the beginning to advanced levels. Also includes section on judging.  
Semester(s) Traditionally Offered: Arranged  

PEP 4900 - Methods of Physical Education (CI)  
CI Communications Intensive  
3 credits  
Designed to prepare physical education majors and minors to teach physical education in the schools. Emphasizes planning, teaching, strategies, and methods. Admission to the Teacher Education program is required.  
Prerequisite/Restriction: PEP 3550.  
Corequisite: PEP 3300 or PEP 4300.  
Semester(s) Traditionally Offered: Fall, Spring  

PEP 4950 - Honors Senior Thesis  
1-6 credits  
Culminating experience within the department for honors students. Student works closely with faculty mentor in an extensive project in the student’s area of interest.  
Semester(s) Traditionally Offered: Fall, Spring
PEP 5050 - Psychological Aspects of Sports Performance
3 credits
Psychological theory and principles applied to sports. Includes motivational techniques, psychological evaluation, stress and anxiety in sports, and personality and sports performance.
Cross-listed as: PEP 6050 and PSY 5050/PSY 6050.
Semester(s) Traditionally Offered: Arranged

PEP 5070 - Sport Sociology
3 credits
Develops understanding of the social significance of sport. Applies the sociological perspective to a variety of contemporary issues, enabling students to better understand how sport affects and reflects American culture.
Semester(s) Traditionally Offered: Spring

PEP 5100 - Fitness Assessment and Exercise Programs
4 credits
Application of physiological principles, assessment techniques, and exercise prescription for developing quality fitness programs that impact health. Students gain experience in a personal fitness program and in the use and interpretation of fitness tests.
Prerequisite/Restriction: PEP 4100.
Semester(s) Traditionally Offered: Fall, Spring

PEP 5430 - The History and Philosophy of Physical Education (CI)
CI Communications Intensive
3 credits
Designed to familiarize physical education majors (or nonmajors) with history of physical education and sport, as well as philosophical influences which have contributed to development of contemporary physical education and sport. Considers historical development of yesterday's pastimes into today's complex, institutionalized forms of sport and physical education.
Semester(s) Traditionally Offered: Fall

PEP 5000 - Student Teaching Seminar
2 credits
Capstone seminar focused upon student teaching issues, professional development, and principles of effective instruction.
Prerequisite/Restriction: PEP 4900, completion of Level I and II field experiences.
Semester(s) Traditionally Offered: Fall, Spring

PEP 5560 - Practicum in Improving School System Programs
1-4 credits
In-service seminar for experienced teachers, emphasizing improvement in instruction.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 5630 - Student Teaching in Secondary Schools
10 credits
A 13-week culminating experience in which students assume full-time teaching responsibilities under the direction of cooperating teachers in physical education.
Prerequisite/Restriction: PEP 4900, completion of Level I and Level II field experiences.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PEP 5700 - Special Topics in Physical Education
1-6 credits
In-depth review and discussion of special topics in physical education.
Cross-listed as: PEP 6700.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 5900 - Independent Study
1-3 credits
Provides opportunity for undergraduate or graduate students to participate in independent inquiry under guidance of a professor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 5910 - Independent Research
1-3 credits

Allows undergraduate students to pursue personal research interest by formalizing an independent project under the guidance of a professor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6000 - Administration of Athletics
3 credits

Prepares students to organize and administer interscholastic and intercollegiate sports at the public school or university level. Consideration is given to both the challenges and standards associated with such programs.

Semester(s) Traditionally Offered: Arranged

PEP 6010 - Leadership in Health, Physical Education, and Recreation
3 credits

Group approach to improvement and innovation in leadership and supervisory skills.

Semester(s) Traditionally Offered: Arranged

PEP 6050 - Psychological Aspects of Sports Performance
3 credits

Psychological theory and principles applied to sports. Includes motivational techniques, psychological evaluation, stress and anxiety in sports, and personality and sports performance.

Cross-listed as: PEP 5050 and PSY 6050/PSY 5050.

Semester(s) Traditionally Offered: Arranged

PEP 6070 - Sport in Society
3 credits

Introduces students to complex role and social significance of sport in contemporary society. Familiarizes students with aims, scope, and potential contributions of sport in society.

Semester(s) Traditionally Offered: Spring

PEP 6200 - Biophysical Aspects of Physical Activity
3 credits

This course reviews the fundamental connections between physical activity, functional anatomy, biomechanics, and exercise physiology. Through these perspectives, the relationships between physical activity and health, anatomical structure and human movement, and the physiological adaptations to enhance exercise performance will be explored.

Semester(s) Traditionally Offered: Spring

PEP 6250 - Graduate Cooperative Work Experience
1-10 credits

Professional level of educational work experience in a cooperative education position for graduate students.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

PEP 6290 - Corporate Wellness Marketing
3 credits

Reviews history of corporate fitness in America, as well as common organizational and management practices. Emphasizes marketing practices promoting individual and business involvement.

Semester(s) Traditionally Offered: Spring

PEP 6400 - Advanced Exercise Physiology
4 credits

Detailed examination of exercise physiology, such as advanced study of metabolism, cardiorespiratory responses, and body composition. Scientific process emphasized with data collections and writing.

Semester(s) Traditionally Offered: Fall

PEP 6420 - Curriculum in Physical Education
3 credits

Curriculum development studied in terms of student needs in relation to present-day society. Includes current practices and trends in the area of curriculum.
Semester(s) Traditionally Offered: Arranged
PEP 6430 - History and Philosophy of Physical Education and Sport
3 credits

History of physical education; philosophical influences which have contributed to contemporary physical education; and methods of educational instruction using the primary philosophical positions.

Semester(s) Traditionally Offered: Fall
PEP 6450 - ECG Interpretation and Advanced Exercise Prescription
3 credits

Electrocardiogram (ECG) interpretation relevant to cardiac rehabilitation and stress testing. Exercise prescription for specific populations.

Prerequisite/Restriction: PEP 5100 and PEP 6400.

Semester(s) Traditionally Offered: Spring
PEP 6500 - Practicum in Corporate Wellness
1-10 credits

Experiences designed for the practical implementation of coursework in a corporate wellness, fitness industry, cardiac rehabilitation, or other related setting.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
PEP 6540 - Neuromuscular Adaptations
3 credits

Interaction of neuromuscular systems with mechanical properties of the human body and environment. Emphasizes mechanisms influencing human flexibility, strength, and adaptive responses to overload.

Semester(s) Traditionally Offered: Fall
PEP 6550 - Athletic Training Clinical Orthopedics I
3 credits

Provides graduate student athletic trainers with opportunity to learn sports medicine from a sports medicine physician’s perspective. Concepts provide real-life examples.

Semester(s) Traditionally Offered: Spring
PEP 6570 - Athletic Training Clinical Orthopedics III
3 credits

Provides students in athletic training services with an opportunity to understand the role of the athletic trainer, in conjunction with the team physician, in providing care, evaluation, and treatment for sport-related injuries.

Semester(s) Traditionally Offered: Fall
PEP 6580 - Athletic Training Clinical Orthopedics IV
3 credits

Provides students in athletic training services with an opportunity to understand the role of the athletic trainer, in conjunction with the team physician, in providing care, evaluation, and treatment for sport-related injuries.

Semester(s) Traditionally Offered: Spring
PEP 6690 - Analysis of Teaching Physical Education
3 credits

Designed to provide graduate students with practicum experiences in the analysis of physical education, via micro teaching and observation of physical education classes.

Semester(s) Traditionally Offered: Arranged
PEP 6700 - Special Topics in Physical Education
1-6 credits

In-depth review and discussion of special topics in physical education.

Cross-listed as: PEP 5700.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6730 - Worksite Guidance and Counseling
3 credits

Provides cardiac rehabilitation/corporate wellness
graduate students with basic understanding of exercise
and health psychology.

Semester(s) Traditionally Offered: Arranged

PEP 6800 - Advanced Biomechanics
3 credits

Instrumentation, theory, and methods for biomechanical
measurement of kinematic and kinetic characteristics of
human motion.

Prerequisite/Restriction: PEP 4200.

Semester(s) Traditionally Offered: Spring

PEP 6810 - Research Methods in Health Sciences
3 credits

Explores basic to advanced concepts contained in
research and statistical design, as applicable to health
sciences.

Semester(s) Traditionally Offered: Fall

PEP 6820 - Wellness Certification and Technology
2 credits

Provides instruction and experience in wellness
technology and wellness certification. Students learn use
of current technology in the fitness industry and obtain
certain wellness certifications.

Semester(s) Traditionally Offered: Arranged

PEP 6830 - Motor Learning
3 credits

Comprehensive review and analysis of research in the
area of motor skills which bears upon the teaching of
physical education activities.

Semester(s) Traditionally Offered: Arranged

PEP 6900 - Independent Study
1-3 credits

Student conducts independent projects under direction
of one or more professors. Provides student with
opportunity for individualized study.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6910 - Independent Research
1-3 credits

Allows graduate students to pursue personal research
interests by formalizing an independent project under
the guidance of a graduate professor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6960 - Master's Project
3 credits

Allows students opportunity to develop creative and
applicable educational project.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6970 - Thesis
1-9 credits

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 6990 - Continuing Graduate Advisement
1-9 credits

Provides graduate students with continued support and
advisement. Usually taken following completion of all
coursework required for the degree.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PEP 7550 - Practicum in the Evaluation of Instruction
1-6 credits

Field-based experience involving supervision of student
teachers in Department of Health, Physical Education and
Recreation.

Semester(s) Traditionally Offered: Arranged

Physics
PHYS 1010 - Elementary Physics (BPS)
BPS Breadth Physical Science
3 credits
Introduces the basic principles of classical physics, such as the scientific method, conservation laws, properties of matter and how these ideas have shaped the world in which we live. Aimed at non-science majors to expose them to the physics all around them. With the lab course PHYS 1015, the course can be taken as a Physical Science General Education course for those students that need a lab science course. Additionally, this course is recommended for students planning on taking PHYS 2010 or PHYS 2210. Course will be taught using lecture, video, in class experiments and class discussion.

Prerequisite/Restriction: MATH 1010 competency

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

PHYS 1015 - Elementary Physics Laboratory
1 credit

PHYS 1010 must be taken concurrently with PHYS 1015, but PHYS 1015 is optional.

Corequisite: PHYS 1010

Campus: USU Eastern only

PHYS 1020 - Energy (BPS)
BPS Breadth Physical Sciences
3 credits
Study of energy resources, utilization, conversion, and conservation, including energy balance and flow in biological and geological systems. Social impacts of energy resource development, including public policy and planning.

Prerequisite/Restriction: At least one university-level mathematics or statistics course

PHYS 1040 - Introductory Astronomy (BPS)
BPS Breadth Physical Sciences
3 credits
Exploration of solar system and universe. Laws of motion, fundamental interactions, structure of matter, electromagnetic radiation, and conceptual models of celestial motions. Conceptual and quantitative homework problems and exams, along with writing assignments and observation reports, are required. Facility with high school mathematics is expected.

PHYS 1050 - Technical Physics
3 credits
Study of laws of Physics as might be encountered in trade and technical fields. Subjects studied will include basic technical mathematics, measurements, forces, vectors, equilibrium, friction, torque, rotational equilibrium, uniformly accelerated motion, acceleration, energy, momentum, rotational motion, simple machines, properties of solids and properties of fluids. Designed for the students in technical areas such as welding, mining, automotive, electronics, machine technology, etc.

Campus: USU Eastern only

PHYS 1080 - Intelligent Life in the Universe (BPS)
BPS Breadth Physical Sciences
3 credits
Study of the likelihood of extraterrestrial intelligence and its probable locations. Nature and evolution of life on Earth, as well as stellar evolution and planetary environments. Discussion of psychology of UFO phenomena.

Prerequisite/Restriction: At least one university-level mathematics or statistics course

PHYS 1100 - Great Ideas in Physics (BPS)
BPS Breadth Physical Sciences
3 credits
Descriptive introduction to the principles underlying contemporary physics. Great ideas will include relativity and quantum mechanics and such consequences and applications as the twin paradox, black holes, nuclear energy, magnetic imaging, lasers, superconductivity, and the paradox of Schrodinger's cat. Facility with high school algebra is expected.

PHYS 1200 - Introduction to Physics by Hands-on Exploration (BPS)
BPS Breadth Physical Sciences
4 credits
Overview of physics concepts important in today's society. Explores structure of matter, electricity and magnetism, light and sound, forces, energy, momentum,
thermodynamics, and modern physics. Required laboratory emphasizes hands-on, inquiry-based activities.

PHYS 1800 - Physics of Technology (BPS)
BPS Breadth Physical Sciences
4 credits

Overview of the classical physics on which industrial technology is based. Elements of kinematics, forces, energy, momentum, thermodynamics, electric and magnetic fields, waves, and optics. Required laboratory.

Prerequisite/Restriction: MATH 1050 and MATH 1060.

PHYS 2010 - General Physics I
4 credits

An algebra based physics course on the study of motion and heat including 1-D and 2-D kinematics, Newton’s three laws of motion, rotations, laws of gravitation, periodic motion, and mechanical waves including sound. Heat topics will include calorimetry, the three laws of Thermodynamics, the meaning of temperature, and heat as a process or transfer of energy. Class will be taught using lectures, demonstration, videos, and group problem solving. Students will be required to explain their homework solutions on the board to the entire class. Can be used by science majors to complete the Physical Science General Education requirement.

Prerequisite/Restriction: PHYS 2010 and PHYS 2015

Corequisite: PHYS 2025

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

PHYS 2025 - General Physics Lab II
1 credit

Intended to supplement the materials covered in PHYS 2020 and help students visualize and experience the material being covered in lecture. Taught using a combination of traditional labs and computer based discovery labs.

Corequisite: PHYS 2020

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring

PHYS 2110 - General Physics - Life Sciences I
4 credits

Study of kinematics and dynamics of particles and systems of particles. Introduction to Newton’s Laws of motion, momentum and energy conservation, rotations, and thermodynamics, with applications in biology and biotechnology. Required recitation and lab.

Prerequisite/Restriction: MATH 1100 or MATH 1210.
Semester(s) Traditionally Offered: Fall

PHYS 2120 - General Physics - Life Sciences II (BPS)
BPS Breadth Physical Sciences
4 credits

Introduction to electromagnetism, optics, and quantum phenomena—including the microscopic structure of matter, with applications in biology and biotechnology. Required recitation and lab.

Prerequisite/Restriction: MATH 1100 or MATH 1210, PHYS 2110.

PHYS 2200 - Elements of Mechanics
2 credits

Calculus-based introduction to particle mechanics. Kinematics, Newton’s laws of motion, momentum, work and energy, and angular momentum. Required recitation and lab. Prerequisite: MATH 1210.

PHYS 2210 - Physics for Scientists and Engineers I (QI)
QI Quantitative Intensive
4 credits

The study of motion and thermal physics including vectors, kinematics, forces, Newton’s three laws of motion, circular motion and rotations, harmonic motion, momentum, energy and work, gravity, fluids, and thermodynamics. Lecture and required recitation.

Prerequisite/Restriction: MATH 1210.

PHYS 2215 - Physics for Scientists and Engineers Lab I
1 credit

Computer assisted laboratory investigations of mechanics and thermal physics principles taught in PHYS 2210.

Corequisite: PHYS 2210 (may be taken concurrently)

PHYS 2220 - Physics for Scientists and Engineers II (BPS/QI)
BPS/QI Breadth Physical Sciences and Quantitative Intensive
4 credits

The study of waves, electricity and magnetism, optics, and quantum phenomena. Topics include electric and magnetic forces and fields, electric potential, Maxwell’s equations, DC and AC circuits, geometrical optics, wave nature of light, special relativity, and atomic, molecular, nuclear phenomena. Lecture and required recitation.

Prerequisite/Restriction: MATH 1210; PHYS 2200 or PHYS 2210, or a minimum score of 4 or higher on the AP Physics B exam, or a minimum score of 3 on the AP Physics C (Mechanics) exam.

PHYS 2225 - Physics for Scientists and Engineers Lab II
1 credit

Computer assisted laboratory investigations of wave, electricity and magnetism, optics and quantum physics principles taught in PHYS 2220.

Prerequisite/Restriction: PHYS 2220 (may be taken concurrently)

PHYS 2400 - Introductory Topics in Physics
1-3 credits

Explores issues in contemporary physics at an introductory level.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

PHYS 2500 - Introduction to Computer Methods in Physics
2 credits

Topics include: (1) use of numerical, graphical, and symbolic manipulation software to solve physics problems; and (2) interfacing computers to instrumentation for control and data acquisition.

Prerequisite/Restriction: PHYS 1800 or PHYS 2120 (may be taken concurrently) or PHYS 2220 (may be taken concurrently).

PHYS 2700 - Science Excursion
1 credit

Campus: USU Eastern only

PHYS 2710 - Introductory Modern Physics
3 credits

Overview of the origins, principles, and practical
applications of quantum mechanics. Atomic structure and periodic table, molecular bonding, solids, electronic properties of metals and semiconductors, and superconductivity.

Prerequisite/Restriction: MATH 1220, PHYS 2120 or PHYS 2220.

PHYS 2977 - Cooperative Education
1-3 credits

Provides supervised on-the-job training in physics. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, and credit agreements.

Prerequisite/Restriction: Permission of instructor.

Campus: USU Eastern only

PHYS 2988 - Special Problems
1-3 credits

Individual work approved by the instructor. Time and credit to be arranged.

Campus: USU Eastern only

PHYS 3010 - Space Exploration from Earth to the Solar System (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Comparative introduction to the Earth and other planets in our solar system, including geological structure and atmosphere. Emphasis on space exploration methods, including spacecraft and detection instrumentation. Examines latest results of Mars missions, Jupiter and Saturn exploration, etc.

Prerequisite/Restriction: Completion of University Studies Quantitative Literacy (QL) and Breadth Physical Sciences (BPS) requirements.

PHYS 3020 - Great Scientists (DSC)
DSC Depth Life and Physical Sciences
3 credits

Lives and work of men and women responsible for scientific revolution: Maxwell (loved children), Einstein (despised authority), Curie (suffered discrimination against women), Schrodinger (fled from Hitler), Watson and Crick (the DNA story), Feynman (lock picker), Rubin (as a young girl built her own telescope), and others.

Prerequisite/Restriction: Fulfillment of University Studies Breadth Physical Sciences (BPS) or Breadth Life Sciences (BLS) requirement.

Page: 1 <- Back 10 .. 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 .. Forward 10 -> 55

Physics

PHYS 3030 - The Universe (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Study of properties and origin of the universe, based on Einstein's theory of gravity. Topics include curved space-time; black holes, white holes, and worm holes; the big bang; multiple universes; and the births of stars, galaxies, heavy atoms, and planets.

Prerequisite/Restriction: Completion of University Studies Quantitative Literacy (QL) requirement and PHYS 1040.

PHYS 3040 - Space Weather–Dangers to the High-Tech World (QI)
QI Quantitative Intensive
3 credits

Space weather can be as destructive to high technology as ordinary weather is to property and crops. Examines increasing vulnerability of society to events in space resulting from changes on the Sun and from human activity. Explores how we learn about space weather with satellites, radars, lidars, and numerical models.

Prerequisite/Restriction: Completion of University Studies Quantitative Literacy (QL) and Breadth Physical Sciences (BPS) requirements.

PHYS 3150 - Energy in the Twenty-first Century (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits
Provides science-based overview of energy resources. Compares and analyzes energy budgets and energy resources, including solar energy, fossil fuels, nuclear energy, and renewable sources. For the different energy sources, contrasts carbon emissions and potential impacts on climate change.

Prerequisite/Restriction: USU 1360 and Quantitative Literacy (QL) course or equivalent.

Cross-listed as: GEO 3150

Semester(s) Traditionally Offered: Fall

PHYS 3500 - Topics in Physics
1-3 credits

Introduces and explores issues in contemporary physics at an intermediate undergraduate level. Focuses on phenomena and experimental methods.

Prerequisite/Restriction: PHYS 2710 and permission of instructor.

Repeatable for credit.

PHYS 3550 - Intermediate Classical Mechanics
3 credits

Newton's laws of motion, work and energy, systems of particles, Lagrange's and Hamilton's equations, accelerated reference frames, central force problem, harmonic oscillations, and rigid body rotations.

Prerequisite/Restriction: PHYS 2710 (may be taken concurrently); MATH 2210; MATH 2250 (may be taken concurrently).

PHYS 3600 - Electromagnetism I
3 credits

Electrostatics, electric potential, current, magnetostatics, induction, AC circuits, Maxwell's equations, and electromagnetic waves.

Prerequisite/Restriction: PHYS 2710, MATH 2210; MATH 2250 (may be taken concurrently).

PHYS 3700 - Thermal Physics
3 credits


Prerequisite/Restriction: PHYS 2710.

PHYS 3710 - Intermediate Modern Physics
3 credits

Introduction to the principles and applications of special and general relativity. Space-time, relativistic kinematics and dynamics, gravity and geometry, black holes, Big Bang, nuclei, radioactivity, and nuclear reactions. Interconnections between modern cosmology and elementary particle physics.

Prerequisite/Restriction: MATH 1220, PHYS 2120 or PHYS 2220.

PHYS 3750 - Foundations of Wave Phenomena
3 credits

Survey of wave phenomena in physics, with emphasis on application of mathematical techniques to the wave equation, Schrodinger equation, and Maxwell equations.

Prerequisite/Restriction: PHYS 2710, MATH 2210, MATH 2250.

PHYS 3870 - Intermediate Physics Laboratory (CI)
CI Communications Intensive
2 credits

Modern experimental techniques, data and error analysis, experimental design, and communication skills. Exercises complement upper-level theory courses, and include some experiments of historical importance.

Prerequisite/Restriction: PHYS 2500, PHYS 2710 (may be taken concurrently).

PHYS 3880 - Advanced Physics Laboratory (CI)
CI Communications Intensive
2 credits

Modern experimental physics techniques, with emphasis on student designed and implemented experimental projects.

Prerequisite/Restriction: PHYS 3870.
PHYS 3900 - Projects in Physics
1-3 credits

Individual study pursued under direction of staff member.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

PHYS 4010 - Chaos Under Control (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Introduction to principles and applications of new sciences of fractals, chaos, and complexity. Importance of describing physical, geological, biological, and natural resource structures with fractals. Practical benefits of understanding and controlling erratic behavior in physical and living systems. Technological consequences of self-organized, adaptive behavior.

Prerequisite/Restriction: Completion of University Studies Quantitative Literacy (QL) and Breadth Physical Sciences (BPS) requirements.

PHYS 4020 - Science, Art, and Music (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Explores how science constrains production and appreciation of visual and auditory art. Relevance to art of: physics of sound and light, perspective and observer in relativity and quantum mechanics, symmetry, fractals, chaos, complex adaptive behavior, and self-organization.

Prerequisite/Restriction: Quantitative Literacy (QL), and Physical or Life Sciences breadth (BPS or BLS) requirements

PHYS 4250 - Cooperative Work Experience (CI)
CI Communications Intensive
1-6 credits

Planned work experience in industry or national laboratories. A detailed plan and the purpose of the experience must have prior approval. A written report is required.

Prerequisite/Restriction: PHYS 2710.

Repeatable for credit.

PHYS 4600 - Electromagnetism II
3 credits

Potential formulations of electrodynamics, energy and momentum, waves and boundary conditions, waves in dielectrics and conductors, guided waves, dipole radiation, and relativistic electrodynamics.

Prerequisite/Restriction: PHYS 3550, PHYS 3600, PHYS 3750.

PHYS 4650 - Optics I
3 credits

Topics include mathematics of wave motion, electromagnetic theory of light, light propagation, geometrical optics, and superposition of waves. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.

Prerequisite/Restriction: PHYS 2710, MATH 2210, MATH 2250; or ECE 3870.

Cross-listed as: PHYS 6650 and ECE 4650/ECE 6650.

PHYS 4680 - Optics II
3 credits

Topics include polarization, interference, diffraction, Fourier optics, coherence theory, and the quantum nature of light. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.

Prerequisite/Restriction: PHYS 4650/ECE 4650 or PHYS 6650/ECE 6650.

Cross-listed as: PHYS 6680 and ECE 4680/ECE 6680.

PHYS 4700 - Quantum Mechanics I
3 credits

Principles of quantum mechanics, operators in Hilbert space, matrix mechanics, angular momentum, spin, perturbation theory, and applications.

Prerequisite/Restriction: PHYS 3550, PHYS 3600, PHYS 3750.
PHYS 4710 - Quantum Mechanics II  
3 credits  
Continuation of PHYS 4700.  
Prerequisite/Restriction: PHYS 4700.

PHYS 4900 - Research in Physics (CI)  
CI Communications Intensive  
1-3 credits  

Make arrangements with the Physics Department's undergraduate research advisor.  
Prerequisite/Restriction: PHYS 2710.  
Repeatable for credit.

PHYS 5340 - Methods of Theoretical Physics I  
3 credits  
Physics applications of vector calculus and differential geometry, group theory, infinite series, complex analysis, differential equations, Sturm-Liouville theory, orthogonal functions, integral equations, and the calculus of variations.

PHYS 5350 - Methods of Theoretical Physics II  
3 credits  
Continuation of PHYS 5340.  
Prerequisite/Restriction: PHYS 5340.

PHYS 5500 - Intermediate Topics in Physics  
1-3 credits  
Explores issues in contemporary physics at the advanced undergraduate and beginning graduate level.  
Repeatable for credit.

PHYS 5800 - Physics Colloquium  
1 credit  
A series of invited lectures on specialized topics in physics and related subjects.  
Repeatable for credit.  
Pass/Fail only.

PHYS 6010 - Classical Mechanics I  
3 credits  
Lagrange's equations, Hamilton's principle, Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, central forces, noninertial reference frames, rigid body motion, small oscillations, relativistic mechanics, canonical perturbation theory, continuum mechanics.  
Prerequisite/Restriction: PHYS 4550 or equivalent.

PHYS 6020 - Classical Mechanics II  
3 credits  
Continuation of PHYS 6010.  
Prerequisite/Restriction: PHYS 6010.

PHYS 6110 - Electrodynamics I  
3 credits  
Fundamental laws of electrostatics and magnetostatics; dielectric media, Maxwell's equations, time varying fields, and electromagnetic waves. Waveguides and radiation by moving charges.  
Prerequisite/Restriction: PHYS 4600 or equivalent.

PHYS 6120 - Electrodynamics II  
1-9 credits  
Continuation of PHYS 6110.  
Prerequisite/Restriction: PHYS 6110.

PHYS 6210 - Quantum Mechanics I  
3 credits  
Advanced quantum mechanics stressing the formalism of states and operators in the study of quantum dynamics, angular momentum, symmetry and group theory, perturbation theory and scattering.  
Prerequisite/Restriction: PHYS 4710 or equivalent.

PHYS 6220 - Quantum Mechanics II  
3 credits  
Continuation of PHYS 6210.  
Prerequisite/Restriction: PHYS 6210.

PHYS 6240 - Space Environment and Engineering  
3 credits
Study of space environment and models used for engineering analysis. Topics include considerations for engineering in the space environment such as plasma interactions, debris, chemical reactions, radiation effects, and thermal issues.

Prerequisite/Restriction: MATH 2270, MATH 2280.

Corequisite: ECE 5230.

Cross-listed as: ECE 6240.

PHYS 6250 - Cooperative Work Experience
1-6 credits

Allows students to register for credit when working in a physics-related position.

Prerequisite/Restriction: Permission of department head prior to enrollment.

Repeatable for credit.

PHYS 6310 - Solar-terrestrial Physics I
3 credits

Study of solar-terrestrial physics, including planetary magnetic fields, the interaction of the sun with planetary properties (magnetic fields and atmospheres), and an overview of ionospheric measurement techniques. Study of the upper atmosphere and the physics occurring in each of the layers and zones, including the equatorial and polar ionosphere.

Prerequisite/Restriction: PHYS 4600 or equivalent

PHYS 6320 - Solar-terrestrial Physics II
3 credits

Continuation of PHYS 6310.

Prerequisite/Restriction: PHYS 6310.

PHYS 6330 - Plasma Physics I
3 credits

Characteristics of the plasma state and plasma generation; velocity distribution functions, collisions and Boltzmann’s equation; wave modes in a plasma; transport theory; plasma devices.

Prerequisite/Restriction: PHYS 4600 or equivalent.

PHYS 6340 - Plasma Physics II
3 credits

Continuation of PHYS 6330.

Prerequisite/Restriction: PHYS 6330.

PHYS 6410 - Statistical Mechanics I
3 credits


PHYS 6420 - Statistical Mechanics II
3 credits

Continuation of PHYS 6410.

Prerequisite/Restriction: PHYS 6410.

PHYS 6530 - Solid State Physics I
3 credits

Development of the modern theory of the solid state. Emphasis placed on understanding the bulk properties of the solids, including crystal structure, cohesive properties, electronic structure, and lattice dynamics. Explores response to added stimuli, such as electric, magnetic, and optical fields.

Prerequisite/Restriction: PHYS 4600 and PHYS 4710; PHYS 6410 (can be taken concurrently).

PHYS 6540 - Solid State Physics II
3 credits

Continuation of PHYS 6530.

Prerequisite/Restriction: PHYS 6530.

PHYS 6550 - Physics of Materials I
3 credits

Application of microscopic (quantum) and macroscopic (classical) physics to study materials properties (e.g., bonding, structure, atomic dynamics, electrical, magnetic, thermal, optical), characterization methods, and a survey of materials.
Prerequisite/Restriction: PHYS 3700, PHYS 4710.

PHYS 6560 - Physics of Materials II
3 credits
Continuation of PHYS 6550.
Prerequisite/Restriction: PHYS 6550.

PHYS 6650 - Optics I
3 credits
Topics include mathematics of wave motion, electromagnetic theory of light, light propagation, geometrical optics, and superposition of waves. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.
Prerequisite/Restriction: PHYS 2710, MATH 2210, MATH 2250; or ECE 3870.
Cross-listed as: PHYS 4650 and ECE 6650/ECE 4650.

PHYS 6680 - Optics II
3 credits
Topics include polarization, interference, diffraction, Fourier optics, coherence theory, and the quantum nature of light. For graduate (6000-level) credit, additional reading, recitation, use of optical-design software, and/or writing will be required.
Prerequisite/Restriction: PHYS 4650/ECE 4650 or PHYS 6650/ECE 6650.
Cross-listed as: PHYS 4680 and ECE 6680/ECE 4680.

PHYS 6910 - Relativity I
3 credits
Foundations of spacetime physics. Survey of the basics of special and general relativity, including kinematics, mechanics, and electrodynamics in flat spacetime, the description of curved spacetime, and the Einstein equations. Exact solutions, applications, tests, and the mathematical techniques of general relativity.
Prerequisite/Restriction: PHYS 6020, PHYS 6120.

PHYS 6920 - Relativity II
3 credits
Continuation of PHYS 6910.
Prerequisite/Restriction: PHYS 6910.

PHYS 6930 - Quantum Field Theory I
3 credits
Detailed study of the relativistic quantum description of scalar, spinor, and vector fields in spacetime. Topics include gauge theories, canonical and path integral quantization, and interactions.
Prerequisite/Restriction: PHYS 4650/ECE 4650 or PHYS 6650/ECE 6650.
Cross-listed as: PHYS 4680 and ECE 6680/ECE 4680.

PHYS 6940 - Quantum Field Theory II
3 credits
Continuation of PHYS 6930.
Prerequisite/Restriction: PHYS 6930.

PHYS 6970 - Thesis Research
1-10 credits
Advanced research under guidance of one or more faculty members.
Repeatable for credit.
Pass/Fail only.

PHYS 6990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.

PHYS 7210 - Spacecraft Instrumentation
3 credits
Theory, engineering, and data reduction techniques of spacecraft instrumentation for space science and spacecraft systems.
Prerequisite/Restriction: PHYS 6240/ECE 6240.
Corequisite: ECE 7210.

PHYS 7500 - Advanced Topics in Physics (Topic)
3 credits
Explores issues in contemporary physics at the advanced graduate level.
Repeatable for credit.
PHYS 7510 - Seminar
1-3 credits
Repeatable for credit.
PHYS 7970 - Dissertation Research
1-15 credits
Repeatable for credit.
Pass/Fail only.
PHYS 7990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.

Plants, Soils, and Climate
PSC 1050 - Plants, Soils, and Climate Orientation
1-2 credits

Orientation to the teaching, research, and extension programs of the department, and to career opportunities. Optional orientation to a specific major: Horticulture, Crop Science, or Environmental Soil/Water Science.

Semester(s) Traditionally Offered: Fall

PSC 1800 - Introduction to Horticulture (BLS)
BLS Breadth Life Sciences
3 credits

Introduction to production of nursery, greenhouse, fruit, and vegetable crops. Explores residential and commercial landscape construction and management. Students also learn about interior plants, arboriculture, turf science, landscape plant materials, and home gardening.

Semester(s) Traditionally Offered: Fall

PSC 2000 - The Atmosphere and Weather (BPS)
BPS Breadth Physical Sciences
3 credits

Survey of the processes governing the behavior of the atmosphere and the phenomenon of weather. Basic physical principles of radiation, energy, evaporation, and heat transport are introduced and connected to atmospheric circulation and weather.

Semester(s) Traditionally Offered: Fall

PSC 2010 - Soils, Waters, and the Environment (BPS)
BPS Breadth Physical Sciences
3 credits

Introduction to principles of physical and biological science. Discussion of current environmental topics, focusing on soil and the waters that contact the soil. Topics include water quality, global climate change, deforestation, soil conservation, and agricultural sustainability.

Semester(s) Traditionally Offered: Spring

PSC 2200 - Pest Management Principles and Practices
3 credits

Overview of pest control considerations, procedures, and principles. Topics include integrated pest management, organic and chemical pest control, environmental considerations, safety, life cycles of pests, and commercial pesticide licensing.

Semester(s) Traditionally Offered: Spring

PSC 2250 - Occupational Experience in Agronomy and Horticulture
1-4 credits

Provides credit for on-the-job training in jobs related to plants or soils.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 2600 - Annual and Perennial Plant Materials
3 credits

Identification, culture, and utilization of herbaceous ornamental plants in the landscape, including annual and perennial flowering plants, herbaceous ground covers, ornamental grasses, and herbs.

Semester(s) Traditionally Offered: Fall

PSC 2620 - Woody Plant Materials: Trees and Shrubs for the Landscape
3 credits
Identification, culture, and utilization of woody ornamental plants in the landscape, including shade trees, flowering trees and shrubs, hedge plants, and vines. Review of native plants commonly used in the landscape.

Semester(s) Traditionally Offered: Fall

PSC 2800 - Fundamentals of Organic Agriculture  
3 credits

Organic agriculture uses a holistic systems approach for maintaining plant, animal, and soil health. In this course, animal and crop production approaches and disease, as well as insect and weed management strategies, are scientifically assessed, critically compared, and used in decision making and problem solving exercises.

Semester(s) Traditionally Offered: Spring

PSC 2900 - Special Problems in Plant Science  
1-4 credits

Student-selected practical problems in horticulture and/or agronomy.  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 3000 - Fundamentals of Soil Science  
4 credits

Fundamentals of soil science, emphasizing physical, chemical, mineralogical, and biological properties of soils, and how these properties relate to plant growth and environmental quality.

Semester(s) Traditionally Offered: Fall

PSC 3010 - Basic Flower Arranging  
2 credits

Principles of basic flower design using fresh, dried, and artificial flowers. Proper care of cut flowers and foliages. Basic plant physiology behind such principles. Lab fee required.

Campus: Offered through Distance Education only.

Semester(s) Traditionally Offered: Fall

PSC 3100 - Soils and Civilization (DSC)  
DSC Depth Life and Physical Sciences

Lectures, readings, and discussions to explore effects of soil physical, chemical, and biological properties on civilization throughout history. Influence of soils on settlement patterns, land use/management, and civilization decline. Case studies focus on current soil and land use issues in western North America.

Semester(s) Traditionally Offered: Spring

PSC 3200 - Microbes in Environmental Action (DSC)  
DSC Depth Life and Physical Sciences

3 credits

Microorganisms play a central role in maintaining the biosphere. In this course, the diversity of microbial lifestyles is introduced. Current examples and case studies used to demonstrate microbial actions in composting, waste water treatment, and bioremediation of pollutants in the environment.

Prerequisite/Restriction: Completion of Breadth Life Sciences (BLS) University Studies requirement.

Semester(s) Traditionally Offered: Spring

PSC 3250 - Aviation Weather  
3 credits

Discussion, observation, and analysis of weather important for pilots and those associated with air travel.

Semester(s) Traditionally Offered: Spring

PSC 3300 - Residential Landscapes  
3 credits

Functional and aesthetic relationships of plants and structures in the landscape in connection with installation considerations.

Prerequisite/Restriction: PSC 2620 and PSC 2600 recommended.

Semester(s) Traditionally Offered: Spring

PSC 3400 - Landscape Management Principles and Practices  
3 credits

Principles and practices of landscape management,
including planting site analysis, pruning, soil and irrigation management, pest management, equipment considerations, cost estimating, and sustainability.

Prerequisite/Restriction: PSC 2600, PSC 2620.

Semester(s) Traditionally Offered: Spring

PSC 3420 - Landscape Irrigation Design (QI) QI Quantitative Intensive
2 credits

Introduction to design of sprinkler and drip irrigation systems for residential and commercial landscapes.

Prerequisite/Restriction: Fullfillment of QL requirement

Semester(s) Traditionally Offered: Spring

PSC 3430 - Construction Methods for Residential Landscape Installation
2 credits

Introduction to methods and equipment used in landscape installation, such as techniques of layout, pavers, water features, planting, sod installation, sprinkler and drip irrigation installation, and equipment operation.

Semester(s) Traditionally Offered: Fall

PSC 3440 - Landscape Business Practices
3 credits

Explores small business approach to managing landscape construction companies and using techniques of bidding and estimating.

Semester(s) Traditionally Offered: Spring

PSC 3500 - Structure and Function of Plants
3 credits

Introduction to principles of plant physiology and fundamentals of plant anatomy, emphasizing implications for management and utilization.

Prerequisite/Restriction: Integrated Science or comparable breadth course, BIOL 1010 or BIOL 1610.

Semester(s) Traditionally Offered: Spring

PSC 3700 - Plant Propagation
4 credits

Propagation of plants by sexual and asexual means. Covers fundamental physiology of propagation, as well as cultural practices and techniques used in crop production.

Prerequisite/Restriction: BIOL 1610 recommended.

Semester(s) Traditionally Offered: Fall

PSC 3810 - Turfgrass Management
3 credits

Fundamentals of turfgrass science: species adaptation, identification, and cultural requirements; turfgrass growth and development; establishment; primary cultural practices (fertilization, irrigation, mowing); secondary cultural practices; pest management; integrated management planning for turfgrass systems.

Prerequisite/Restriction: BIOL 1010 or BIOL 1610.

Semester(s) Traditionally Offered: Fall

PSC 3820 - Climate Change (DSC/QI) DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits

Emphasizes physical basis of climate (climate dynamics), as well as the mechanisms and processes for its fluctuations on sub-seasonal to interannual time scales (climate variations) and on regional to hemispheric/global time scales.

Prerequisite/Restriction: GEO 1110 or GEOG 1000.

Cross-listed as: WATS 3820.

Semester(s) Traditionally Offered: Spring

PSC 4000 - Soil and Water Conservation
4 credits

Applied soil and water conservation in an agronomic setting. Management of soil-water-plant-atmosphere continuum. Soil conservation techniques as they apply to actual situations.

Semester(s) Traditionally Offered: Fall
PSC 4050 - Greenhouse Management and Crop Production
4 credits
Design and management of greenhouse facilities. Production requirements of primary greenhouse crops.
Semester(s) Traditionally Offered: Spring

PSC 4100 - Landscape Water Conservation
2 credits
Explains why water conservation is important, and how water can be conserved through precision irrigation and conversion to low-water-use landscapes.

PSC 4200 - Temperate Zone Fruit Production
3 credits
Explores principles and practices underlying scientific fruit production. Focuses on physiological principles undergirding production practices. Topics include: plant growth and development, fruit anatomy, site selection, fertilizers, harvest, post-harvest physiology, and storage. Includes discussion of the production of important temperate fruit crops.
Prerequisite/Restriction: BIOL 1010 or BIOL 1610.
Semester(s) Traditionally Offered: Spring

PSC 4250 - Internship in Plants, Soils, and/or Climate
1-4 credits
Professional internship in crop science, horticulture, environmental soil/water science, and/or climate.
Repeatable for credit. Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 4280 - Field Crops
3 credits
Economic importance, use, distribution, origin, history, classification, identification, botanical nature, marketing, processing, storage, certification, grading, diseases, insects, commercial production, and improvement of cereal, root, and oilseed crops. Two lectures, one lab per week.
Semester(s) Traditionally Offered: Fall odd years

PSC 4301 - Computer Aided Residential Landscape Design
2 credits
Students will learn to use modern CAD software used in residential landscape design. This will include acquiring basic skills to digitally create landscape designs, generate plant and supply lists for bidding, and generate presentation and marketing materials.
Prerequisite/Restriction: PSC 3300
Semester(s) Traditionally Offered: Fall

PSC 4302 - Advanced Residential Landscape Design
2 credits
Advanced course in residential landscape design. Uses industry-standard and computer-aided design software for small-scale designs.
Prerequisite/Restriction: PSC 3300 and PSC 4301
Semester(s) Traditionally Offered: Spring

PSC 4310 - World Food Crops and Cropping Systems: The Plants That Feed Us
3 credits
Climatic, geographic, and management requirements of the world’s plants that provide food for humans, including botanical relationships. Systems used to produce these crops and processes for turning them into food.
Prerequisite/Restriction: Integrated Science or comparable breadth course.

PSC 4320 - Forage Production and Pasture Ecology
3 credits
Cultivation and management of legumes and grasses used throughout the Intermountain region of the U.S. and the world for grazing, stored feed, soil improvement, and conservation. Forage plant growth and development, nutrient and water utilization, and responses to environmental stress. Prerequisite:
Prerequisite/Restriction: Integrated Science or comparable breadth course.
Semester(s) Traditionally Offered: Fall even years
PSC 4400 - Modern Vegetable Production
3 credits
Principles and practices underlying scientific vegetable culture. Discussion of production of important vegetables, focusing on the physiological processes influencing their culture. Explores crop performance in research and commercial applications.

Prerequisite/Restriction: BIOL 1010 or BIOL 1610.

Semester(s) Traditionally Offered: Fall

PSC 4500 - Soil Reclamation
3 credits
Provides in-depth information on causes of soil degradation (both natural and man-made) and rehabilitation procedures.

Prerequisite/Restriction: PSC 3000.

Semester(s) Traditionally Offered: Spring

PSC 4550 - Weed Management
3 credits
This course stresses the fundamentals of modern weed science needed to effectively meet weed challenges in crop land, managed landscapes, forests and rangeland, rights-of-way and industrial sites, riparian and aquatic settings, recreation sites, and wildlife management areas. Weed identification, biology, ecology and modern management principles are all explored in this course.

Semester(s) Traditionally Offered: Fall

PSC 4600 - Cereal Science (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits
Introduction to principles involved in cereal chemistry and processing. Covers starch chemistry, dry milling, wet milling, decortication, malting, and extrusion. Processing of all major cereals also covered.

Prerequisite/Restriction: MATH 1030 or STAT 1040 or completion of University Studies Quantitative Literacy (QL) requirement.

Semester(s) Traditionally Offered: Spring even years

PSC 4700 - Irrigated Soils
3 credits
Soil salinity, soil-moisture-plant relationships, water supply and quality, irrigation water measurements, soil moisture movement, and irrigation methods.

Prerequisite/Restriction: PSC 3000 or equivalent, or permission of instructor.

Semester(s) Traditionally Offered: Spring

PSC 4810 - Professional Turfgrass Management
2 credits
Fertilization, irrigation, and cultivation practices for managed landscapes. Construction issues, including compaction, soil modification, and specialized construction practices for golf courses and sports turf.

Prerequisite/Restriction: PSC 3000 and PSC 3810.

Semester(s) Traditionally Offered: Spring

PSC 4820 - Challenges in Climate Change and Energy
3 credits
Capstone experience for students completing the minor. Students integrate socio-economic and sustainability concepts in the analysis of current climate and energy problem(s), and present findings in oral and written reports. An internship experience in pertinent area related to climate change or energy may be chosen with final presentations.

Prerequisite/Restriction: PSC 3820/WATS 3820 or GEO 5680.

Semester(s) Traditionally Offered: Fall

PSC 4890 - Senior Seminar (CI)
CI Communications Intensive
1 credit
Capstone course for senior Plants, Soils, and Climate majors. Focuses on individual presentations of current scientific papers, and collaborative production of a white paper and professional presentation recommending a science-based solution to a current issue related to plants, soils, or climate. Includes experiences in team building.
Repeatable for credit.
Semester(s) Traditionally Offered: Spring

PSC 4900 - Special Problems
1-4 credits

Special topics and problems in crop science, horticulture, environmental soil/water science, and/or climate. Subject, time, and credit arranged individually as needed.

Prerequisite/Restriction: Department approval required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 4970 - Undergraduate Research
1-6 credits

Independent and faculty mentored undergraduate research in Plants, Soils, and Climate.

Prerequisite/Restriction: Departmental approval

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 5000 - Environmental Instrumentation
2 credits

Discusses physics of signal transduction underlying all sensors. Basic electronics necessary to link sensors with dataloggers. Programming dataloggers to maximize measurement accuracy and to summarize data.

Cross-listed as: PSC 6000.

Semester(s) Traditionally Offered: Fall odd years

PSC 5003 - Remote Sensing of Land Surfaces
4 credits

Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology.

Cross-listed as: PSC 6100.

Semester(s) Traditionally Offered: Spring

PSC 5050 - Principles of Environmental Soil Chemistry
3 credits

Introduction to common chemical processes occurring among solid, liquid, and gas phases in soil systems. Emphasis placed on chemistry of arid land soils.

Prerequisite/Restriction: CHEM 1110 or higher, MATH 1050 or higher.

Cross-listed as: PSC 6050.

Semester(s) Traditionally Offered: Spring odd years

PSC 5100 - Landscape Irrigation Management
3 credits

Explores how principles of evapotranspiration, soil and plant properties, and urban landscape sprinkler irrigation systems can be combined for proper irrigation scheduling. Evaluating and analyzing landscape water demand.

Cross-listed as: PSC 6100.

Semester(s) Traditionally Offered: Spring

PSC 5130 - Soil Genesis, Morphology, and Classification
4 credits
Morphology, development, and classification of soils. Lectures and weekly field exercises emphasize soil as a natural body of the landscape: its properties, distribution, behavior, and interpretations for diverse land uses.

Prerequisite/Restriction: Understanding of fundamental soil science; PSC 3000 recommended.

Cross-listed as: PSC 6130.

Semester(s) Traditionally Offered: Fall

PSC 5160 - Methods in Biotechnology: Cell Culture
3 credits

Techniques and fundamental knowledge for culturing mammalian and insect cells. Students will learn maintenance, growing, genetic engineering of cells, cytotoxicity, hybridoma creation, cloning, etc. Extensive laboratory experience is provided.

Cross-listed as: ADVS 5160 and BIOL 5160 and NDFS 5160.

Semester(s) Traditionally Offered: Spring

PSC 5200 - Site-Specific Agriculture and Landscape/Horticultural Management
3 credits

Integration of site-specific management technology, such as computers, GPS, yield monitors, variable rate controllers, mechanized samplers, and postharvest processing controllers with planning, tillage, planting, chemical applications, and harvesting to optimize off-site inputs and environmental/ economical sustainability in crop or landscape management.

Campus: Distance Education during summer semester only.

Semester(s) Traditionally Offered: Spring

PSC 5260 - Methods in Biotechnology: Molecular Cloning
3 credits

Laboratory-oriented course designed to teach molecular biology techniques such as DNA cloning, genetic probes, polymerase chain reaction, and DNA sequencing.

Prerequisite/Restriction: CHEM 3700 or CHEM 5710; or BIOL 3060; or permission of instructor.

Cross-listed as: ADVS 5260, BIOL 5260, and NDFS 5260.

Semester(s) Traditionally Offered: Spring odd years

PSC 5310 - Soil Microbiology Laboratory
2 credits

Ecology and diversity of microorganisms in soils. Emphasis on factors controlling microbial activity and the role of microorganisms in organic matter decomposition and nutrient cycling.

Prerequisite/Restriction: BIOL 1610, BIOL 1620; CHEM 2300 or CHEM 2310; PSC 3000.

Cross-listed as: BIOL 5310.
Techniques for measuring microbial activity and diversity in soils. Includes use of molecular and isotope methods.

Prerequisite/Restriction: Concurrent or prior enrollment in PSC 5310/Biol 5310.

Cross-listed as: BIOL 5320.

Semester(s) Traditionally Offered: Fall even years

PSC 5350 - Wildland Soils
3 credits

Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on wildland soil properties. Role of soils in natural resource management.

Prerequisite/Restriction: CHEM 1110, PSC 3000, and one additional upper-division Soils course, or permission of instructor.

Cross-listed as: PSC 6350 and WILD 5350/WILD 6350.

Semester(s) Traditionally Offered: Spring

PSC 5400 - General Meteorology
3 credits

Designed for senior and graduate students in different fields who desire some basic introduction to meteorology. Bridges a large gap between courses describing meteorological phenomena in broad and simple terms and other courses treating the atmosphere more theoretically.

Cross-listed as: PSC 6400.

Semester(s) Traditionally Offered: Fall

PSC 5420 - Forest and Shade Tree Pathology (CI)
CI Communications Intensive
3 credits

Nature, cause, and management of forest diseases.

Cross-listed as: BIOL 5420 and WILD 5420.

Semester(s) Traditionally Offered: Spring

PSC 5430 - Plant Nutrition
2 credits


Cross-listed as: PSC 6430.

Semester(s) Traditionally Offered: Fall even years

PSC 5440 - Plant Molecular, Cellular, and Developmental Biology I
3 credits

Examines background and recent advances. Students analyze and discuss structure, genome, molecular development, and photosynthesis topics from a research perspective.

Prerequisite/Restriction: BIOL 3060, BIOL 5210; CHEM 3700 or CHEM 5710.

Cross-listed as: PSC 6440 and BIOL 5440/BIOL 6440.

Semester(s) Traditionally Offered: Spring even years

PSC 5450 - Plant Molecular, Cellular, and Developmental Biology II
3 credits

Examines background and recent advances. Students analyze and discuss cell wall, growth regulator, and environmental response topics from a research perspective.

Prerequisite/Restriction: BIOL 3060, BIOL 5210, CHEM 3700 or CHEM 5710.

Cross-listed as: PSC 6450 and BIOL 5450/BIOL 6450.

Semester(s) Traditionally Offered: Spring odd years

PSC 5500 - Land-Atmosphere Interactions
3 credits

Examination of interactions between the surface and atmosphere. Consideration of flows of mass and energy in soil-vegetation-atmosphere continuum, and their linkage to local and regional climates. Detailed study of feedbacks between vegetation and atmosphere.
Cross-listed as: PSC 6500.

Semester(s) Traditionally Offered: Spring odd years

PSC 5530 - Soils and Plant Nutrient Bioavailability (QI)
QI Quantitative Intensive
3 credits

Description of forms, transformations, and movement of plant nutrients in soils. Discussion of factors affecting nutrient supply, both qualitatively and quantitatively, for nutrient elements essential for plant growth.

Prerequisite/Restriction: PSC 3000; CHEM 1110 or CHEM 1210.

Cross-listed as: PSC 6530.

Semester(s) Traditionally Offered: Spring

PSC 5550 - Weed Biology and Control
4 credits

Management strategies for undesirable plant species in native and agroecosystems. Interference and allelopathy, undesirable plant invasion and spread, noxious weed eradication principles and practices, integrated plant management strategies, herbicide interactions with weeds and crops, and economics of management emphases.

Cross-listed as: PSC 6550.

Semester(s) Traditionally Offered: Fall

PSC 5560 - Analytical Techniques for the Soil Environment
3 credits

Analysis of chemical and biological soil characteristics. Results interpreted for soil fertility, land use, and environmental remediation. Graduate credit requires a paper reviewing analysis of element or compound class.

Prerequisite/Restriction: PSC 5050/PSC 6050 or PSC 5530/PSC 6530 (may be taken concurrently), or instructor's permission.

Cross-listed as: PSC 6560.

Semester(s) Traditionally Offered: Spring

PSC 5610 - Plant Water Relations
2 credits

Explores basic concepts such as the soil-plant-atmosphere continuum. Explains how water affects the physiological processes that control the quantity and quality of growth. Includes discussion of crop physiology and plant physiology.

Cross-listed as: PSC 6610.

PSC 5620 - Aquatic Chemistry
3 credits

Provides students with understanding of principles of aquatic chemistry, emphasizing chemical equilibria, acid-base reactions, complex formation, oxidation-reduction reactions, complex formation, and dissolution chemistry.

Prerequisite/Restriction: CHEM 1210 or equivalent.

Cross-listed as: CEE 5620.

Semester(s) Traditionally Offered: Fall

PSC 5650 - Urban/Community Forestry
3 credits

Social, biological, and administrative aspects of managing urban/community forests, including field and classroom exercises and a management planning project.

Cross-listed as: WILD 5650.

Campus: online only.

Semester(s) Traditionally Offered: Spring

PSC 5670 - Environmental Soil Physics
4 credits

Characterization of the physical properties of soils and other porous media. Measurement, prediction, and control of processes taking place in and through soils (e.g., water flow and solute transport), including atmospheric and groundwater interactions.

Cross-listed as: PSC 5670.

Semester(s) Traditionally Offered: Fall

PSC 5680 - Paleoclimatology
3 credits
Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: PSC 6680 and GEO 5680/GEO 6680 and WATS 5680/WATS 6680.

PSC 5700 - Principles of Plant Breeding
3 credits

Principles of plant breeding. Breeding techniques for self-pollinated, cross-pollinated, and asexually reproducing crops. Real-life breeding problems solved, showing that resource identification and allocation are the critical points in developing a successful program.

Prerequisite/Restriction: Fulfillment of General Education Breadth Life Sciences (BLS) requirement.

Semester(s) Traditionally Offered: Spring odd years

PSC 5740 - Environmental Quality: Soil and Water (CI)
CI Communications Intensive
2 credits

Senior capstone course for Environmental Soil/Water Science (ESWS) major. Students analyze current soil and water environmental quality problem(s), formulate remediation or mitigation plans, and present findings in oral and written reports.

Prerequisite/Restriction: PSC 5130 and two 5000-level courses dealing with Soil topics.

Semester(s) Traditionally Offered: Spring

PSC 5750 - Crop Biotechnology
2 credits

Genetic and cellular approaches to crop improvement. Emphasizes cell culture, transformation, markers, marker-assisted selection, mapping simple and quantitatively inherited traits, fine mapping, gene cloning, mutagenesis, expression profiling, and bioinformatics.

Prerequisite/Restriction: BIOL 3060.

Semester(s) Traditionally Offered: Spring odd years

PSC 6000 - Environmental Instrumentation
2 credits

Discusses physics of signal transduction underlying all sensors. Basic electronics necessary to link sensors with dataloggers. Programming dataloggers to maximize measurement accuracy and to summarize data.

Cross-listed as: PSC 5000.

Semester(s) Traditionally Offered: Fall odd years

PSC 6003 - Remote Sensing of Land Surfaces
4 credits

Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology.

Prerequisite/Restriction: MATH 1100 or MATH 1210; and PHYS 2110 or PHYS 2210.

Cross-listed as: PSC 5003 and CEE 6003/CEE 5003 and WATS 6003/WATS 5003.

Semester(s) Traditionally Offered: Spring

PSC 6050 - Principles of Environmental Soil Chemistry
3 credits

Introduction to common chemical processes occurring among solid, liquid, and gas phases in soil systems. Emphasis placed on chemistry of arid land soils.

Prerequisite/Restriction: CHEM 1110 or higher, MATH 1050 or higher.

Cross-listed as: PSC 5050.

Semester(s) Traditionally Offered: Spring odd years

PSC 6090 - Low Water Landscaping
3 credits

Examines arid ecosystems, emphasizing the
Intermountain West, and recreating such ecosystems in a range of amenity landscapes. Also covers procurement, propagation, establishment, and maintenance of plants appropriate for low water landscapes.

Cross-listed as: PSC 5090 and LAEP 6090/LAEP 5090.

Semester(s) Traditionally Offered: Fall

PSC 6100 - Landscape Irrigation Management
3 credits

Explores how principles of evapotranspiration, soil and plant properties, and urban landscape sprinkler irrigation systems can be combined for proper irrigation scheduling. Evaluating and analyzing landscape water demand.

Cross-listed as: PSC 5100.

Semester(s) Traditionally Offered: Spring

PSC 6130 - Soil Genesis, Morphology, and Classification
4 credits

Morphology, development, and classification of soils. Lectures and weekly field exercises emphasize soil as a natural body of the landscape: its properties, distribution, behavior, and interpretations for diverse land uses.

Prerequisite/Restriction: Understanding of fundamental soil science; PSC 3000 recommended.

Cross-listed as: PSC 5130.

Semester(s) Traditionally Offered: Fall

PSC 6140 - Unsaturated Flow and Transport
3 credits

Simulation and measurement of transport processes (e.g., water, solutes, CO2, heat) in partially-saturated soils. Includes influence of chemical reactions, plant root, and microbial respiration on CO2 soil fluxes, and plant root distribution and uptake on transpiration processes. Applies to problems related to agricultural, environmental, ecological, and hydrological applications.

Semester(s) Traditionally Offered: Spring odd years

PSC 6190 - Salt-affected Soils
2 credits

Emphasis on chemistry of salt-affected soils. Topics include carbonate chemistry, cation exchange, and reclamation of sodium and salt-affected soils. Exploration of effects of sodium accumulation on soil hydraulic conductivity and the biochemistry of salt and potentially toxic elements.

PSC 6200 - Biogeochemistry of Terrestrial Ecosystems
3 credits

Inputs, outputs, and cycling patterns of major nutrients. Emphasis on mechanisms for transformations, factors influencing process rates, and the impacts of management and global change on nutrient cycles and air and water quality.

Prerequisite/Restriction: BIOL 1620, PSC 3000, CHEM 2300 or CHEM 2310, or permission of instructor.

Cross-listed as: BIOL 6200 and WILD 6200.

Semester(s) Traditionally Offered: Fall odd years

PSC 6220 - Professional Experience in Water Efficient Landscaping
6 credits

Internship component of water efficient landscaping master’s program. Summer employment with water purveyors, consulting firms, and businesses involved in landscape irrigation.

Semester(s) Traditionally Offered: Summer

PSC 6230 - Readings in Landscape Water Conservation
1 credit

Background topics in water development and policy in the West. Current topics on various aspects of water conservation in urban landscapes.

Semester(s) Traditionally Offered: Spring even years

PSC 6240 - Water Efficient Landscaping Seminar
2 credits

Students develop skills in public speaking by presenting their summer internship experience to the Plants, Soils, and Climate faculty. Students also work on a culminating
academic endeavor for the program.

Semester(s) Traditionally Offered: Fall

PSC 6270 - Environmental Plant Physiology
2 credits


Prerequisite/Restriction: BIOL 4400, MATH 1050, or permission of instructor.

Cross-listed as: PSC 5270.

Semester(s) Traditionally Offered: Spring

PSC 6350 - Wildland Soils
3 credits

Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on wildland soil properties. Role of soils in natural resource management.

Prerequisite/Restriction: CHEM 1110, PSC 3000, and one additional upper-division Soils course, or permission of instructor.

Cross-listed as: PSC 5350 and WILD 6350/WILD 5350.

Semester(s) Traditionally Offered: Spring

PSC 6400 - General Meteorology
3 credits

Designed for senior and graduate students in different fields who desire some basic introduction to meteorology. Bridges a large gap between courses describing meteorological phenomena in broad and simple terms and other courses treating the atmosphere more theoretically.

Cross-listed as: PSC 5400.

Semester(s) Traditionally Offered: Fall

PSC 6430 - Plant Nutrition
2 credits


Cross-listed as: PSC 5430.

Semester(s) Traditionally Offered: Fall even years

PSC 6440 - Plant Molecular, Cellular, and Developmental Biology I
3 credits

Examines background and recent advances. Students analyze and discuss structure, genome, molecular development, and photosynthesis topics from a research perspective.

Prerequisite/Restriction: BIOL 3060, BIOL 5210; CHEM 3700 or CHEM 5710.

Cross-listed as: PSC 5440 and BIOL 6440/BIOL 5440.

Semester(s) Traditionally Offered: Spring even years

PSC 6450 - Plant Molecular, Cellular, and Developmental Biology II
3 credits

Examines background and recent advances. Students analyze and discuss cell wall, growth regulator, and environmental response topics from research perspective.

Prerequisite/Restriction: BIOL 3060, BIOL 5210, CHEM 3700 or CHEM 5710.

Cross-listed as: PSC 5450 and BIOL 6450/BIOL 5450.

Semester(s) Traditionally Offered: Spring odd years

PSC 6500 - Land-Atmosphere Interactions
3 credits

Examination of interactions between the surface and atmosphere. Consideration of flows of mass and energy in soil-vegetation-atmosphere continuum, and their linkage to local and regional climates. Detailed study of feedbacks between vegetation and atmosphere.

Cross-listed as: PSC 5500.
PSC 6530 - Soils and Plant Nutrient Bioavailability
3 credits

Description of forms, transformations, and movement of plant nutrients in soils. Discussion of factors affecting nutrient supply, both qualitatively and quantitatively, for nutrient elements essential for plant growth.

Prerequisite/Restriction: PSC 3000; CHEM 1110 or CHEM 1210.

Cross-listed as: PSC 5530.

Semester(s) Traditionally Offered: Spring odd years

PSC 6550 - Weed Biology and Control
4 credits

Management strategies for undesirable plant species in native and agroecosystems. Interference and allelopathy, undesirable plant invasion and spread, noxious weed eradication principles and practices, integrated plant management strategies, herbicide interactions with weeds and crops, and economics of management emphases.

Cross-listed as: PSC 5550.

Semester(s) Traditionally Offered: Spring

PSC 6560 - Analytical Techniques for the Soil Environment
3 credits

Analysis of chemical and biological soil characteristics. Results interpreted for soil fertility, land use, and environmental remediation. Graduate credit requires a paper reviewing analysis of element or compound class.

Prerequisite/Restriction: PSC 6050/PSC 5050 or PSC 6530/PSC 5530 (may be taken concurrently), or permission of instructor.

Cross-listed as: PSC 5560.

Semester(s) Traditionally Offered: Fall

PSC 6570 - Advanced Weed Science
3 credits

Explores advanced topics and research techniques in weed science. Discussion of weed biology, ecology, invasion, and interference. Includes uptake, movement, metabolism, and physiological activity of herbicides in plants. Considers mechanisms and impacts of herbicide resistance in weeds and crops.

Prerequisite/Restriction: BIOL 4400, PSC 6550/PSC 5550 or permission of instructor.

Semester(s) Traditionally Offered: Spring odd years

PSC 6610 - Plant Water Relations
2 credits

Explores basic concepts such as the soil-plant-atmosphere continuum. Explains how water affects the physiological processes that control the quantity and quality of growth. Includes discussion of crop physiology and plant physiology.

Cross-listed as: PSC 5610.

Semester(s) Traditionally Offered: Fall

PSC 6670 - Environmental Soil Physics
4 credits

Characterization of the physical properties of soils and other porous media. Measurement, prediction, and control of processes taking place in and through soils (e.g., water flow and solute transport), including atmospheric and groundwater interactions.

Cross-listed as: PSC 5670.

Semester(s) Traditionally Offered: Fall

PSC 6680 - Paleoclimatology
3 credits

Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: PSC 5680 and GEO 6680/GEO 5680 and WATS 6680/WATS 5680.
PSC 6700 - Integrative Topics in Plants, Soils, and Climate  
1-3 credits

Team-taught special topics course encouraging interdisciplinary analysis of a research or policy area from the current literature, encompassing the three departmental subdisciplines. Emphasis on written and oral student presentations.

Repeatable for credit.

PSC 6820 - Environmental Biophysics  
2 credits

Explores connections between biosphere and atmosphere at many scales. Introduces processes governing exchanges of mass and energy between surface and atmosphere, as well as connections to climate. Examines role of the biota at local to global scales.

Semester(s) Traditionally Offered: Spring

PSC 6870 - Ecology Seminar  
1 credit

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures. Students should register for fall semester, but attend through spring semester.

Cross-listed as: BIOL 6870 and ENVS 6870 and WATS 6870 and WILD 6870.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall

PSC 6890 - Plants, Soils, and Climate Graduate Seminar  
1 credit

Review and critique of presentations. Communication practice in extemporaneous, extension, research, poster, and lecture presentations. PSC graduate students must enroll during both fall and spring semesters.

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring

PSC 6900 - Special Problems in Plants, Soils, and/or Climate  
1-8 credits

Graduate-level special topics and problems in crop science, horticulture, environmental soil/water science, and/or climate. Subject, time, and credit arranged individually as needed.

Prerequisite/Restriction: Departmental approval required prior to enrollment.

Repeatable for credit.

PSC 6910 - Special Problems in Climatology  
3 credits

Study of physical causes and effects of various climate regimes found upon the Earth. Study of the basis and mechanisms of all types of physically-based climate models. Assists students in comprehending relative complexities and applicabilities of the whole range of climate models.

Repeatable for credit.  
Semester(s) Traditionally Offered: Spring

PSC 6960 - Graduate General Ecology  
4 credits

General concepts, history, and issues in all major areas of the science of ecology including: environmental biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic environments.

Cross-listed as: BIOL 6960 and ENVS 6960 and WATS 6960 and WILD 6960.

Semester(s) Traditionally Offered: Fall

PSC 6970 - Research and Thesis  
1-18 credits

Repeatable for credit.  
Pass/Fail only.  
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 6990 - Continuing Graduate Advisement  
1-12 credits
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 7200 - Soil Interfacial Processes and Reactive Transport
3 credits

Course divided into two blocks. Subject matter for first block is soil electrochemistry and surface chemistry. Second block applies material from first block to system in which transport limits reaction time.

Semester(s) Traditionally Offered: Spring odd years

PSC 7210 - Advanced Topics in Pedology
2 credits

Strategies for designing and critiquing pedological research through literature, discussions, and field trips. Topics will change, depending upon student interest, and can include factors and processes involved in pedogenesis, soil mineralogy, soil-biota relationships, and landscape evolution.

Prerequisite/Restriction: PSC 6130/PSC 5130.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

PSC 7890 - Plants, Soils, and Climate Graduate Seminar
1 credit

Review and critique of presentations. Communication practice in extemporaneous, extension, research, poster, and lecture presentations. PSC graduate students must enroll during both fall and spring semesters.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

PSC 7900 - Special Problems in Plants, Soils, and/or Climate
1-8 credits

Graduate-level special topics and problems in crop science, horticulture, environmental soil/water science, and/or climate. Subject, time, and credit arranged individually as needed.

Prerequisite/Restriction: Departmental approval

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 7970 - Research and Thesis
1-18 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSC 7990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Political Science

POLS 1010 - Introduction to Political Science (BSS)
BSS Breadth Social Sciences
3 credits

Presents an overview of the five major subdivisions of political science: American institutions, theory, public policy, comparative politics, and international relations. To successfully complete the course, students should demonstrate a basic understanding of the development of democratic theory, how American institutions function, how policy is created and implemented, how other nations function, and the causes of conflict and cooperation in the international arena. Instructional methods will include lecture, slides, videos and class discussion. Course requires short-answer and multiple choice quizzes, a mid-term and a final examination. Intended for political science and pre-law majors.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

POLS 1100 - United States Government and Politics (BAI)
BAI Breadth American Institutions
3 credits

U.S. Constitution, political parties and elections, interest groups, Congress, president, bureaucracy, courts, and civil rights and liberties. This course meets the Americanization requirement.

Semester(s) Traditionally Offered: Fall, Spring
POLS 1200 - Native American Government
3 credits
Examines traditional and contemporary Native American government. Explores the variety of political forms among Native American groups, tribal governments today, and the impacts of interaction with the Federal government.
Campus: USU Eastern only

POLS 2100 - Introduction to International Politics
3 credits
Analysis of the nation-state system as well as interdependence of the global community.
Semester(s) Traditionally Offered: Fall, Spring

POLS 2110 - Contemporary Indian Affairs
3 credits
Designed to acquaint students with a basic historical knowledge of 19th and 20th century diplomacy, a geopolitical basis from which to better understand global politics, and a basic knowledge of the theories and approaches to international relations currently employed at the research level. However, the course is not intended to instruct students in the mechanics of empirical research, nor is it intended to be either a history or geography course. Rather, the goal is to relate specific international actions to the aforementioned theories and approaches, thus, allowing the student to better understand the complexity and interdependent nature of international relations.
Prerequisite/Restriction: POLS 1010 or POLS 1100
Campus: USU Eastern only

POLS 2200 - Comparative Politics (BSS)
BSS Breadth Social Sciences
3 credits
Comparisons of differences in political culture, institutions, and processes, including authoritarian and democratic systems, violence and corruption, political development, and public policy.
Semester(s) Traditionally Offered: Fall, Spring

POLS 2300 - Introduction to Political Theory
3 credits
A survey course covering ancient and modern political theory.
Semester(s) Traditionally Offered: Fall, Spring

POLS 2971 - Campaign Internship
1-12 credits
A semester campaign internship.
Prerequisite/Restriction: Permission of instructor
Repeatable for credit
Campus: USU Eastern only

POLS 2972 - Washington Internship
1-12 credits
A semester congressional, administrative, or legal internship in Washington, D.C.
Prerequisite/Restriction: Permission of instructor
Repeatable for credit
Pas/Fail only
Campus: USU Eastern only

POLS 2973 - State Government Internship
1-12 credits
A semester legislative, lobbying, or administrative internship in the state government of Utah or those of any other state government.
Prerequisite/Restriction: Permission of instructor
Repeatable for credit

POLS 2974 - Administrative Internship
1-12 credits
A semester administrative internship at the local or state level.
Prerequisite/Restriction: Permission of instructor
Repeatable for credit
Pass/Fail only
Campus: USU Eastern only

POLS 2975 - International Internship
1-12 credits

Prerequisite/Restriction: Enrollment in International Studies major

Campus: USU Eastern only

POLS 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

POLS 2999 - Workshop
1-3 credits

Designed to meet the changing needs of the student in Political Science.

Campus: USU Eastern only

POLS 3000 - Introduction to Political Research (QI)
QI Quantitative Intensive
3 credits

Methodology, methods, and approaches used to study and analyze political events and relationships, including the use of library resources.

Prerequisite/Restriction: STAT 1040 or MATH 1030.

Semester(s) Traditionally Offered: Fall, Spring

POLS 3100 - Global Issues
3 credits

The origins and consequences of conflict and cooperation in an interdependent global community are examined in order to analyze how transnational, as well as competing national, interests and institutions affect economic, political, and environmental choices and outcomes.

Semester(s) Traditionally Offered: Fall

POLS 3110 - Parties and Elections (DSS)
DSS Depth Social Sciences
3 credits

Political parties, campaigns, and elections.

POLS 3115 - Electoral Behavior
3 credits

Considers the factors influencing citizens to become involved in politics. Explores how voters decide which candidates or issues to support, how candidates might act on that support, and whether or not reforms are needed to ensure greater participation.

Semester(s) Traditionally Offered: Fall, Spring

POLS 3120 - Law and Politics (DSS)
DSS Depth Social Sciences
3 credits

Examines history, processes, and theories underlying American law and politics. Makes selective comparison of the American legal system with other legal systems.

Semester(s) Traditionally Offered: Fall

POLS 3130 - United States Legislative Politics (DSS)
DSS Depth Social Sciences
3 credits

Legislative process.

Semester(s) Traditionally Offered: Spring

POLS 3140 - The Presidency (DSS)
DSS Depth Social Sciences
3 credits

Examines the origins, purposes, and scope of the executive power in the American constitutional system.

Semester(s) Traditionally Offered: Fall

POLS 3150 - State and Local Government
3 credits

Includes state and local politics, in addition to metro-urban politics.

POLS 3170 - Law and Economics
3 credits

Explains legal and political rules, the organization of government, and other institutional processes. Uses standard microeconomic tools and concepts, such as
scarcity, choice, preferences, incentives, and supply and demand.

Prerequisite/Restriction: POLS 1100.

Cross-listed as: ECN 3170.

Semester(s) Traditionally Offered: Spring

POLS 3180 - Introduction to Public Administration
3 credits

Overviews management of United States governmental affairs. Helps students understand how the government is structured to accomplish the execution and implementation of public policy.

Prerequisite/Restriction: POLS 1100.

POLS 3210 - Western European Government and Politics (DSS)
DSS Depth Social Sciences
3 credits

Britain, France, Germany, Scandinavia, and the European Union.

POLS 3220 - Russian and East European Government and Politics (DSS)
DSS Depth Social Sciences
3 credits

POLS 3230 - Middle Eastern Government and Politics
3 credits

General overview of political cultures and political developments in the Middle East.

Semester(s) Traditionally Offered: Fall

POLS 3250 - Chinese Government and Politics (DSS)
DSS Depth Social Sciences
3 credits

Semester(s) Traditionally Offered: Spring

POLS 3270 - Latin American Government and Politics (DSS)
DSS Depth Social Sciences
3 credits

Survey of most of the governments and politics of Latin America, emphasizing events, policies, and governmental actions of the past decade.

Semester(s) Traditionally Offered: Fall

POLS 3310 - American Political Thought (DSS)
DSS Depth Social Sciences
3 credits

Survey of American political thought from colonial times to the present.

Semester(s) Traditionally Offered: Fall

POLS 3320 - The Foundations of American Constitutionalism
3 credits

Introduces students to debate over constitutions, constitutionalism, and constitution-making which occurred during the period (roughly) from the Revolution to the election of 1800.

POLS 3400 - United States Foreign Policy (DSS)
DSS Depth Social Sciences
3 credits

Formulation, execution, and impact of United States foreign policy.

Semester(s) Traditionally Offered: Fall, Spring

POLS 3430 - Political Geography
3 credits

The relationship between earth and state. World political phenomena studied from a geographic point of view, including international boundaries, territorial seas, and landlocked states.

Cross-listed as: GEOG 3430.

POLS 3700 - Terrorism and Counterterrorism
3 credits

Explores dynamics, causes, characteristics, and
consequences of those acts labeled “terrorist.” Also explores counter measures to such acts.

POLS 3810 - Introduction to Public Policy (DSS)
DSS Depth Social Sciences
3 credits

Examines different approaches to the study of public policy and different value dimensions in the design of policies.

Semester(s) Traditionally Offered: Fall

POLS 4000 - Political Analysis
3 credits

Political data, quantitative and analytical techniques.

Prerequisite/Restriction: POLS 3000.

Semester(s) Traditionally Offered: Fall

POLS 4120 - American Constitutional Law
3 credits

Analyzes the separation of powers, checks and balances, federalism, the Bill of Rights, and other constitutional amendments.

Semester(s) Traditionally Offered: Fall

POLS 4130 - Constitutional Theory
3 credits

Introduces students to constitutional theory, with particular emphasis on American constitutional theory.

Prerequisite/Restriction: POLS 1100.

Semester(s) Traditionally Offered: Spring

POLS 4140 - Political Organizations
3 credits

Focuses on formal and informal constitutional rules, examining how different sets of rule structures impact the collective decisions of individuals in society and how individuals can influence or shape the rules structuring their lives.

Prerequisite/Restriction: POLS 1100.

POLS 4150 - The Supreme Court and the Shaping of America
3 credits

Exposes students to the most important Supreme Court decisions in U.S. history. Outlines how such decisions impact American citizens and policy.

Semester(s) Traditionally Offered: Spring

POLS 4160 - The First Amendment
3 credits

Provides an in-depth examination of the first amendment of the U.S. Constitution, based on case law of the Supreme Court and interpretations made within government agencies.

POLS 4210 - European Union Politics
3 credits

Explores creation and ongoing development of the European Union. Examines governing institutions, and internal and external politics of the European Union across a number of issues areas.

Semester(s) Traditionally Offered: Fall

POLS 4220 - Ethnic Conflict and Cooperation (CI)
CI Communications Intensive
3 credits

Examines origins of ethnic groups and the causes of ethnic conflicts, as well as different strategies for preventing or resolving such conflict. Explores conditions facilitating interethnic cooperation, the more common form of ethnic group interaction.

POLS 4230 - Issues in Middle East Politics
3 credits

Contemporary Middle Eastern political movements, regional conflicts, and state-level political change.

Semester(s) Traditionally Offered: Spring

POLS 4260 - Southeast Asian Government and Politics
3 credits

Semester(s) Traditionally Offered: Spring

POLS 4280 - Politics and War
3 credits
Examines causes and implications of war. Study of wars from general to limited, including case studies such as the Vietnam War.

Semester(s) Traditionally Offered: Spring

POLS 4310 - History of Political Thought I (CI)
CI Communications Intensive
3 credits

Issues and thinkers in ancient and medieval political thought.

Semester(s) Traditionally Offered: Spring

POLS 4320 - History of Political Thought II (DSS)
DSS Depth Social Sciences
3 credits

Issues and thinkers in modern and contemporary political thought.

Semester(s) Traditionally Offered: Spring

POLS 4330 - Political Theory and Literature
3 credits

Utilizes works from the field of literature, partly in order to discuss issues in politics and political philosophy, and partly as examples of political thought at its best.

Semester(s) Traditionally Offered: Fall, Spring

POLS 4350 - Public Policy and Democratic Theory
3 credits

Examines the nature of the American Republic. Focuses on the tension between our republican form of government and the tendency toward democratization. Considers how this balance has changed over time.

Semester(s) Traditionally Offered: Fall

POLS 4410 - Global Negotiations
3 credits

Creates an awareness of international issues and other cultures. Utilizes a computer simulation program in which negotiating teams of students from around the world are linked in a negotiation simulation.

POLS 4450 - United States and Latin America (CI)
CI Communications Intensive
3 credits

Study and analysis of foreign relations of Latin American nations among themselves and with the rest of the world.

Semester(s) Traditionally Offered: Spring

POLS 4460 - National Security Policy
3 credits

How intelligence systems function, fit within the policymaking systems of free societies, and are managed and controlled.

Semester(s) Traditionally Offered: Spring

POLS 4470 - Foreign Policy in the Pacific
3 credits

Analysis of contemporary foreign policies of major countries surrounding the North Pacific.

Semester(s) Traditionally Offered: Spring

POLS 4800 - The Supreme Court and American Constitutional History
3 credits

Examines many of the major arguments made about the Constitution, which were presented before the Supreme Court of the United States.

Cross-listed as: HIST 4800.

POLS 4810 - Politics and Public Policy
3 credits

Explains public policies as rational expressions of political self-interest and explores the relationship between self-interest and values such as “equity” and “efficiency” in policy.

Semester(s) Traditionally Offered: Spring

POLS 4820 - Natural Resources and Environmental Policy: Political Economy of Environmental Quality (DSS)
DSS Depth Social Sciences
3 credits

Causes of environmental and natural resources problems
and evaluation of political and private responses to them. Study of economics and politics applied to the environment. Production, protection, and allocation of scarce resources by markets and political systems.

POLS 4890 - Special Topics
1-5 credits
Credit arranged.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

POLS 4910 - Readings and Conference
1-5 credits
Individually directed study in subjects of special interest to students. Credit arranged.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 4990 - Senior Research Seminar (CI)
CI Communications Intensive
3 credits
Introduces students to the research process by having them complete a major research project in the topic area of the particular professor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

POLS 5110 - Social Policy
3 credits
Examines health, education, and welfare policies in U.S. contexts and in comparative context.

POLS 5120 - Economics of Russia and Eastern Europe, 9th Century to 21st Century
3 credits
Development of the economics of Russia and Eastern Europe from earliest times to the present, emphasizing the interaction between economic forces and policies of the state.

POLS 5130 - Law and Policy
3 credits
Analyzes the relationship between law and the formation and implementation of policy.
Semester(s) Traditionally Offered: Spring

POLS 5140 - Law, Politics, and War
3 credits
Examines relationship between law, politics, and war, with particular emphasis on the American experience since 1787.
Semester(s) Traditionally Offered: Fall

POLS 5200 - Global Environment
3 credits
Examines different strategies for resolving global resource and environmental problems.

POLS 5210 - Comparative Political Change/Development
3 credits
Emphasis on approaches and theories in the field of comparative politics, with a focus on political change/development.

POLS 5270 - Latin American Politics and Development
3 credits
Focuses on special contemporary issues of selected Latin American nations, such as democratization, the role of the military, and elections.
Semester(s) Traditionally Offered: Spring

POLS 5290 - Development in Europe
3 credits
Emphasizes political and economic development in Europe.

POLS 5350 - Evolution, Conflict, and Cooperation (DSS)
DSS Depth Social Sciences
3 credits
Intensively examines human cooperation as a fundamental problem of development and human conflict as the major obstacle to development.

POLS 5420 - The Mass Media and Politics
3 credits

Examination of the role of the mass media in the political process, including both campaigns and governance. Examination of political advertising, news coverage, polling, opinion formation strategies, and politicians’ use of new media technologies.

Cross-listed as: POLS 6420 and JCOM 5420/JCOM 6420.

Semester(s) Traditionally Offered: Fall

POLS 5480 - International Trade Policy
3 credits

Examines governance and politics of international trade relations, focusing in particular on cooperation, conflict, and dispute resolution in the GATT/WTO, European community, NAFTA, and Asian cooperative regimes.

POLS 5910 - Campaign Internship
1-12 credits

A semester campaign internship.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 5920 - Washington Internship
1-12 credits

A semester congressional, administrative, or legal internship in Washington, D.C.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 5930 - State Government Internship
1-12 credits

A semester legislative, lobbying, or administrative internship in the state government of Utah or those of any other state government.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 5940 - Administrative Internship
1-12 credits

A semester administrative internship at the local or state level.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 5950 - International Internship
1-12 credits

Prerequisite/Restriction: Enrollment in International Studies major.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 6010 - Research Design
3 credits

A graduate survey of the philosophy and methods of political analysis. Topics ranging from the methodology of inquiry to elementary statistical methods will be covered.

Semester(s) Traditionally Offered: Fall

POLS 6020 - Public Policy Analysis
3 credits

Examines and reviews leading theories of policy analysis and the policy-making process at an advanced level.

Semester(s) Traditionally Offered: Spring

POLS 6030 - Political Theory, Political Economy, and Capitalism
3 credits

Provides an introduction to the study of political
economy by considering the connections among political theory, political economy, and capitalism.

POLS 6040 - Public Choice
3 credits
Introduction to applying the microeconomic theory of markets to political processes.

POLS 6110 - Budgeting and Finance
3 credits
Surveys all major activities concerning allocation, investment, and control of public funds, as well as budgeting and revenues in context of fiscal policy making.

Semester(s) Traditionally Offered: Spring alternate years

POLS 6130 - Law and Administration
3 credits
Exploration and analysis of constitutional and legal basis in which American Public Administration is set, including separation of powers, checks and balances, delegation of discretionary authority, and common law and equity.

Semester(s) Traditionally Offered: Summer alternate years

POLS 6140 - Leadership in Public Organizations
3 credits
Analysis of leadership behavior and managerial activities. Examination of major theories of leadership and motivation, including leadership vs. management, leadership qualities and characteristics, and leadership skills.

Semester(s) Traditionally Offered: Summer alternate years

POLS 6210 - Conflict and Security
3 credits
Explores the many causes of conflict at different levels. Identifies the means by which resolution can be achieved, as well as the challenges and barriers associated with such efforts.

Semester(s) Traditionally Offered: Spring

POLS 6220 - International/Comparative Theory
3 credits
Introduces graduate students to prominent theories in the related fields of international relations and comparative politics. Taught during alternate years.

Semester(s) Traditionally Offered: Alternate years

POLS 6230 - Terrorism and Counter-Terrorism
3 credits
Explores the history, causes, and consequences of terrorism, as well as its impact on the global arena. Teaches students why understanding of terrorism is crucial, in order to allow effective, intelligent responses.

Semester(s) Traditionally Offered: Spring

POLS 6240 - Democratic Theories and Practice
3 credits
Explores the many different perspectives and theories on the concept of democracy, ranging from the 18th Century to writings of the 21st Century.

Semester(s) Traditionally Offered: Fall

POLS 6250 - Theories of War and Peace
3 credits
Examines the “classic” alternative understanding, in the history of political thought, regarding the reasons people go to war. Explores consequent proposals to erase the sources or alleviate the results of armed conflicts.

Semester(s) Traditionally Offered: Fall, Spring

POLS 6400 - United States Foreign Policy
3 credits
Explores contemporary U.S. foreign policy in the context of international relations theory and global realities. Utilizing theoretical perspectives as analytical models, course examines how policy makers formulate and attempt to achieve U.S. foreign policy goals in the global arena.

Semester(s) Traditionally Offered: Alternate years

POLS 6420 - The Mass Media and Politics
3 credits
Examination of the role of the mass media in the political process, including both campaigns and governance. Examination of political advertising, news coverage, polling, opinion formation strategies, and politicians’ use of new media technologies.

Cross-listed as: POLS 5420 and JCOM 6420/JCOM 5420.

Semester(s) Traditionally Offered: Fall

POLS 6810 - Graduate Seminar
1-4 credits

American politics; comparative politics; political theory; international politics; public law; public administration.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 6910 - Graduate Tutorial
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 6920 - Internship
1-15 credits

Internship in a public administration agency.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

POLS 6970 - Thesis Research
1-9 credits

Prerequisite/Restriction: Admission to candidacy

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PORT 1010 - Portuguese First Year I
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: PORT 1010 or equivalent.

PORT 1020 - Portuguese First Year II
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

PORT 1050 - Intensive Portuguese for Spanish Speakers
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs. Intensive course for Spanish speakers.

Semester(s) Traditionally Offered: Spring

PORT 1800 - Portuguese I Study Abroad
1-4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Campus: Taught only in USU’s overseas Portuguese Program.

Semester(s) Traditionally Offered: Summer

PORT 2010 - Portuguese Second Year I
4 credits

Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: PORT 2010 or equivalent.

Semester(s) Traditionally Offered: Fall
PORT 2020 - Portuguese Second Year II
4 credits
Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.
Prerequisite/Restriction: PORT 2010 or equivalent.
Semester(s) Traditionally Offered: Spring
PORT 2800 - Portuguese II Study Abroad
1-4 credits
Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.
Campus: Taught only in USU's overseas Portuguese Program.
Semester(s) Traditionally Offered: Summer
PORT 2880 - Individual Readings
1-4 credits
Individual study of selected readings in Portuguese.
Prerequisite/Restriction: Instructor's permission required.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
PORT 3040 - Advanced Portuguese Grammar and Composition (CI)
CI Communications Intensive
3 credits
Review of the more complex Portuguese grammatical points and development of writing skills through composition.
Prerequisite/Restriction: PORT 2020 or equivalent.
Semester(s) Traditionally Offered: Fall, Spring
PORT 3570 - Brazilian Culture and Civilization (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Historical, social, political, economic, and cultural conditions and institutions of Brazil.
Prerequisite/Restriction: PORT 3040 or permission of instructor.
Semester(s) Traditionally Offered: Fall, Spring
PORT 3630 - Survey of Brazilian Literature (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Selected readings and discussions of major works and authors in Brazilian literature.
Prerequisite/Restriction: PORT 3040.
Semester(s) Traditionally Offered: Fall, Spring
PORT 3800 - Portuguese III Study Abroad
1-4 credits
Intense review of selected problematic areas of Portuguese grammar for students with advanced language skills.
Prerequisite/Restriction: PORT 2020 or equivalent.
Campus: Taught only in USU's overseas Portuguese program.
Semester(s) Traditionally Offered: Summer
PORT 4880 - Individual Readings
1-4 credits
Readings in Brazilian and/or Portuguese literature.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
PORT 4920 - Portuguese Language Tutoring
1 credit
Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

Psychology

PSY 0710 - Career Exploration
1 credit

Designed to equip the student with skills and information used for job hunting, interview, writing resumes and job applications. It is also designed to aid the student in choosing a career through the use of videos, printed materials and personal contact with professionals and vocational experts. This course covers information on more than 150 careers.

Campus: USU Eastern only

PSY 1010 - General Psychology (BSS)
BSS Breadth Social Sciences
3 credits

Explores basic areas of psychology, and how each explains human thought and behavior at the individual, familial, and cultural levels.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 1100 - Lifespan Development
3 credits

Covers theories and stages of development across the life span.

Prerequisite/Restriction: PSY 1010

PSY 1210 - Psychology of Human Adjustment
3 credits

Examination of life situations affecting human adjustment to everyday living, with emphasis on practical applications.

Prerequisite/Restriction: PSY 1010.

PSY 1220 - Career and Life Planning
3 credits

Students assess and clarify their interests, values, skills, and temperaments. Emphasizes discovering relationships between these personal characteristics and the realities of educational and employment opportunities. Explores setting goals, creating action plans, and coping with change.

Semester(s) Traditionally Offered: Fall, Spring

PSY 1400 - Analysis of Behavior: Basic Principles
3 credits

A laboratory course about the scientific methods used in the study of animal and human behavior.

Prerequisite/Restriction: PSY 1010.

PSY 1410 - Analysis of Behavior: Basic Principles Lab
1 credit

Laboratory experience accompanying PSY 1400.

Prerequisite/Restriction: PSY 1010.

PSY 1730 - Strategies for Academic Success
1-3 credits

Orients students to the systems, tools, and resources unique to higher education that are needed to maximize academic success (e.g., library, computer lab use, etc.). Also helps students develop critical thinking, study, and learning strategies necessary for college success.

Semester(s) Traditionally Offered: Fall, Spring

PSY 1740 - Academic Literacy and College Reading Skills
3 credits

Helps students understand and adapt reading skills to fit their learning needs. Philosophy of the class is for students to discover new reading strategies and test them by practicing and applying them to college reading material. Also emphasizes reading comprehension and understanding a variety of texts.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 1750 - Comprehension Strategies for College Reading
1 credit

Practical course emphasizing application of strategies and development of critical thinking skills needed to comprehend and distill meaning from college-level texts.

Semester(s) Traditionally Offered: Fall, Spring

PSY 2010 - Orientation to Psychology as a Career and Profession
2 credits

Overview of the field and major. Students clarify career goals, identify steps necessary to achieve goals, prepare a vita, and gain major-relevant skills (e.g., APA-style writing, ethics, and library usage).

Prerequisite/Restriction: PSY 1010 and consent of Psychology Advising Office.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 2100 - Developmental Psychology: Adolescence
3 credits

Characteristics of adolescents and their psychological, educational, and adjustment problems are discussed in detail.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Spring (odd years)

PSY 2250 - Introductory Cooperative Work Experience
1-6 credits

Educators and employers cooperate to provide opportunities for students to apply classroom theory and principles in job environments, thereby gaining practical experience in their field.

Prerequisite/Restriction: Approval of Psychology Department coop education counselor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 2800 - Psychological Statistics (QI)
QI Quantitative Intensive
3 credits

Elementary study of statistical procedures in handling test scores and other data, and of the concepts needed for each current type of educational and psychological literature.

Prerequisite/Restriction: STAT 1040.

Semester(s) Traditionally Offered: Fall, Spring

PSY 3100 - Health Psychology
3 credits


Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Spring (odd years)

PSY 3120 - Abuse, Neglect, and the Psychological Dimensions of Intimate Violence (DSS)
DSS Depth Social Sciences
3 credits

Overview of child maltreatment, animal abuse, dating, courtship, domestic violence, and abuse of the elderly. Stresses the psychological factors related to the causes, consequences, and treatment of abuse and neglect. Presents multidisciplinary perspectives, including historical, legal, medical, psychiatric, and psychological approaches.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall, Summer

PSY 3210 - Abnormal Psychology (DSS)
DSS Depth Social Sciences
3 credits

Introduction to “abnormal” human behavior. Covers characteristics, etiology, and treatment of a variety of psychological disorders.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall, Spring

PSY 3400 - Analysis of Behavior: Advanced (DSS)
DSS Depth Social Sciences
4 credits

In-depth examination of principles introduced in PSY 1400. Considers principles governing more complex human and animal behavior, as well as emotional and motivational factors in behavior. Lab included as part of credit.

Prerequisite/Restriction: PSY 1400 and PSY 1410.

Semester(s) Traditionally Offered: Fall, Spring

PSY 3450 - Perception and Psychophysics
3 credits

Analysis of how sensory processes and principles help determine behavior. Introduction to methods used to measure sensory-determined behavior. Methods, results, and principles of sensory communication. Lab required as part of 3 credits.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall

Page: 1 <- Back 10 ... 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 ... Forward 10 -> 55

Psychology

PSY 3460 - Physiological Psychology
3 credits

Introductory course examining relationship between central system anatomy and physiology, and behavior and emotional functioning. Also considers neural and biochemical substrates of behavior. Lab required as part of 3 credits.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Spring

PSY 3500 - Scientific Thinking and Methods in Psychology (DSS/CI)
DSS/CI Depth Social Sciences and Communications Intensive
3 credits

Provides introduction to research methods and scientific thinking. Teaches students to understand, analyze, and evaluate existing behavioral research. Includes defining and measuring variables; selecting research participants; experimental, quasi-experimental, and nonexperimental research designs; and conducting ethical research.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall, Spring

PSY 3510 - Social Psychology (DSS)
DSS Depth Social Sciences
3 credits

Study of the individual in society; problems, theories, and methods of social psychology; will relate reading assignments to current social issues.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall

PSY 3660 - Educational Psychology for Teachers
2 credits

Principles and practices for development of conditions for effective learning. Lab required.

Prerequisite/Restriction: PSY 1100 or PSY 2100.

Semester(s) Traditionally Offered: Fall, Spring

PSY 3720 - Behavior Modification
3 credits

Approaches to behavior modification in a variety of settings. Students required to complete an individual project.

Prerequisite/Restriction: PSY 1010, PSY 1400, PSY 1410.

Semester(s) Traditionally Offered: Fall

PSY 4000 - Mental Aspects of Sports Performance
3 credits

Provides an understanding of theory and applications in the specialty area of sports psychology, including enhancement of motivation and performance, stress, anxiety, aggression and time management, and the relation of these issues to physical development and coaching styles.
Cross-listed as: PEP 4000.

Semester(s) Traditionally Offered: Fall

PSY 4210 - Personality Theory (DSS)
DSS Depth Social Sciences
3 credits

Explanatory study of various personality theories, their origin, and approaches to the understanding of human behavior.

Prerequisite/Restriction: PSY 1010 and PSY 2800.

Semester(s) Traditionally Offered: Spring

PSY 4230 - Psychology of Gender (DSS)
DSS Depth Social Sciences
3 credits

Critical analysis of evidence for sex differences, gender roles, the effect of gender on traditional psychology, and other topics, including parenthood, cultural influence, and sexual orientation.

Semester(s) Traditionally Offered: Spring (even years)

PSY 4240 - Multicultural Psychology (DSS)
DSS Depth Social Sciences
3 credits

Explores cultural influences on basic psychological processes, including perception, cognition, language, emotion, intelligence, attitudes, values, and intergroup relations.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Fall

PSY 4250 - Advanced Cooperative Work Experience
1-12 credits

Cooperative education work experience position; increased level of complexity and a more professional level of experience as student advances toward completion of the program.

Prerequisite/Restriction: Approval of Psychology Department cooperative education coordinator.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 4420 - Cognitive Psychology (DSS)
DSS Depth Social Sciences
3 credits

In-depth study of basic concepts, methods, and theories involved in perception, memory, and thinking. Lab required.

Prerequisite/Restriction: PSY 1010.

Semester(s) Traditionally Offered: Spring

PSY 4430 - Cognitive Psychology Laboratory
1 credit

Required laboratory, designed to accompany PSY 4420. Focuses on conducting cognitive experiments via computer simulations and sampling data collection. Designed to increase skills in designing data collection and interpreting experimental data.

Semester(s) Traditionally Offered: Spring

PSY 4510 - Effective Social Skills Interventions (CI)
CI Communications Intensive
3 credits

Examination of theory and practice of social skills training with children, adolescents, and adults.

Prerequisite/Restriction: PSY 1010, PSY 1100, and either PSY 3210 or PSY 3510.

Semester(s) Traditionally Offered: Spring

PSY 4720 - Behavioral Assessment and Intervention II
2 credits

Approaches to applied behavior analysis in a variety of settings and populations. This course builds upon material taught in PSY 3720 by introducing advanced concepts taught through primary source material and hands-on experience through a required laboratory component (PSY 4730).

Prerequisite/Restriction: PSY 3720

Corequisite: PSY 4730
Semester(s) Traditionally Offered: Spring

PSY 4730 - Behavioral Assessment and Intervention II Lab
2 credits

Laboratory experience accompanying PSY 4720. Students will gain supervision experience in Applied Behavior Analysis.

Prerequisite/Restriction: PSY 3720
Corequisite: PSY 4720

Semester(s) Traditionally Offered: Spring

PSY 4790 - Psychological Principles and Individuals who are Deaf and Hard of Hearing
3 credits

Psychological theories and research used to describe the deaf and hard of hearing. Exploration of principles that can be used in helping these individuals achieve emotional well-being.

Cross-listed as: PSY 6790 and COMD 4790/COMD 6790.

Semester(s) Traditionally Offered: Spring

PSY 4910 - Undergraduate Research Creative Opportunity
1-3 credits

A cooperative process of discovery, investigation, research, or creativity between faculty and one or more students.

Prerequisite/Restriction: Approval of Psychology Department URCO coordinator.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 4920 - Practicum
1-3 credits

Field work in applied psychological setting at BS level.
Repeatable for credit.

Semester(s) Traditionally Offered: Spring

PSY 4950 - Undergraduate Apprenticeship (CI)
CI Communications Intensive
3 credits

Students plan and execute their apprenticeship experience in a research setting (with faculty members) and an applied setting (e.g., community service agency or school). Students are encouraged to take this course three or more semesters prior to graduation.

Prerequisite/Restriction: PSY 2010.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 4960 - Advanced Undergraduate Apprenticeship (CI)
CI Communications Intensive
3 credits

Students continue their apprenticeship experiences from PSY 4950. Students complete a major written assignment that can take the form of a literature review or complete research report. Students are encouraged to take this course one or more semesters prior to graduation.

Prerequisite/Restriction: PSY 4950.

Semester(s) Traditionally Offered: Online only

PSY 5020 - Multicultural Issues in Psychology
3 credits

Examines role of culture in human development, with emphasis on understanding relations between culture, ethnicity, and identity and how images of “cultural selves” and “cultural others” are produced and “naturalized.”.

Cross-listed as: PSY 6020.

Semester(s) Traditionally Offered: Fall

PSY 5050 - Psychological Aspects of Sports Performance
3 credits

Psychological theory and principles applied to sports. Includes motivational techniques, psychological evaluation, stress and anxiety in sports, personality and sports performance.

Cross-listed as: PSY 6050 and PEP 5050/PEP 6050.

Semester(s) Traditionally Offered: Spring
PSY 5100 - History and Systems of Psychology
3 credits
Theoretical and historical developments in psychology with primary emphasis on nineteenth and twentieth century developments, although earlier precursors are also considered.
Prerequisite/Restriction: PSY 1010.
Cross-listed as: PSY 6100.
Semester(s) Traditionally Offered: Spring

PSY 5200 - Introduction to Interviewing and Counseling (CI)
CI Communications Intensive
3 credits
Theory, models, and practice in basic principles of interviewing and counseling, including listening skills, facilitation of verbal interaction, gathering information, attending to nonverbal behavior, interpersonal dynamics, and promoting helping relationships.
Prerequisite/Restriction: Psychology major or minor, matriculation in master’s program requiring PSY 5200, or Permission of instructor.
Semester(s) Traditionally Offered: Fall

PSY 5330 - Psychometrics
3 credits
Overview of measurement development principles and statistics. Evaluation, interpretation, and uses of standardized tests of aptitude, intelligence, achievement, personality, and adjustment.
Prerequisite/Restriction: PSY 1010, PSY 2800.
Cross-listed as: PSY 6330.
Semester(s) Traditionally Offered: Fall

PSY 5500 - Interdisciplinary Workshop
1-3 credits
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 5720 - Assessment for Eligibility, Programming and IEP Development
3 credits
Covers principles of standardized assessment, curriculum-based assessment, and direct child observation. Instructs teachers in how to use assessment results to determine student eligibility for special education services and IEP development.
Prerequisite/Restriction: PSY 6100.
Semester(s) Traditionally Offered: Fall

PSY 5900 - Independent Study
1-3 credits
Individual discussion and intensive study of a particular problem or area.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 5910 - Independent Research
1-3 credits
Experiments and demonstration projects are conducted and reported.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 5930 - Instructional Apprenticeship in Psychology
1-3 credits
Didactic and applied experience in course preparation and instructional techniques applicable to the teaching of psychology. Intended for students planning careers as instructors at the secondary and postsecondary levels.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6010 - Introduction to Program Evaluation: Evaluation Models and Practical Introduction to Program Evaluation
Alternative approaches and practical guidelines for conducting evaluation studies. Through case studies and simulations, addresses impact of social, political, and ethical issues on evaluation.

Cross-listed as: EDUC 6010.

Semester(s) Traditionally Offered: Fall, Spring

PSY 6020 - Multicultural Issues in Psychology
3 credits

Examines role of culture in human development, with emphasis on understanding relations between culture, ethnicity, and identity and how images of “cultural selves” and “cultural others” are produced and “naturalized.”.

Cross-listed as: PSY 5020.

PSY 6050 - Psychological Aspects of Sports Performance
3 credits

Psychological theory and principles applied to sports. Includes motivational techniques, psychological evaluation, stress and anxiety in sports, personality and sports performance.

Cross-listed as: PSY 5050 and PEP 6050/PEP 5050.

PSY 6100 - History and Systems of Psychology
3 credits

Theoretical and historical developments in psychology with primary emphasis on nineteenth and twentieth century developments, although earlier precursors are also considered.

Prerequisite/Restriction: PSY 1010.

Cross-listed as: PSY 5100.

PSY 6130 - Evidence-Based Practice: School Intervention
3 credits

To prepare students to design and implement evidence-based intervention in K-12 school populations.

Semester(s) Traditionally Offered: Fall

PSY 6150 - Evidence-Based Practice I: Children and Adolescents
2 credits

Introduction to application of evidence-based practice in psychology, focusing on child and adolescent populations.

Semester(s) Traditionally Offered: Fall

PSY 6220 - Group Counseling
3 credits

Introduction to theory of group counseling with illustrative experiences to show how theory may be applied.

Prerequisite/Restriction: PSY 6350.

PSY 6240 - Introduction to School Counseling and Guidance
3 credits

Introduction to role and function of school counselors. Overview of history of school guidance and counseling, and role of counselors in comprehensive guidance program.

Semester(s) Traditionally Offered: Spring

PSY 6250 - Internship in School Counseling and Guidance
1-10 credits

Internship in approved school system involving comprehensive guidance activities, under supervision of licensed school counselor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6260 - Career Development: Theory and Practice
3 credits

Consideration of career patterns and factors influencing
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester(s) Traditionally Offered</th>
<th>Prerequisite/Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 6270</td>
<td>Child Psychopathology</td>
<td>3</td>
<td>Summer</td>
<td>Admission to graduate program in psychology or permission of instructor.</td>
</tr>
<tr>
<td>PSY 6290</td>
<td>Diversity Issues in Treatment and Assessment</td>
<td>3</td>
<td>Fall</td>
<td>PSY 6350 or instructor's consent.</td>
</tr>
<tr>
<td>PSY 6310</td>
<td>Intellectual Assessment</td>
<td>3</td>
<td>Fall</td>
<td>Matriculation into School Psychology program or Combined Psychology program.</td>
</tr>
<tr>
<td>PSY 6320</td>
<td>Objective Assessment of Personality and Affect</td>
<td>3</td>
<td>Fall</td>
<td>Matriculation into School Psychology/School Counseling or Combined Psychology program.</td>
</tr>
<tr>
<td>PSY 6330</td>
<td>Psychometrics</td>
<td>3</td>
<td>Spring, Summer</td>
<td>PSY 1010, PSY 2800. Cross-listed as: PSY 5330.</td>
</tr>
<tr>
<td>PSY 6340</td>
<td>Psychological and Educational Consultation</td>
<td>3</td>
<td>Spring, Summer</td>
<td></td>
</tr>
<tr>
<td>PSY 6350</td>
<td>Introduction to Theories of Intervention in Psychology</td>
<td>3</td>
<td>Fall, Summer</td>
<td>Matriculation into School Psychology/School Counseling or Combined Psychology program.</td>
</tr>
<tr>
<td>PSY 6360</td>
<td>Introduction to the Practice of Professional Psychology</td>
<td>3</td>
<td>Fall, Summer</td>
<td></td>
</tr>
</tbody>
</table>
Observation and practice of clinical skills, while linking theory to case conceptualization and techniques of intervention. Introduction and evaluation of students on logistical aspects of psychological practice. Course has strong applied focus, while integrating theories of practice.

Prerequisite/Restriction: PSY 6350.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

PSY 6370 - Practicum in School Counseling
3 credits

Supervised practicum in public school setting, under direction of licensed school counselor. Taken by students in School Counseling master’s program.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Spring

PSY 6380 - Practicum in School Psychology
3 credits

Supervised practicum in school psychology in public school or closely related setting. Taken by second-year students in School Psychology master’s program.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6410 - Psychoeducational Assessment
3 credits

Training and supervised experience in assessment of school-age and preschool-age children. Administration and interpretation of cognitive, developmental, and academic achievement measures, along with other psychoeducational assessment instruments and methods.

Semester(s) Traditionally Offered: Spring

PSY 6450 - Introduction to School Psychology
1 credit

Introductory overview of field of school psychology. Role and function of school psychologist, historical context of school psychology, and trends and new developments in service provision.

Prerequisite/Restriction: Matriculation into School Psychology master’s program or Combined Psychology doctoral program.

Semester(s) Traditionally Offered: Fall

PSY 6460 - Professional Issues in School Counseling and School Psychology
3 credits

Legal, ethical, and professional issues relevant to school counselors and school psychologists. Issues and practices in providing counseling and psychological services to “at-risk” students.

Prerequisite/Restriction: Graduate standing in psychology or instructor’s consent.

Semester(s) Traditionally Offered: Spring

PSY 6470 - Health Psychology
3 credits

Explores psychological and behavioral principles relating to health and illness. Focuses on development and maintenance of health behaviors. Emphasizes integration of research findings with clinical intervention.

Prerequisite/Restriction: Graduate standing in Psychology; or graduate standing in Health, Physical Education and Recreation.

Semester(s) Traditionally Offered: Fall

PSY 6500 - Interdisciplinary Workshop
1-2 credits

Series of self-instructional modules and videos and a variety of elective training. Module topics include developmental disabilities, legal aspects and issues, assessment, intervention, assistive technology, transition, and prevention/intervention for aggression and violence.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6510 - Social Psychology
3 credits

Provides students with common knowledge base in social psychology. Emphasizes recent developments in the field, while providing an in-depth overview of classic
research in the field.

Semester(s) Traditionally Offered: Spring

PSY 6530 - Developmental Psychology
3 credits

Advanced survey course in general developmental psychology. Theory and research in human development across the lifespan, with particular emphasis on child and adolescent development.

Semester(s) Traditionally Offered: Fall

PSY 6570 - Introduction to Educational and Psychological Research
3 credits

Provides introduction to research methods, including identification of research problem, review and evaluation of research literature, and design and implementation of research project.

Prerequisite/Restriction: PSY 2800.

Cross-listed as: EDUC 6570.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6600 - Research Design and Analysis I
3 credits

Research design and statistical concepts for research in education, human services, and psychology, with emphasis on the selection and interpretation of statistical analyses.

Prerequisite/Restriction: EDUC 6570/PSY 6570, passing score on 6600 Pretest via WebCT, and permission of instructor.

Cross-listed as: EDUC 6600.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6630 - Supervision and Consultation in Psychological and Educational Settings
3 credits

Introduction to skills and research fundamental to consultation and supervision, with particular emphasis on educational settings. Majority of course devoted to instruction in the skills required through applied case work.

Prerequisite/Restriction: Matriculation into School Psychology or Combined Psychology Program.

Semester(s) Traditionally Offered: Spring

PSY 6650 - Theories of Learning: The Behavioral Perspective
3 credits

In-depth examination of the major behavioral theories of learning, including classical and operant conditioning.

Semester(s) Traditionally Offered: Fall

PSY 6660 - Cognition and Instruction
3 credits

Survey of theory and principles in cognitive psychology, with special emphasis on applying these principles in instructional settings.

Semester(s) Traditionally Offered: Spring

PSY 6750 - Evidence-Based Practice II: Adults
2 credits

Introduction to application of evidence-based practice, focusing on adults.

Semester(s) Traditionally Offered: Spring

PSY 6790 - Psychological Principles and Individuals who are Deaf and Hard of Hearing
3 credits

Psychological theories and research used to describe the deaf and hard of hearing. Exploration of principles that can be used in helping these individuals achieve emotional well-being.

Cross-listed as: PSY 4790 and COMD 6790/COMD 4790.

Semester(s) Traditionally Offered: Spring

PSY 6800 - Addictive Behaviors
3 credits

Provides students with an overview of the theoretical issues, research, and models that underlie our
understanding of behavioral syndromes commonly referred to as “addictive behaviors.” Emphasizes chemical dependency problems, as well as the well-studied pattern of “addiction.”.

Semester(s) Traditionally Offered: Fall

PSY 6810 - Seminar
1-3 credits

Special topics designed to help students develop in-depth knowledge of emerging research, theory, and practice in psychology. Taught in seminar format by USU faculty or visiting scholars.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6820 - Clinical Applications of Biofeedback
3 credits

Training in clinical applications of biofeedback for treating common health, psychological, and stress-related problems. Practical experience provided in use of different modalities of biofeedback (e.g., neurofeedback, skin temperature training, and electrodermal training). Stresses importance of integrating biofeedback into other appropriate treatments.

Prerequisite/Restriction: Graduate standing in psychology or instructor’s consent.

Semester(s) Traditionally Offered: Fall

PSY 6850 - Introduction to the Combined Doctoral Program
1 credit

This seminar is designed to orient beginning PhD students to the combined program and to the School of Graduate Studies. Opportunity provided for students to meet and talk with all faculty members concerning their research. Students also begin their own research and become acquainted with required paperwork for their program.

Semester(s) Traditionally Offered: Fall

PSY 6880 - Transcultural Assessment Lab
1 credit

Psychoeducational assessment laboratory experience to be taken by students in the School Psychology and Combined Psychology programs.

Corequisite: PSY 6290.

Semester(s) Traditionally Offered: Spring

PSY 6890 - Assessment of Child and Adolescent Psychopathology and Personality
3 credits

Theoretical foundations and applied training in methods of assessing and classifying behavioral, social, and emotional problems of children and adolescents.

Prerequisite/Restriction: Matriculation into Combined Psychology doctoral program or School Psychology program.

Semester(s) Traditionally Offered: Summer

PSY 6900 - Independent Study
1-3 credits

Individual discussion and intensive study of a particular problem or area.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6910 - Independent Research
1-3 credits

Experiments and demonstration projects are conducted and reported.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6930 - University Teaching Apprenticeship
1-3 credits

Prepares graduate students for college teaching. Students learn to prepare study guides, examinations, and lectures, and learn to use audio-visual aids. Students also examine various current methods of instruction and course evaluation schemes.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6950 - Internship in School Psychology
3 credits

Internship in approved school system involving assessment, counseling, consultation, and program development, under the supervision of a certified school psychologist.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6970 - Thesis
1-6 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 6990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7020 - Advanced Evaluation Methodology and Techniques
3 credits

Provides advanced theory and practice in focus group interviews, on-site visit techniques, observation and anchor scales, multiple-site evaluation standards, and advanced reporting techniques.

Prerequisite/Restriction: EDUC 6010/PSY 6010.

Semester(s) Traditionally Offered: Spring

PSY 7030 - Instrument Development
3 credits

In-depth study of factors and techniques critical for designing and developing evaluation and research instruments.

Semester(s) Traditionally Offered: Fall

PSY 7040 - Practicum in Evaluation Planning and Contracting
3 credits

Provides detailed information on methods for planning program evaluations, negotiating agreements with client/sponsor, and finalizing evaluation contract.

Prerequisite/Restriction: EDUC 6010/PSY 6010.

Semester(s) Traditionally Offered: Spring

PSY 7050 - Internship in Program Evaluation
1-9 credits

Experience in practical aspects of program evaluation through planned, supervised evaluation project participation approved by student's supervisory committee.

Prerequisite/Restriction: EDUC 6010/PSY 6010.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7060 - Internship in Research
1-9 credits

Research experience gained through conducting planned, supervised research project.

Prerequisite/Restriction: Approval by supervisory committee and EDUC 6570/PSY 6570.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7070 - Advanced Measurement Theories and Practice
3 credits

Covers psychometric topics, including classical test theory, generalizability theory, item response theory, and issues concerning bias in psychological testing.

Prerequisite/Restriction: PSY 5330/PSY 6330, EDUC 6600/PSY 6600.

Semester(s) Traditionally Offered: Spring

PSY 7090 - Experimental and Applied Psychological Science Program Seminar
Provides opportunity for doctoral students in the Experimental and Applied Psychological Science Program to meet on a regular basis to discuss journal articles and explore student and faculty research projects.

Repeatable for credit. Pass/Fail only.

Semester(s) Traditionally Offered: Fall

PSY 7100 - Biological Basis of Behavior
3 credits

Explores normal and abnormal behavior from a basic neuroanatomical/neurophysiological perspective. Discusses pharmacological/nonpharmacological applications.

Semester(s) Traditionally Offered: Spring

PSY 7110 - Advanced Theories in Cognitive Psychology
3 credits

In-depth study of theories, models, and current research in the field of cognitive psychology, including memory, perception, problem-solving, and decision making.

Prerequisite/Restriction: PSY 4420 or PSY 6660.

Semester(s) Traditionally Offered: Fall

PSY 7230 - Theory and Research in Personality
3 credits

Overview of theoretical approaches, research, and clinical applications regarding personality differences.

Semester(s) Traditionally Offered: Spring

PSY 7250 - Professional Ethics and Standards
1-3 credits

Designed to train clinicians and researchers in the field of psychology to operate within the professional ethics and standards of the field.

Semester(s) Traditionally Offered: Spring

PSY 7270 - Lifespan Psychopathology
3 credits

Summarizes research on risk, epidemiology, and etiological perspectives regarding emotional and behavioral disorders of children, adolescents, and adults. Emphasizes classification and diagnosis of these disorders utilizing the DSM system.

Semester(s) Traditionally Offered: Fall

PSY 7320 - Advanced Personality Assessment
2 credits

Theory and clinical training in personality assessment, with additional techniques than those covered in PSY 6320. Focuses on the comprehensive scoring system of Rorschach.

Prerequisite/Restriction: PSY 6320 a permission of instructor.

Semester(s) Traditionally Offered: Summer

PSY 7350 - Integrated Practicum with Adults, Adolescents, and Children
3 credits

Doctoral-level practicum in a community setting. Supervised experience with evidence-based practice applied to diverse clients, including adults, adolescents, and children. Appropriate assessment, intervention, and consultation relevant to diverse clients and problems.

Prerequisite/Restriction: Permission of program chair.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7360 - Practicum in Clinical Child/School Psychology
3 credits

Doctoral-level practicum in a school or related setting, focused on intervention with children and adolescents. Supervised experience in developmental, emotional, and/or school-related problems. Includes assessment and consultation with teachers, parents, and others.

Prerequisite/Restriction: Permission of program chair.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7370 - Practicum in Counseling/Clinical Psychology
3 credits
Doctoral-level practicum in a clinical/counseling setting, focused on intervention with young adult and adult populations. Supervised experience in individual, group, and/or family intervention. Includes psychological assessment and consultation with relevant individuals.

Prerequisite/Restriction: Permission of program chair.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7380 - Practicum in Psychology
1-6 credits

Doctoral-level practicum in a variety of health service settings. Supervised experience in individual, group, and family psychotherapy assessment and consultation as needed.

Prerequisite/Restriction: Permission of program chair.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7610 - Measurement, Design, and Analysis II
3 credits

Advanced treatment of research design and statistical concepts and issues in educational, human services, and psychological research.

Prerequisite/Restriction: EDUC 6600/PSY 6600.

Cross-listed as: EDUC 7610.

Semester(s) Traditionally Offered: Spring, Summer

PSY 7670 - Literature Reviews in Education and Psychology
2 credits

Advanced concepts in designing, writing, and critiquing literature reviews.

Prerequisite/Restriction: PSY 6600/EDUC 6600 or permission of instructor.

Cross-listed as: EDUC 7670.

Semester(s) Traditionally Offered: Spring, Summer

PSY 7700 - Grant Writing
3 credits

Students learn to identify funding sources, select strategies for seeking resources, and write proposals for research, development, training, and service activities in education, psychology, and related fields.

Prerequisite/Restriction: PSY 6570/EDUC 6570.

Semester(s) Traditionally Offered: Spring

PSY 7780 - Multivariate Methods in Psychology and Education
3 credits

Focuses on application of multivariate methods (factor analytic techniques, structural equation modeling, canonical correlation, multivariate analysis of variance, etc.) in research and measurement in psychology, education, and other social and behavioral sciences.
Prerequisite/Restriction: EDUC 6600, EDUC 7610/PSY 6600, PSY 7610.

Semester(s) Traditionally Offered: Fall

PSY 7810 - Seminar
1-3 credits

Special topics designed to help students develop in-depth knowledge of emerging research, theory, and practice in psychology. Taught in seminar format by USU faculty or visiting scholars.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Page: 1 <- Back 10 ... 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 -> 55

Psychology

PSY 7820 - Neuropsychology: Principles and Assessment
2 or 4 credits

Overview of neuropsychological symptoms, common syndromes, and underlying neural structures. Coverage of neuropsychological assessment approaches, diagnostic issues, and supervised experience with selected neuropsychological tests. Includes some discussion of rehabilitation, but primarily emphasizes assessment.

Semester(s) Traditionally Offered: Summer

PSY 7840 - Psychopharmacology
1 credit

Provides psychology graduate students with basic working knowledge of the field of psychopharmacology and the medical use of psychotropic drugs.

Prerequisite/Restriction: PSY 6320.

PSY 7850 - Internship and Professional Development Seminar
1 credit

Advanced orientation to issues and trends in professional psychology. Internship, including application process. Also overviews remaining program requirements. Focuses on continuing development of good professional decision-making skills.

Semester(s) Traditionally Offered: Spring

PSY 7900 - Independent Study
1-3 credits

Individual discussion and intensive study of a particular problem or area.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7910 - Independent Research
1-3 credits

Experiments and demonstration projects are conducted and reported.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7950 - Internship in Professional Psychology
1 credit

One-year, supervised, full-time internship required of doctoral candidates in professional psychology (clinical, counseling, and/or school psychology).

Prerequisite/Restriction: All doctoral coursework completed, with the possible exception of the dissertation if approved by the student’s committee, prior to initiating the internship.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7970 - Dissertation
1-18 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PSY 7990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Public Health

PUBH 3120 - Family and Community Health
3 credits

Focuses on health aspects of various population groups within the community. Particular emphasis placed on guidelines for optimal family health.

Semester(s) Traditionally Offered: Spring

PUBH 3310 - Occupational Health and Safety
3 credits

Covers the principles of occupational health and safety, including regulatory standards. Emphasizes on-the-job health and safety problems from the occupational health and safety professional and management view.

Semester(s) Traditionally Offered: Fall

PUBH 3610 - Environmental Management
3 credits

Introduction to environmental health, emphasizing relationships among environmental quality, public health, environmental and occupational health regulations, human health risk assessment, institutions, and engineered systems in environmental health management.

Prerequisite/Restriction: CHEM 1210; BIOL 1610 or University Studies Breadth Life Sciences (BLS) course; MATH 1210.

Corequisite: ENGL 3080

Cross-listed as: CEE 3610

Semester(s) Traditionally Offered: Fall

PUBH 3870 - Professional/Technical Writing in Civil and Environmental Engineering (CI)
CI Communications Intensive
2 credits

Gives CEE students intensive practice with oral and written communication in business and technical CEE writing.

Corequisite: CEE 3610

Cross-listed as: CEE 3870

Semester(s) Traditionally Offered: Fall

PUBH 4000 - Public Health Field Experience
3-6 credits

Field experience in the practice of public health, as appropriate to each student's area of public health emphasis: public health education, environmental health, or industrial hygiene.

Prerequisite/Restriction: Junior standing in public health.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

PUBH 4030 - Communicable Disease Control
3 credits

Comprehensive study of communicable diseases, including etiological agents, reservoirs of infection, and mechanisms of transmission, control, and prevention.

Prerequisite/Restriction: Recommended a course in microbiology.

Semester(s) Traditionally Offered: Fall

PUBH 4040 - Fundamentals of Epidemiology
3 credits

Introduction to the study of the distribution and causes of communicable and noncommunicable diseases of humans and other animals.

Prerequisite/Restriction: Recommended a course in statistics.

Semester(s) Traditionally Offered: Spring

PUBH 4300 - Industrial Hygiene Seminar
1 credit

Participant seminar on current developments in industrial hygiene.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

PUBH 4310 - Industrial Hygiene Recognition of Hazards
4 credits

Through classroom and field experiences, provides an introduction to industrial hazards and familiarizes students with manufacturing and industrial processes in which industrial hygienists commonly work.

Prerequisite/Restriction: PUBH 3310 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall

PUBH 4320 - Industrial Hygiene Chemical Hazard Evaluation
3 credits

Survey of principles and methods used to evaluate industrial chemical health hazards. Practical application in a field sampling project.

Prerequisite/Restriction: PUBH 3310.

Semester(s) Traditionally Offered: Spring

PUBH 4330 - Industrial Hygiene Physical Hazards
3 credits

Through lectures and labs, covers the potential health effects, methods of exposure evaluation, and principles of control of noise, vibration, heat and cold, and nonionizing and ionizing radiation hazards that can occur in the workplace.

Prerequisite/Restriction: PUBH 3310 or PUBH 4310.

Semester(s) Traditionally Offered: Spring

PUBH 4380 - Industrial Hygiene Internship
3-6 credits

Field experience in the practice of industrial hygiene. Participation in an active program serving employees in either the private or public sector.

Prerequisite/Restriction: PUBH 4300, PUBH 4320, and PUBH 4330.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PUBH 4410 - Industrial Safety
3 credits

Through lectures, demonstrations, and hands-on activities, covers recognition and control of industrial safety hazards (including power tools, fire, electricity, excavations, confined spaces, and falls), material handling, process safety, protective equipment, safety promotion and training, and standards and programs.

Semester(s) Traditionally Offered: Spring

PUBH 4850 - Special Topics in Public Health
1-3 credits

Prerequisite/Restriction: Junior standing in public health.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

PUBH 5000 - Public Health Seminar
1 credit

Participant seminar on current problems in public health.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

PUBH 5330 - Industrial Hygiene Chemical Hazard Control (QI)
QI Quantitative Intensive
3 credits

Covers methods to control chemical occupational health hazards, with an emphasis on the function, design, and management of local exhaust ventilation.

Prerequisite/Restriction: PUBH 4310, MATH 1210.

Semester(s) Traditionally Offered: Fall

PUBH 5340 - Industrial Hygiene and Safety Programs
2 credits

Provides students with the foundation to administer and manage occupational health and safety programs commonly encountered in the workplace.
Prerequisite/Restriction: PUBH 4320 and PUBH 4330.

Semester(s) Traditionally Offered: Spring

PUBH 5400 - Environmental Toxicology
3 credits

Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.

Cross-listed as: ADVS 5400/ADVS 6400 and BIOL 5400/BIOL 6400 and PUBH 6400

Semester(s) Traditionally Offered: Spring

PUBH 5500 - Public Health Management (CI)
CI Communications Intensive
2 credits

Presentation of basic organizational and financial management tools that students will utilize in written and oral reports on an educational, environmental, or occupational health problem of their choice.

Prerequisite/Restriction: PUBH 4000 or PUBH 4380 or permission of instructor.

Cross-listed as: PUBH 6400.

Semester(s) Traditionally Offered: Fall, Spring

PUBH 5670 - Hazardous Chemicals Handling and Safety
2 credits

Provides students with necessary skills and knowledge for working safely in areas associated with hazardous chemicals. Topics covered include: regulations, exposure routes, toxicology, chemical and physical hazards, personal protective equipment, sampling, monitoring, decontamination, and emergency response procedures.

Prerequisite/Restriction: CHEM 1210

Cross-listed as: CEE 5670

Semester(s) Traditionally Offered: Spring

PUBH 5730 - Analysis and Fate of Environmental Contaminants
3 credits

Provides students with understanding of methods used in analysis of environmental samples for organic contaminants. Examines various properties and processes determining the fate of organic contaminants in the environment.

Prerequisite/Restriction: Grades of C- or better in CHEM 1210 and CHEM 1215.

Cross-listed as: PUBH 6730 and CEE 5730/CEE 6730.

Semester(s) Traditionally Offered: Fall

PUBH 5790 - Accident and Emergency Management
3 credits

Introduction to fundamentals of accident, hazard, and emergency management. Topics include legislation; chemical safety fundamentals; fire, explosion, and spill fundamentals; contaminant air transport fundamentals; hazard and risk assessment; dispersion applications; and hazard and risk management applications.

Prerequisite/Restriction: CHEM 1220

Cross-listed as: CEE 5790

Semester(s) Traditionally Offered: Spring

PUBH 6400 - Environmental Toxicology
3 credits

Presents in-depth survey of toxic chemicals present in the environment, environmental factors impacting fate of chemicals, potential biological effects associated with chemical exposures, and methods of reducing associated risks.

Cross-listed as: PUBH 5400 and ADVS 6400/ADVS 5400 and BIOL 6400/BIOL 5400.

Semester(s) Traditionally Offered: Spring

PUBH 6730 - Analysis and Fate of Environmental Contaminants
3 credits

Provides students with understanding of methods used in analysis of environmental samples for organic contaminants. Examines various properties and
processes determining the fate of organic contaminants in the environment. Taught first half of fall semester.

Prerequisite/Restriction: Grades of C- or better in CHEM 1210 and CHEM 1215

Cross-listed as: CEE 5730 and CEE 6730 and PUBH 5730

Semester(s) Traditionally Offered: Fall

Rehabilitation Counseling

REH 1010 - Disability and Society (BSS)
BSS Breadth Social Sciences
3 credits

Discussion of definitions and types of disabilities, ethical issues, society’s prejudice and discrimination against people with disabilities, and the individual’s adjustment to the disability experience. Disability as a natural part of life.

Cross-listed as: SPED 1010.

Semester(s) Traditionally Offered: Fall, Spring

REH 6100 - Introduction to the Profession of Rehabilitation Counseling
2 credits

Overview of history, philosophy, and legal basis of rehabilitation programs, both public and private. Independent living programs. Roles of the rehabilitation counselor and the process of rehabilitation. Skill development including literature use, writing, and professional organizations.

Semester(s) Traditionally Offered: Fall

REH 6110 - Medical Aspects of Disability
3 credits

Overview of basic medical issues affecting employment and independent living for persons with disabilities. Explores basic anatomy and systems, as well as disorders and diseases of these systems. Covers medical terminology applicable to rehabilitation counseling.

Semester(s) Traditionally Offered: Fall

REH 6120 - Psychosocial Aspects of Disability
3 credits

Explores psychological and sociological aspects of disabilities, including adjustment factors in living with disabilities (i.e., individual, family, sexuality, other service providers, etc.). Examines societal attitudes, women’s issues, and deaf culture issues. Includes group counseling applications for persons with disabilities.

Semester(s) Traditionally Offered: Summer

REH 6130 - Rehabilitation Counseling Skill Development
3 credits

Utilizes role playing of simulated interviews and rehabilitation counseling sessions to develop the basic skills necessary to function as a human service helper.

Prerequisite/Restriction: Permission of instructor.

Corequisite: REH 6140.

Semester(s) Traditionally Offered: Summer

REH 6140 - Practicum in Rehabilitation
1-3 credits

Under faculty supervision, students receive minimum of 100 hours of firsthand experience working with persons with disabilities in rehabilitation agency or facility. Must be taken the first time concurrently with REH 6130. With faculty approval, may be repeated for credit.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 6150 - Rehabilitation Services and Resources
3 credits

Coordination of community resources, individual assessment information, ethical issues, eligibility determination, and development of individualized rehabilitation programs and independent living plans. Time, fiscal, and caseload management skills for rehabilitation professionals. Emphasizes client choice in rehabilitation planning.

Semester(s) Traditionally Offered: Spring
REH 6160 - Job Analysis, Development, and Placement for Persons with Disabilities
3 credits
Applies career development theories to job placement. Presents job placement factors resulting in employment for persons with disabilities, including job analysis, job development and retention, advocacy, assistive technology, ADA, occupational information systems, and labor market analysis.

Semester(s) Traditionally Offered: Spring

REH 6170 - Internship in Rehabilitation Counseling
3-12 credits
Direct supervised provision of rehabilitation services to persons with disabilities in a community facility or agency. Total of 300 hours of direct service required for each 6 semester credits. Repeatable for up to 12 credits.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 6180 - Rehabilitation of Persons with Severe Mental Illness
2 credits
Overview of rehabilitation of persons with severe mental illness, including psychopharmacology, housing, case management, job placement, diagnosis (DSMIV-TR), and social learning programs. Includes information on rehabilitation of persons experiencing substance abuse, dual diagnoses, and learning disorders.

Semester(s) Traditionally Offered: Spring

REH 6190 - Introduction to Assessment in Rehabilitation
2 credits
Addresses vocational assessment for persons with disabilities. Includes overview of traditional vocational assessment, but focuses on contemporary methodology developed for individuals with severe disabilities. Discussion of functional assessment, including client choice and ecological assessment issues.

Semester(s) Traditionally Offered: Fall

REH 6200 - Theories of Counseling Applied to Persons with Disabilities
3 credits
Introduction to established counseling theories and their implications for providing services to persons with disabilities. Discussion of individual and group counseling paradigms. Emphasizes development of students' individual counseling philosophies.

Semester(s) Traditionally Offered: Fall

REH 6210 - Advanced Assessment in Rehabilitation
2 credits
Introduction to vocational evaluation principles and their application in using commercially available vocational evaluation systems. Actual practice with the systems (including integrated report writing) in the rehabilitation services clinic.

Semester(s) Traditionally Offered: Summer

REH 6220 - Culturally Valid Rehabilitation Practices
3 credits
Analysis of the effect of cultural/ethnic/racial/linguistic background in the rehabilitation counseling setting, including acceptance/perception of disability, and successful application, process, and rehabilitation outcome. Practice applications include provision of culturally sensitive counseling, vocational evaluation, and job placement.

Semester(s) Traditionally Offered: Summer

REH 6230 - Introduction to Rehabilitation Research
3 credits
Provides introduction to research methods in rehabilitation and disability studies, including the various types of research designs and the use of statistical methods. Introduces students to empirical research journals in rehabilitation.

Semester(s) Traditionally Offered: Spring

REH 6240 - Ethical Decision-Making in Counseling
2 credits
Ethical standards and decision-making, current issues, and multicultural considerations concerning counseling.
with emphasis on professional practice. Discussion of competency areas including professional identity, social and cultural diversity, counselor roles in social justice, advocacy, conflict resolution, and technological strategies.

Semester(s) Traditionally Offered: Spring

REH 6250 - Group Counseling Techniques and Theories in Rehabilitation Counseling
3 credits

Introduction to group counseling, including theory and practice specific to persons with disabilities. Students will participate in small and large group sessions while learning about group formation, significant stages of the group process, and ethical/legal issues related to group counseling.

Semester(s) Traditionally Offered: Summer

REH 6260 - Human Growth and Development in Rehabilitation
3 credits

Overview of major developmental theories and the way in which these theories relate to various types of disabilities with differing times of onset. Explores issues faced by individuals with disabilities at each of the life stages, as well as methods for providing effective and appropriate support.

Semester(s) Traditionally Offered: Fall

REH 6510 - Transition to Supported/Competitive Employment
2 credits

This course provides students with knowledge to understand and analyze evidence-based transition to employment for individuals with disabilities.

Corequisite: REH 6520 or SPED 6520

Cross-listed as: SPED 6520

Semester(s) Traditionally Offered: Spring, Summer, Even Years

REH 6530 - Transition to Post-Secondary Education
2 credits

This course provides students with knowledge to understand and analyze evidence based transition services leading to post-secondary education for individuals with disabilities.

Corequisite: REH 6540 or SPED 6540

Cross-listed as: SPED 6530

Semester(s) Traditionally Offered: Fall, Even Years

REH 6540 - Transition Practicum II: Services Leading to Post-Secondary Education
2 credits

This practicum (i.e., field based applied course) provides students with competencies necessary to carry out evidence based transition services leading to post-secondary education of individuals with disabilities.

Corequisite: REH 6530 or SPED 6530

Cross-listed as: SPED 6540

Semester(s) Traditionally Offered: Fall, Even Years

REH 6560 - Special Topics in Rehabilitation
1-6 credits

Opportunity to provide specialized training in topics unique to rehabilitation. Topics cover many disability, employment, and independent-living issues.

Repeatable for credit

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 6900 - Independent Study
1-3 credits
Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 6910 - Independent Research
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 6970 - Thesis
1-6 credits

Repeatable for credit.

REH 6990 - Continuing Graduate Advisement
1-3 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7040 - Literature Review
1-3 credits

Guided experience in conducting a comprehensive and systematic review of literature on a topic related to rehabilitation counseling.

Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring

REH 7060 - Research Internship
1-3 credits

Guided experience in conducting rehabilitation/disability research.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7070 - Internship in Grant Writing
1-3 credits

Guided experience in preparation of grant proposals.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.

REH 7080 - Writing for Publication
1-3 credits

In-depth, individualized experience in which student chooses a topic area and writes a scholarly manuscript, which is submitted for publication in an academic journal.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7090 - Professional Conference Presentation
1-3 credits

Individualized, supervised experience in which student makes professional conference presentation. Emphasizes value of intellectual discourse with one’s colleagues on a topic of interest, chosen by the student.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7330 - Supervision Internship
1-3 credits

Guided experience in supervising master’s students during practica and internship, as well as during other clinical experiences.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7340 - College Teaching Internship
1-3 credits

Guided experience in teaching university courses.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7730 - Disability Law and Policy
3 credits

Examines disability issues as addressed through legislative process. Analyzes key statutes and case law, reflecting historical and current landmarks in disability policy, in the context of the disability rights movement,
societal perceptions, and barriers to implementation.

Semester(s) Traditionally Offered: Spring

REH 7740 - Sociopolitical Construction of Disability
3 credits

Examines disability experience from four different perspectives: biomedical, environmental, functional, and sociopolitical. Also explores society's response to disability. Discusses history and perspective of the Disability Rights movement.

Semester(s) Traditionally Offered: Fall

REH 7820 - Special Topics in Rehabilitation Counseling
1-3 credits

Critical analysis of a variety of rehabilitation counseling issues and trends. Empirical and theoretical information presented in a seminar format.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7840 - Preliminary Examinations
1 credit

Preparation for the examination and successful completion of the written examination. Students analyze published rehabilitation research and demonstrate their ability to integrate knowledge of theoretical and empirical issues, providing an early assessment of doctoral-level competencies.

Semester(s) Traditionally Offered: Summer

REH 7900 - Independent Study
1-3 credits

Individual discussion and intensive study of particular problem or area.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7910 - Independent Research
1-3 credits

Students outline and conduct research under supervision.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7930 - Internship in Rehabilitation Counseling
1-12 credits

Professional, supervised internship experience for doctoral students.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7940 - Journal Reading Group
1-2 credits

Seminar discussion of recent empirical and theoretical articles concerning rehabilitation counseling, disability policy, and related fields.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7970 - Dissertation
1-15 credits

Variable credit for dissertation project associated with doctoral program in disability disciplines.

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

REH 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Religious Studies

RELS 1010 - Introduction to Religious Studies (BHU)
BHU Breadth Humanities
3 credits

Historical and comparative survey of the principal beliefs
and practices of the world’s religions, as well as an exploration of their interplay with the cultures in which they exist. Following general introduction to the study of religion, course includes units on Hinduism, Buddhism, Chinese and Japanese religions, Islam, Judaism, Christianity, and the "new religions" in America.

RELS 3010 - Introduction to Buddhism
3 credits

General survey of historical development, basic doctrine, and practice of Hinayana and Mahayana Buddhism.

Cross-listed as: HIST 3010.

RELS 3020 - Introduction to Hinduism
3 credits

Surveys history, doctrinal developments, and sociological concerns of Hinduism from the Vedic Period through the Modern Period. Focuses primarily on Hindu religious thought as applied to Hindu life through various modes of religious action.

Cross-listed as: HIST 3020.

RELS 3030 - Introduction to Islam
3 credits

This course will focus on understanding Islam through the examination of what Muslim jurists, theologians, exegetes and traditionalists think of their own traditions. This course will focus on the core beliefs, practices, scriptures and sentiments that have defined historically Muslim communities. In addition, the course aims to examine the spiritual dimensions, the theological discourses and the legal maxims of the Muslim traditions.

Cross-listed as: ARBC 3030

RELS 3040 - Religion, Evil and Human Suffering
3 credits

Considers religion’s contrasting understandings of and responses to the world’s most perpetual and pressing problem: evil and human suffering.

RELS 3090 - Introduction to Shamanism: Shamanic Healing for Personal and Planetary Transformation
3 credits

Course provides introduction to methods utilized by shamanic healers as well as background information on indigenous views of relationships between matter, mind and spirit to help students understand how shamanic healing is used in multiple settings.

Cross-listed as: ANTH 3090

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

RELS 3710 - Folklore Colloquium (CI)
CI Communications Intensive
3 credits

Issues, problems, and methodologies in folklore study. Focus and instructor variable.

Cross-listed as: ENGL 3710 and HIST 3710.

Semester(s) Traditionally Offered: Spring

RELS 3990 - Introduction to Religious Studies Methodology
3 credits

Pre-major course helping students to understand the discipline of religious studies. Explores the questions asked by religious studies, as well as the methods used to answer these questions. Helps students gain an understanding of the various approaches to the study of religion and the history of attempts to understand religion in cultural contexts.

RELS 4010 - Buddhism in the West
3 credits

One-semester introduction to Buddhism in the Western world for nonspecialists in Buddhism. Focuses on development of Buddhism as a Western religious phenomenon. Presents interpretive, historical introduction to Buddhism in the West.

Cross-listed as: HIST 4010.

RELS 4520 - Editing Internship
2 credits

Training in requirements of editorial work for scholarly journals and books. Emphasizes editing techniques and mechanics of editorial work. Can be repeated for credit only once.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

RELS 4560 - Women in Islam (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Within a religious and historical framework, it explores topics such as gender and social roles, women's rights, veiling and dress, female circumcisions, arranged marriages, education, employment, parenting, honor killings, and politics in the lives of Islamic women. A basic knowledge of Islam is recommended before enrolling.

Cross-listed as: HIST 4560

RELS 4790 - American Religious History
3 credits

Varieties of American religious experience from settlement to the present.

Cross-listed as: HIST 4790.

Semester(s) Traditionally Offered: Fall

RELS 4795 - Biography, Autobiography and Joseph Smith
3 credits

Examines the life and thought of one of America's most complex and creative religious figures.

Cross-listed as: HIST 4795.

RELS 4910 - Special Topics in Religious Studies
1-3 credits

Examination of special areas and themes in religious studies.

Repeatable for credit.

RELS 4930 - Directed Readings
1-3 credits

Directed readings in any special religious studies field. For each credit granted, a minimum of four books must be read.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

RELS 4990 - Religious Studies Capstone
3 credits

Students write a substantial research paper dealing with a religious studies topic and demonstrating their command of the research methods, documentation, and style of professional communications used in the discipline.

Semester(s) Traditionally Offered: Fall, Spring

RELS 5740 - Art and Religion: Topics in Sacred Art
3 credits

Discussion-based course investigating relationships between religion and the arts. May focus on any period of history or region of the world, depending on scholarly interests of instructor.

Cross-listed as: ARTH 5740.

Semester(s) Traditionally Offered: Spring

RELS 6410 - Special Topics in Mormon History and Culture
3 credits

Intensive readings and group discussions of selected topics in Religious Studies.

Cross-listed as: HIST 6410.

Repeatable for credit.

RELS 6420 - Special Topics in Religious History
3 credits

Intensive reading and group discussions of selected topics in Religious History

Cross-listed as: HIST 6420

Repeatable for credit.

RELS 6900 - Directed Readings
1-3 credits

Directed readings at the graduate level in any special religious studies field. For each credit granted, a minimum of four books must be read.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.

Russian

RUSS 1010 - Russian First Year I
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: Not open to those with more than one year high school Russian or equivalent.

RUSS 1020 - Russian First Year II
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: RUSS 1010, or not more than three years of high school Russian.

RUSS 2010 - Russian Second Year I
4 credits

Further development of first-year competencies with emphasis on language structure, vocabulary expansion, reading, writing, and conversation in the context of culture.

Prerequisite/Restriction: RUSS 1020 or two or more years of high school Russian.

RUSS 2020 - Russian Second Year II
4 credits

Further development of first-year competencies with emphasis on language structure, vocabulary expansion, reading, writing, and conversation in the context of culture.

Prerequisite/Restriction: RUSS 2010 or three or more years of high school Russian.

RUSS 2880 - Individual Readings
1-4 credits

Individual study of selected readings in Russian.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

RUSS 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Russian culture will also be emphasized. Significant reading and work outside of class are required.

Campus: USU Eastern only

RUSS 3040 - Advanced Russian Grammar and Composition
3 credits

Detailed presentation of Russian grammar. Class discussions and work on oral and written assignments.

Prerequisite/Restriction: RUSS 2020 or equivalent.

Semester(s) Traditionally Offered: Fall

RUSS 3050 - Advanced Russian Grammar and Composition
3 credits

Detailed presentation of Russian grammar. Class discussions and work on oral and written assignments.

Prerequisite/Restriction: RUSS 2020 or equivalent.

Semester(s) Traditionally Offered: Spring

RUSS 3300 - Contemporary Russian Language and Culture (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Discussion of contemporary Russia, including its geography, business, government, literature, art, etc.
Prerequisite/Restriction: RUSS 2020 or equivalent.

RUSS 3510 - Business Russian (CI)
CI Communications Intensive
3 credits

Study of current Russian business and commercial terminology and practices. Development of communication skills for international Russian business purposes.

Prerequisite/Restriction: RUSS 2020 or equivalent.

RUSS 3540 - Russian Translation for Science, Business, and Culture
3 credits

Familiarization with approaches to translation, special grammatical structures, specialized vocabulary, and reference materials and aids. Practical exercises.

Prerequisite/Restriction: RUSS 2020 or equivalent.

RUSS 4880 - Individual Readings
1-4 credits

Readings in technical, scientific, or literary Russian.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

RUSS 4920 - Russian Language Tutoring
1 credit

Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

SCI 4300 - Science in Society
2 credits

Investigation of interactions between current scientific topics and societal goals and concerns. Intended as a capstone course for science teaching majors.

Prerequisite/Restriction: Senior standing and consent of instructor.

Semester(s) Traditionally Offered: Fall, Spring

Secondary Education

SCED 1000 - Volunteer Experience
1 credit

Optional course providing orientation to agencies coordinating volunteer experiences in the community; such experiences are part of standards for admission to secondary teacher education.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SCED 3100 - Motivation and Classroom Management
3 credits

Designed to lead pre-service secondary school teachers to address two questions: (1) What diverse traits, talents, attitudes, and experiences do pre-adolescent and adolescent students bring to the middle school, junior high school, and high school environment? and (2) In light of these diverse traits, talents, attitudes, and experiences, how should teachers work with students to build cooperative classroom communities where students are motivated to engage in productive learning activities?

Semester(s) Traditionally Offered: Fall, Spring

SCED 3210 - Educational and Multicultural Foundations (DSS/CI)
DSS/CI Depth Social Sciences and Communications Intensive
3 credits

Provides preservice teachers with the opportunity to critically examine the political, economic, and educational policies influencing students’ access to equitable educational experiences. Examines historical and philosophical foundations influencing the nature of multicultural education in our democratic society, how personal biases can influence instructional practices, and development of multicultural curriculum relevant to
SCED 3300 - Clinical Experience I
1 credit
First clinical practicum (30 hours minimum) in middle and secondary schools, arranged by instructors. Required at level 1.
Prerequisite/Restriction: Program admission.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring
SCED 3400 - Teaching Science I
3 credits
Laboratory practicum focused on design, practice, and performance of secondary science demonstrations and investigative lab activities. Must be taken at Level 1.
Prerequisite/Restriction: Program admission.
Semester(s) Traditionally Offered: Fall, Spring
SCED 3500 - Teaching Social Studies
3 credits
Methods course focused on social studies curriculum and instruction for preservice secondary teachers with teaching majors or minors in history or any of the social sciences. Should be taken at Level 1.
Prerequisite/Restriction: Program admission.
Semester(s) Traditionally Offered: Fall, Spring
SCED 3600 - Teaching English
3 credits
Methods course focused on English curriculum and instruction for preservice secondary teachers with teaching majors or minors in English. May be taken at either Level 1 or Level 2.
Prerequisite/Restriction: Program admission.
Semester(s) Traditionally Offered: Fall, Spring

SCED 4200 - Reading, Writing, and Technology (CI)
CI Communications Intensive
3 credits
Performance-based class focused on a wide range of academic skills related to reading, writing, and advanced technology access.
Prerequisite/Restriction: Program admission and completion of Level 1.
Semester(s) Traditionally Offered: Fall, Spring
SCED 4210 - Cognition and Evaluation of Student Learning
3 credits
Designed to lead the preservice secondary school teacher to address two questions: (1) How do students construct concepts; discover relationships; and develop knowledge-level skills, comprehension and communication skills, and problem-solving abilities? (2) How do teachers monitor students’ progress, evaluate and communicate their achievement, and interpret the results of system-wide and standardized test results to students and their parents?.
Semester(s) Traditionally Offered: Fall, Spring
SCED 4300 - Clinical Experience II
1 credit
Second clinical practicum (30 hours minimum) in middle and secondary schools, arranged by instructors. Required at level 2.
Prerequisite/Restriction: Program admission and completion of Level 1.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring
SCED 4400 - Teaching Science II
3 credits
Methods course focused on science curriculum and instruction for preservice secondary teachers with teaching majors in any of the science areas. Must be taken at Level 2.
Prerequisite/Restriction: Program admission, completion of Level 1, and SCED 3400.
Semester(s) Traditionally Offered: Spring

SCED 4420 - Multiple Talent Approach to Thinking
2 credits

Explores one model for the teaching of creative and critical thinking embedded in regular curricula. Includes practical application requirements.

Cross-listed as: ELED 4420.

Semester(s) Traditionally Offered: Summer

SCED 4900 - Senior Thesis
1-6 credits

Student-initiated research project under faculty supervision. Requires prior approval of department head, honors committee, and instructor.

Prerequisite/Restriction: Approval of department head.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5400 - Laboratory Practicum
3 credits

Laboratory practicum for inservice teachers, focused on design, practice, and performance of secondary science demonstrations and investigative lab activities.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5500 - Student Teaching Seminar
2 credits

Capstone seminar focused upon student teaching issues, professional development, and principles of effective instruction, emphasizing reflective teaching.

Prerequisite/Restriction: Level 1 and Level 2 completion, and student teaching placement.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5630 - Student Teaching in Secondary Schools
10 credits

Thirteen-week minimum culminating practicum in which students assume full-time teaching responsibilities under direction of cooperating teachers in major and minor fields.

Prerequisite/Restriction: Level 1 and Level 2 completion, and student teaching placement.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5700 - Modified Student Teaching
2-4 credits

Culminating practicum experience for students seeking dual licensure, earning half of their student teaching credit in a secondary school setting.

Prerequisite/Restriction: Program admission and completion of Level 1 and Level 2.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5800 - Secondary School Internship
2-6 credits

Advanced practical teaching experience under combined public school and University supervision. Offered only by arrangement with Director of Field Experiences.

Prerequisite/Restriction: Level 1 and Level 2 completion, and special recommendation.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

SCED 5810 - Social Studies Teaching Methods
3 credits

Guides students in developing a philosophical rationale for teaching social studies. Includes strategies for integrating best practices in and across the curriculum.

Semester(s) Traditionally Offered: Spring

SCED 5820 - Science Teaching Methods
3 credits

Guides students in understanding and identifying attributes of teaching and learning science that are critical to effective instruction. Focuses on developing a safe science learning environment.
Semester(s) Traditionally Offered: Spring
SCED 5830 - English Teaching Methods
3 credits

Designed to give in-service ARL teachers the theoretical grounding for making decisions about all aspects of the secondary English curriculum, including: reading, writing, viewing, listening, and speaking. Examines instruction and assessment.

Semester(s) Traditionally Offered: Fall
SCED 5900 - Independent Study
1-3 credits

Prerequisite/Restriction: Permission of instructor. Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
SCED 6270 - Introduction to Methods, Planning, Assessment, and Technology
4 credits

As one of the pedagogical knowledge requirements for the Alternative Route to Secondary Licensure, this course introduces new teachers to effective teaching methods. Teachers learn how to integrate research-based teaching methods, formal and informal assessments, and technology into their lessons.

Semester(s) Traditionally Offered: Spring
SCED 6555 - Practicum Improvement in Instruction/Seminar
1 credit

To meet the requirements of the Alternative Route to Secondary Licensure program, students should take this practicum during fall semester and then again during spring semester.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
SCED 6900 - Independent Study
1-3 credits

Social Science (USU Eastern)
SLSC 10 - New Student Orientation
0.5 credit

Designed to provide incoming students with a working knowledge of the opportunities and services available to them at USU Eastern. This two-phase course will assist in the student’s transition to college and successful completion of his/her academic goals. During Phase I of orientation, instruction includes an overview of academic regulations, graduation requirements, USU Eastern policies and procedures, the advising process, and course registration. Students are familiarized with USU Eastern resources, personnel, and functions of academic and student support services. During Phase II, students have the opportunity to interact in a social setting with student leaders, student service personnel, faculty advisors, and fellow students, as we seek to establish a connection between the student and campus community.

Campus: USU Eastern only
SLSC 1030 - International Student Orientation
1 credit

Provides first-semester students with knowledge of the services and regulations governing international students while attending USU Eastern. Aids students in their cultural transition to U.S. education and will provide particulars of complying with BCIS (Bureau of Citizenship and Immigration Service) rules and regulations governing F-1 visa holders. Includes an overview of academic regulations, graduation requirements, USU Eastern policies and procedures. Class meets daily for the first three weeks of each semester. Course is required of all new F-1 international students.

Campus: USU Eastern only
SLSC 1050 - College Success Skills
2 credits

Designed to increase the student’s success during the college experience. Emphasizes test-taking strategies, effective note-taking, listening skills, time management and personal issues necessary to survive college.

Campus: USU Eastern only
SLSC 1110 - Leadership Perspectives
1-3 credits

Discusses the styles and skills of leadership, utilizing historic and contemporary models and emphasizing traits of responsible Leadership. Students will develop a
leadership project of their own choosing. They will also research the biography of a significant world leader and present the information to the class; combined with reflection and discussion in small groups on issues of Leadership.

Prerequisite/Restriction: Approval of the course coordinator.

Campus: USU Eastern only

SLSC 1120 - Leadership Perspectives
1-3 credits

Discusses the styles and skills of leadership, utilizing historic and contemporary models and emphasizing traits of responsible Leadership. Students will develop a leadership project of their own choosing. They will also research the biography of a significant world leader and present the information to the class; combined with reflection and discussion in small groups on issues of Leadership.

Prerequisite/Restriction: Approval of course coordinator.

Campus: USU Eastern only

SLSC 1130 - Leadership Perspectives
1-3 credits

Discusses the styles and skills of leadership, utilizing historic and contemporary models and emphasizing traits of responsible Leadership. Students will develop a leadership project of their own choosing. They will also research the biography of a significant world leader and present the information to the class; combined with reflection and discussion in small groups on issues of Leadership.

Prerequisite/Restriction: Approval of course coordinator.

Campus: USU Eastern only

SLSC 1140 - Leadership Perspectives
1-3 credits

Discusses the styles and skills of leadership, utilizing historic and contemporary models and emphasizing traits of responsible Leadership. Students will develop a leadership project of their own choosing. They will also research the biography of a significant world leader and present the information to the class; combined with reflection and discussion in small groups on issues of Leadership.

Prerequisite/Restriction: Approval of course coordinator.

Campus: USU Eastern only

SLSC 1150 - College Student Affairs
1 credit

Course is the first part of an ongoing educational, development, and training program intended to help students be successful as resident assistants and student leaders.

Campus: USU Eastern only

SLSC 1300 - Tutoring Training
1 credit

Designed to teach tutors how to effectively provide students with quality academic assistance, while promoting independent learning. Course covers the following: tutoring policies and procedures, basic tutoring techniques, learning styles, learning disabilities, study skills techniques, and communication and active listening skills. Course will use several types of information delivery including: lectures, videos/DVD’s, and reading material.

Campus: USU Eastern only

SLSC 1800 - Leadership in Civic Engagement
2 credits

Provides students who have been selected as a service leader an opportunity to strengthen leadership skills, work with community agencies, organize and carry out service projects, and work with and encourage students to become involved with service.

Prerequisite/Restriction: Must apply and be selected as a SUN Involvement Center Leader.

Campus: USU Eastern only

Sociology

SOC 1010 - Introductory Sociology (BSS)
BSS Breadth Social Sciences
3 credits
Examination of social behavior of humans and social institutions. Theories and methods for studying society and social issues, along with insights from related disciplines.

Semester(s) Traditionally Offered: Fall, Spring

SOC 1020 - Social Problems
3 credits

Study of major U.S. and international social problems. Examination of how issues are defined as social problems and ways groups attempt to solve the problems.

Semester(s) Traditionally Offered: Fall, Spring

SOC 2370 - Sociology of Gender
3 credits

Examines impacts of social constructions of gender on individual and collective experience. Investigates how gender is shaped through social processes and through the effects of social institutions. Particular attention given to relation of gender to social stratification.

Semester(s) Traditionally Offered: Fall

SOC 2500 - Research Methods for the Social Sciences
3 credits

Introduction to theory and research methodology which will prepare the student to understand, evaluate, and do empirical research. (i.e., an inquiry that seeks general verified explanations for any class of phenomena.) Course includes, but is not limited to, instruction in data collection, sample selection, definition and measurement, surveys, and statistical analysis. Course is a must for every student of the social sciences.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Bi-annually

SOC 2988 - Special Problems
1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

SOC 2999 - Workshop
1-3 credits

Designed to meet the changing needs of the student in Sociology.

Campus: USU Eastern only

SOC 3010 - Social Inequality (DSS)
DSS Depth Social Sciences
3 credits

Examines theories and research concerning how race, class, and gender intersect in the lives of societal members.

Semester(s) Traditionally Offered: Fall, Spring

SOC 3110 - Methods of Social Research (CI)
CI Communications Intensive
3 credits

Methods and techniques of analyzing social data. Examines surveys, field research, observational studies, and other social science techniques. Emphasizes analysis of data and published research.

Prerequisite/Restriction: Completion of 6 credits in departmental courses.

Semester(s) Traditionally Offered: Fall, Spring

SOC 3120 - Social Statistics I (QI)
QI Quantitative Intensive
3 credits

Examines use of statistics in social sciences. Particular focus on use of statistical analysis with surveys and census-type data. Includes parametric and nonparametric statistics utilized most in social analysis.

Prerequisite/Restriction: Completion of 6 credits in departmental courses and grade of C- or better in STAT 1040 or equivalent.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 3200 - Population and Society (DSS)
DSS Depth Social Sciences
3 credits

Examination of interrelationships between population change and social structure in national and international context. Examines contributions of fertility, mortality,
and migration to population characteristics, particularly sex, age, and ethnic composition. Stresses demographic data and analysis.

 Semester(s) Traditionally Offered: Fall, Spring
SOC 3320 - Sociology of Work and Organization
3 credits
Stresses contribution of sociology to the understanding of industry as a social system.

 Semester(s) Traditionally Offered: Spring
SOC 3330 - Medical Sociology (DSS)
DSS Depth Social Sciences
3 credits
In-depth analysis of major contributions of sociology to field of medicine.

 Semester(s) Traditionally Offered: Fall
SOC 3410 - Juvenile Delinquency
3 credits
Focuses on nature, extent, and causes of delinquent behavior. Examines workings of juvenile justice system and programs for delinquency prevention.

 Semester(s) Traditionally Offered: Fall, Spring
SOC 3420 - Criminology
3 credits
Examines theoretical explanations for crime in the U.S. Describes characteristics of major forms of criminal behavior.

 Semester(s) Traditionally Offered: Fall, Spring
SOC 3430 - Social Deviance
3 credits
Examination of sociological perspectives on deviance as they apply to lifestyles, commitment, and social control in American society.

 Semester(s) Traditionally Offered: Fall
SOC 3600 - Sociology of Urban Places (DSS)
DSS Depth Social Sciences
3 credits
Provides historical and international perspective on social, cultural, and spatial characteristics of urban places. Examines changes associated with urbanization processes and the effect of urbanization on community, crime, neighborhoods, and urban space.

 Semester(s) Traditionally Offered: Fall
SOC 3610 - Rural Sociology (DSS)
DSS Depth Social Sciences
3 credits
Examines patterns and processes of social change in rural and nonmetropolitan sectors of the U.S. and other advanced industrial societies. Considers how rural social change is influenced by demographic, economic, political, and natural resource conditions at regional, national, and global scales.

 Semester(s) Traditionally Offered: Fall
SOC 3750 - Sociology of Aging
3 credits
Examination of social context in which aging occurs, the social implications of aging, and attendant social policy issues. Considers both individual and societal aging, using an historical and global approach.

 Semester(s) Traditionally Offered: Fall
SOC 4010 - Contemporary Sociological Theory
3 credits
Critical analysis of major theorists and schools of theory in sociology from the late nineteenth century through recent and current works. Emphasizes contemporary issues, insights, and uses of sociological theory.

 Semester(s) Traditionally Offered: Fall, Spring
SOC 4350 - Political Sociology
3 credits
Examines prevalent theories and concepts related to global development, underdevelopment, and social change, while building an understanding of contemporary global social issues accompanying these processes. Particular emphasis placed on understanding global inequality and regional differences.
Semester(s) Traditionally Offered: Spring

SOC 4420 - Criminal Law and Justice (CI)
CI Communications Intensive
3 credits

Sociological analysis of relationship between law and social control and social change, especially regarding law enforcement, courts, and corrections.

Semester(s) Traditionally Offered: Spring

SOC 4600 - Senior Research Capstone Seminar
3 credits

Students undertake sociological analysis from research question through hypotheses, research design, data collection, data analysis, and presentation. Synthesis of student training in critical thinking and substantive areas in sociology.

Prerequisite/Restriction: SOC 1010, SOC 3010, SOC 3110, SOC 3120, SOC 4010, or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

SOC 4620 - Sociology of the Environment and Natural Resources (DSS)
DSS Depth Social Sciences
3 credits

Social aspects associated with the environment and natural resources. Topics include: environmental attitudes and perceptions, environmentalism as a social movement, resource scarcity and land use, and social change in resource-based communities.

Semester(s) Traditionally Offered: Spring

SOC 4720 - Applied Community Development
3 credits

Uses asset-building model to explore current practice and theory of community development. Organized around service-learning placements with local and regional organizations. Includes reflective evaluation of theories based upon the service-learning experiences.

Prerequisite/Restriction: SOC 1010, SOC 3010, SOC 3110, SOC 3120, SOC 4010; or permission of instructor.

Cross-listed as: SOC 6720.

Semester(s) Traditionally Offered: Spring

SOC 4800 - Seminar in Sociology
1-3 credits

Seminars in various areas of sociology: (a) theory, (b) methodology, (c) demography, (d) social organization, (e) social deviance, (f) social psychology, (g) human ecology, (h) gerontology.

Repeatable for credit

Semester(s) Traditionally Offered: Spring

SOC 4900 - Independent Readings in Sociology
1-5 credits

Independent readings in various areas of sociology: (a) theory, (b) methodology, (c) demography, (d) social organization, (e) social deviance, (f) social psychology, (g) human ecology.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit

Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 5120 - Population and Health
3 credits

Examines current threats to health and longevity among populations in industrialized and developing nations. Evaluates debates surrounding the history of mortality decline. Emphasis is given to the demographic, socioeconomic and environmental determinants of poor health and premature mortality.

Cross-listed as: SOC 6120

Semester(s) Traditionally Offered: Alternate Years

SOC 5130 - Ethnographic Field School
3-6 credits

Provides practical training in use of ethnographic field methods, qualitative data analysis, and ethnographic report-writing. Combines classroom instruction with supervised off-campus field research, while living in a cross-cultural setting. Fulfills program methods requirement. Application and additional fee required.
Cross-listed as: SOC 6130 and ANTH 5130/ANTH 6130.

Semester(s) Traditionally Offered: Summer

SOC 5460 - Sociology of Health
3 credits

Examination of social and cultural factors influencing health. Analysis of health behaviors as consequences of variety of diverse personal and social processes.

Cross-listed as: SOC 6460

Semester(s) Traditionally Offered: Spring, Even Years

SOC 5640 - Conflict Management in Natural Resources (CI)
CI Communications Intensive
3 credits

Introduction to conflict management techniques for those involved in natural resource management.

Cross-listed as: SOC 6640 and ENVS 5640/ENVS 6640.

Semester(s) Traditionally Offered: Spring

SOC 5650 - Developing Societies (DSS)
DSS Depth Social Sciences
3 credits

Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.

Cross-listed as: SOC 6650 and ANTH 5650/ANTH 6650 and GEOG 5650/GEOG 6650.

Semester(s) Traditionally Offered: Fall

SOC 6010 - Development of Sociological Theory
3 credits

Examines development of social theory from early to premodern times. Special attention given to nineteenth century European influences on development of American sociological theory.

Semester(s) Traditionally Offered: Fall

SOC 6020 - Modern Social Theory
3 credits

Examines current analytical and empirical theories from sociology as science perspective. Also explores network, exchange, conflict, functional, and interactionist approaches to, and difficulties with, scientific theorizing.

Semester(s) Traditionally Offered: Fall

SOC 6100 - Advanced Methods of Social Research
3 credits

Examines philosophical bases, techniques, and political and ethical aspects of social research.

Semester(s) Traditionally Offered: Fall

SOC 6120 - Population and Health
3 credits

Examines current threats to health and longevity among populations in industrialized and developing nations. Evaluates debates surrounding the history of mortality decline. Emphasis is given to the demographic, socioeconomic and environmental determinants of poor health and premature mortality.

Cross-listed as: SOC 5120

Semester(s) Traditionally Offered: Alternate Years

SOC 6130 - Ethnographic Field School
3-6 credits

Provides practical training in use of ethnographic field methods, qualitative data analysis, and ethnographic report-writing. Combines classroom instruction with supervised off-campus field research, while living in a cross-cultural setting. Fulfills program methods requirement. Application and additional fee required.

Cross-listed as: SOC 5130 and ANTH 6130/SOC 5130.

Semester(s) Traditionally Offered: Summer

SOC 6150 - Social Statistics II
3 credits

Statistical procedures for sociological analysis; nonparametric statistics; inferential statistics, cross-tabulation, and log-linear analysis; correlation;
regression; ANOVA; and other multivariable social science statistical treatments.

Semester(s) Traditionally Offered: Spring

SOC 6200 - Social Demography
3 credits

Focuses on relationships between demographic and sociological processes. Study of theoretical perspectives and empirical analyses of the determinants. Consequences of change in population size, composition, and distribution, as well as changes in demographic processes.

Semester(s) Traditionally Offered: Fall

SOC 6230 - Techniques of Demographic Analysis
3 credits

Provides instruction in use of rates, ratios, life tables, and related measures to describe, analyze, and estimate population. Review of measures designed to examine the three demographic processes: fertility, mortality, and migration. Utilization of analytical tools to explore population composition. Special emphasis placed on use of U.S. Census data to create population profiles.

Semester(s) Traditionally Offered: Spring

SOC 6250 - Sociology Internship/Co-op
1-6 credits

Professional level of educational work experience in an internship/cooperative education position for graduate students.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 6310 - Sociology of Work and Occupations
3 credits

Uses an applied and comparative cross-cultural perspective to examine work in pre-industrial (agricultural/pastoral), industrializing, industrialized, and post-industrial societies.

Semester(s) Traditionally Offered: Spring

SOC 6420 - Gender and Social Inequality
3 credits

Contemporary American gender stratification, including (1) What is the problem? (2) Why is it a problem? (3) How does it interact with other stratifiers? (4) What caused or is causing it? (5) How and why is it maintained? and (6) When does it vary and why? Comparison of different views on these issues.

Semester(s) Traditionally Offered: Spring

SOC 6450 - Special Topics in Social Problems
3 credits

Seminars on various topics appropriate to sociological analysis of contemporary social problems. Subject matter will reflect current faculty research and interests.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

SOC 6460 - Sociology of Health
3 credits

Examination of social and cultural factors influencing health. Analysis of health behaviors as consequences of variety of diverse personal and social processes.

Cross-listed as: SOC 5460

Semester(s) Traditionally Offered: Spring, Even Years

SOC 6620 - Environment, Technology, and Social Change
3 credits

Focuses on human interactions with the physical environment and changes brought about by this interaction. Topics of major emphasis include: approaches to environmental sociology; environmental values and attitudes; social movements pertaining to environmental concern; and social change responses to technology and resource scarcity.

Semester(s) Traditionally Offered: Spring

SOC 6630 - Natural Resources and Social Development
3 credits

Focuses on social dimensions of natural resources use, development, scarcity, and allocations. Examines ways in which changing resource conditions impact human social organization. Emphasis on topics including: social characteristics of resource-dependent communities and areas; social organizational responses to changes in
availability of, or access to, natural resources; and social impacts of natural resource development activities.

Semester(s) Traditionally Offered: Spring

SOC 6640 - Conflict Management in Natural Resources
3 credits

Introduction to conflict management techniques for those involved in natural resource management.

Cross-listed as: SOC 5640 and ENVS 6640/ENVS 5640.

Semester(s) Traditionally Offered: Spring

SOC 6650 - Developing Societies
3 credits

Reviews how sociology, cultural geography, and economic anthropology analyze processes of globalization in postcolonial societies. Examines changing livelihoods, patterns of spatial incorporation and societal evolution, and emergent policy problems associated with rapid socioeconomic change.

Cross-listed as: SOC 5650 and ANTH 6650/ANTH 5650 and GEOG 6650/GEOG 5650.

Semester(s) Traditionally Offered: Fall

SOC 6700 - Advanced Rural Sociology
3 credits

Analysis of major developments in the study of rural society and rural communities. Emphasis on rural social changes related to economic, demographic, organizational, and technological trends at societal and global levels.

Semester(s) Traditionally Offered: Spring

SOC 6720 - Applied Community Development
3 credits

Uses asset-building model to explore current practice and theory of community development. Organized around service-learning placements with local and regional organizations. Includes reflective evaluation of theories based upon the service-learning experiences.

Prerequisite/Restriction: SOC 1010, SOC 3010, SOC 3110, SOC 3120, SOC 4010; or permission of instructor.

Cross-listed as: SOC 4720.

Semester(s) Traditionally Offered: Spring

SOC 6730 - Gender and International Development
3 credits

Examines gender issues in economic and social development. Focuses on theory and methodologies for gender analysis.

Semester(s) Traditionally Offered: Spring

SOC 6750 - Social Change and Development
3 credits

Readings from both domestic and international scholarship are used to examine the important social, economic, and political forces that shape patterns of social change and development.

Semester(s) Traditionally Offered: Spring

SOC 6800 - Seminar in Sociology
1-3 credits

Seminars in various areas of sociology: (a) theory, (b) methodology, (c) demography, (d) social organization, (e) social deviance, (f) social psychology, (g) social problems, (h) international development, (i) domestic development, (j) rural sociology, (k) environmental sociology, (l) other.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 6900 - Independent Readings in Sociology
1-3 credits

Independent readings in various areas of sociology: (a) theory, (b) methodology, (c) demography, (d) environmental/natural resource sociology, (e) sociology of development, (f) social problems.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 6970 - Thesis Research
1-12 credits

Repeatable for credit.
SOC 6990 - Continuing Graduate Advisement
1-3 credits
Repeatable for credit. Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SOC 7010 - Issues in Sociological Theory
3 credits
Explores current philosophical discussions on theoretical approaches to understanding society. Examines feminist, post-structuralist, and post-modernist conceptualizations of power, knowledge, and identity.
Semester(s) Traditionally Offered: Spring

SOC 7100 - Advanced Survey Techniques
3 credits
Examines the empirical and methodological literature regarding techniques for designing and implementing mail, telephone, and internet surveys for sociological research. Focuses on practical lessons for sampling, data collection, and survey data organization.
Semester(s) Traditionally Offered: Spring

SOC 7110 - Advanced Sociological Analysis
3 credits
Provides review of several quantitative approaches utilized in contemporary social research. Students undertake small-scale analytical exercises in topics including, but not limited to, log-linear and structural equation modeling, logistic regression, and event history analysis.
Semester(s) Traditionally Offered: Spring

SOC 7150 - Advanced Qualitative Methods in Sociology
3 credits
Examines the empirical and methodological literature regarding techniques for designing and implementing qualitative data collection and analysis for sociological research. Emphasizes practical tools for graduate students seeking to use qualitative methods for their thesis or dissertation research.
Semester(s) Traditionally Offered: Spring

SOC 7210 - Teaching Sociology
3 credits
Provides a learning opportunity for graduate students who will be graduate instructors or teaching assistants. Reviews teaching strategies (meeting a class for the first time, teaching a large lecture class) and course development (constructing a syllabus, developing tests and writing assignments).
Semester(s) Traditionally Offered: Fall

SOC 7250 - Advanced Seminar in Social Demography
3 credits
Detailed comparative and multilevel examination of substantive and methodological issues in the study of nuptiality, fertility, morbidity and mortality, migration, and social mobility. Covers theories, data collection strategies, measurement issues, and analytical techniques.
Semester(s) Traditionally Offered: Spring

SOC 7400 - Perspectives on Inequality and Social Problems
3 credits
Examines major theoretical and empirical approaches to the sociological analysis of inequality and social problems.
Semester(s) Traditionally Offered: Fall

SOC 7440 - Crime and Society
3 credits
Explores the field of criminology, which is primarily concerned with describing and explaining patterns of deviance violating criminal laws. Reviews the epistemological foundations of criminology, and then addresses specific topics surrounding various legal definitions of criminal behavior.
**SOC 7620 - Sociology of Environmental Hazards and Risks**  
3 credits

Focuses on how individuals and organizations respond to environmental hazards and risks resulting from either natural events or human technological and industrial processes.

**SOC 7640 - Population and Environment**  
3 credits

In-depth exploration of relationship between human populations and their environment. Heavy emphasis placed on developing an understanding of contemporary research in this area, especially with regard to the association between environmental factors and population organization, change, and growth.

**SOC 7660 - The Environment and Social Inequality**  
3 credits

Explores the intersection of social inequality and the physical environment. Examines how social structures and individual actions both perpetuate and combat various forms of inequality, including class, race, ethnicity, gender, and “expert knowledge.”.

**SOC 7720 - Community Theory and Research**  
3 credits

Explores theoretical and empirical sociological literature on the human community. Topics include: conceptualization and measurement of community well-being, dynamics and impacts of social and economic change on community life, and comparison of community research conducted in different settings.

**SOC 7800 - Topical Seminar in Sociology**  
3 credits

Seminars in various areas of sociology: (a) theory, (b) methodology, (c) demography, (d) environmental/natural resource sociology, (e) sociology of development, (f) social problems.

Repeatable for credit.

**SOC 7900 - Independent Study**  
1-3 credits

Independent study in sociological areas emphasizing (a) theory, (b) methodology, (c) demography, (d) environmental/natural resource sociology, (e) sociology of development, (f) social problems.

Repeatable for credit.

**SOC 7970 - Dissertation Research**  
1-12 credits

Repeatable for credit.  
Pass/Fail only.

**SOC 7990 - Continuing Graduate Advisement**  
1-9 credits

Repeatable for credit.  
Pass/Fail only.

**SPAN 1010 - Spanish First Year I**  
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: No more than one year of Spanish in high school or placement in this specific class by examination.

**SPAN 1020 - Spanish First Year II**  
4 credits

Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure...
Communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish Program.
 Semester(s) Traditionally Offered: Summer

SPAN 2010 - Spanish Second Year I
4 credits

Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: SPAN 1020 (or equivalent coursework) or placement in this specific class by examination.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 2020 - Spanish Second Year II
4 credits

Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: SPAN 2010 (or equivalent coursework) or placement in this specific class by examination.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 2800 - Spanish II Study Abroad
1-4 credits

Continued development of communicative competencies in the four language skills: speaking, listening, reading, and writing, with exposure to cultures and customs.

Prerequisite/Restriction: SPAN 1020 or equivalent.
Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish Program.
 Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 2988 - Special Problems
1-3 credits

An elective course intended for advanced students. Students will work individually with the instructor to develop reading, writing, listening and speaking skills. Emphasis will be on advanced grammar and conversation. Hispanic culture will also be emphasized. Significant reading and work outside of class are required.

Campus: USU Eastern only

SPAN 3010 - Hispanic Outreach Practicum
1-4 credits

Allows students of Spanish to improve their language skills and cultural awareness within a Hispanic community setting. May be repeated to a maximum of 4 credits, only 3 of which can be applied toward the Spanish major or minor.

Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Pass/Fail only.
 Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 3040 - Advanced Spanish Grammar
3 credits

Intense review of selected problematic areas of Spanish grammar for students with advanced language skills.

Prerequisite/Restriction: SPAN 2020 (or equivalent
coursework) or placement in this specific class by examination.

Semester(s) Traditionally Offered: Fall, Spring (Summer distance ed. only)

SPAN 3060 - Advanced Spanish Conversation and Composition (CI)
CI Communications Intensive
3 credits
Development of advanced conversation and writing skills through debate and composition on contemporary controversial topics.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 3060 - Advanced Spanish Conversation and Composition (CI)
CI Communications Intensive
3 credits
Development of advanced conversation and writing skills through debate and composition on contemporary controversial topics.

SPAN 3100 - Spanish for Healthcare Professionals
3 credits

Prerequisite/Restriction: SPAN 3040 or permission of instructor.

SPAN 3100 - Spanish for Healthcare Professionals
3 credits

Prerequisite/Restriction: SPAN 3040 or permission of instructor.

SPAN 3510 - Business Spanish
3 credits
Development of communication skills in Spanish for international Hispanic business purposes.

SPAN 3510 - Business Spanish
3 credits
Development of communication skills in Spanish for international Hispanic business purposes.

Prerequisite/Restriction: Permission of instructor.

SPAN 3510 - Business Spanish
3 credits
Development of communication skills in Spanish for international Hispanic business purposes.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 3550 - Spanish Culture and Civilization (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Historical, social, political, economic, and cultural conditions and institutions of Spain.

Semester(s) Traditionally Offered: Fall, Spring (Summer distance ed. only)

SPAN 3570 - Latin American Culture and Civilization (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Historical, social, political, economic, and cultural conditions and institutions of Latin American countries.

Semester(s) Traditionally Offered: Fall, Spring (Summer distance ed. only)

SPAN 3600 - Survey of Spanish Literature I (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Selective readings and discussions of major works and authors in Spanish literature from El Cid through Calderon.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

SPAN 3600 - Survey of Spanish Literature I (DHA)
3 credits
Selective readings and discussions of major works and authors in Spanish literature from El Cid through Calderon.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 3610 - Survey of Spanish Literature II (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Selective readings and discussions of major works and authors in Spanish literature from the eighteenth to twentieth centuries.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

SPAN 3610 - Survey of Spanish Literature II (DHA)
3 credits
Selective readings and discussions of major works and authors in Spanish literature from the eighteenth to twentieth centuries.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring (Summer distance ed. only)

SPAN 3620 - Survey of Latin American Literature I (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Historical, social, political, economic, and cultural conditions and institutions of Latin American countries.
Selective readings and discussions of major works and authors in Latin American literature from Pre-Columbian works through the beginnings of Modernism.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 3630 - Survey of Latin American Literature II (DHA)
DHA Depth Humanities and Creative Arts
3 credits

Selective readings and discussions of major works and authors in Latin American literature from Modernism to the present.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

SPAN 3650 - Spanish Literature - Study Abroad
1-4 credits

Selective readings and discussions of major works and authors in Spanish literature.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish program.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 3660 - Latin American Literature - Study Abroad
1-4 credits

Selective readings and discussions of major works and authors in Latin American literature.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; SPAN 3040 or permission of instructor.

Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish program.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 3800 - Spanish III Study Abroad
1-4 credits

Intense review of selected problematic areas of Spanish grammar for students with advanced language skills.

Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish Program.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 4200 - Applied Spanish Linguistics and Phonetics
3 credits

Analysis of selected phonological, morphological, syntactic, and semantic features of the Spanish language, including Spanish-English contrastive analysis.

Prerequisite/Restriction: SPAN 3040.

Semester(s) Traditionally Offered: Spring

SPAN 4800 - Hispanic Culture and Civilization - Study Abroad
1-4 credits

Historical, social, political, economic, and cultural conditions and institutions of Hispanic countries.

Repeatable for credit.
Campus: Taught only in Studies Overseas in Spanish Program.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 4880 - Individual Readings
1-4 credits

Individual readings or projects in Spanish.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPAN 4900 - Topics of Spanish Literature
3 credits

Repeatable for additional credit when topics vary.
Prerequisite/Restriction: At least two of the following: SPAN 3600, SPAN 3610, SPAN 3620, and SPAN 3630.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

SPAN 4910 - Topics of Latin American Literature
3 credits

Repeatable for additional credit when topics vary.

Prerequisite/Restriction: At least two of the following: SPAN 3600, SPAN 3610, SPAN 3620, and SPAN 3630.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

SPAN 4920 - Spanish Language Tutoring
1 credit

Allows students to develop tutoring skills by assisting professors in lower-division courses or fulfilling instructional duties for a comparable amount of time in the language laboratory, public schools, or similar activities with departmental approval. May be repeated to a maximum of 3 credits.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

SPAN 4990 - Spanish Degree Assessment
1 credit

Includes review of coursework and comprehensive exit examination, individualized according to the courses taken for the degree.

Prerequisite/Restriction: Permission of instructor.

SPAN 6200 - Spanish Linguistics and Phonetics
3 credits

Analysis of phonology, morphology, and syntax of the Spanish language.

Prerequisite/Restriction: SPAN 2020, another 3000-level or higher SPAN course, or demonstrated proficiency through testing.

Semester(s) Traditionally Offered: Spring

Special Education

SPED 0100 - Strategies for Reading
1-3 credits

Practical course with major emphasis on improvement of reading, writing, and comprehension skills that are essential for academic success. Remedial class not carrying USU or transfer credit. Remedial fee required.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

SPED 1000 - Principles of Effective Peer Teaching
2 credits

Students receive information about careers in working with individuals who have disabilities. Practical experience given in assessment, instruction, and advocacy. Teachers offer systematic instruction, close supervision, and mentoring on career directions and professional alternatives.

Repeatable for credit.
Campus: Available only to high school students at preapproved sites.
Semester(s) Traditionally Offered: Fall, Spring

SPED 1010 - Society and Disability (BSS)
BSS Breadth Social Sciences
3 credits

Discussion of definitions and types of disabilities, ethical issues, society's prejudice and discrimination against people with disabilities, and the individual's adjustment to the disability experience. Disability as a natural part of life.

Cross-listed as: REH 1010.

Semester(s) Traditionally Offered: Fall, Spring

SPED 2010 - Effective Behavior Management Practices for Paraeducators
1-3 credits

Teaches paraeducators to apply effective behavior management practices to individuals with disabilities in a
variety of settings. Introduction to proactive behavior management strategies, basic concepts of behavior management, and the application of intervention plans.

Repeatable for credit.

SPED 2150 - Introductory Experience with Students with Disabilities
1-4 credits

Introductory seminar from which students learn basic instructional techniques from video simulations, then apply techniques in public schools.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 2790 - Special Topics
1-4 credits

Repeatable for credit.

SPED 3030 - Educational and Multicultural Foundations
3 credits

Explores historical and cultural aspects of schooling and the inclusion of students with disabilities and bilingual students in general education classrooms. Examines how schooling practices change from elementary to high school and commonalities that bind the teaching profession.

Semester(s) Traditionally Offered: Spring

SPED 4000 - Education of Exceptional Individuals
2 credits

Characteristics of all types of exceptional children with emphasis on the educational and psychological implications of these conditions to the development of the child.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 4790 - Special Topics
1-4 credits

Repeatable for credit.

SPED 4910 - Undergraduate Research and Creative Opportunities
1-4 credits

Individually directed study at the undergraduate level.

Prerequisite/Restriction: Permission of instructor required.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 4970 - Honors Thesis
1-6 credits

Provides an opportunity for honors students in the Department of Special Education and Rehabilitation to interact with other honors students in the College of Education and Human Services and explore an interdisciplinary area of interest. A written paper will be required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5010 - Applied Behavioral Analysis 1: Principles, Assessment, and Analysis (QI)
QI Quantitative Intensive
3 credits

Covers topics related to collecting data, using data to make decisions, analyzing data, graphing data, and applying principles of behavior management and instruction to children and youth.

Prerequisite/Restriction: Admission to special education major or permission of instructor.

Semester(s) Traditionally Offered: Fall

SPED 5040 - Foundations of Effective Assessment and Instructional Practices
3 credits

Principles of standardized and curriculum-based assessment. Foundations for designing effective instructional programs to help students achieve mastery and proficiency.

Prerequisite/Restriction: Admission to special education major and SPED 5010 or permission of instructor.

Semester(s) Traditionally Offered: Fall
SPED 5050 - Applied Behavioral Analysis 2: Applications
3 credits
Expands knowledge of basic applied behavior analysis principles. Develops skills for remediating behavior problems using functional behavioral assessment.
Prerequisite/Restriction: Admission to special education major or permission of instructor.
Semester(s) Traditionally Offered: Spring

SPED 5060 - Consulting with Parents and Teachers
3 credits
Provides strategies for communicating with parents and teachers, as members of a multidisciplinary team, to assist parents and other teachers in collaborative problem solving.
Prerequisite/Restriction: Admission to special education major or permission of instructor.
Semester(s) Traditionally Offered: Spring

SPED 5070 - Policies and Procedures in Special Education
1-3 credits
Provides an understanding of federal and state laws for persons with disabilities and procedures for organizing a special education classroom and auxiliary staff.
Prerequisite/Restriction: Admission to special education major or permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall

SPED 5200 - Student Teaching in Special Education (CI)
CI Communications Intensive
3-15 credits
Prerequisite/Restriction: Admission to special education major or permission of instructor.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5220 - Special Education Student Teaching Seminar
3 credits
Weekly seminar taken concurrently with student teaching. Focuses on problems arising during student teaching and the development of a teaching portfolio.
Prerequisite/Restriction: Admission to teacher education and completion of the SPED sequence.
Corequisite: SPED 5200 or SPED 5210.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5230 - Student Teaching in Special Education: Alternative Preparation
3-15 credits
Student teaching for students in alternative teacher preparation programs.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5300 - Orientation to Teaching Students with Mild/Moderate Disabilities
2 credits
Provides preservice teachers with overview of information and resources, examples, and practice in applying effective instructional and behavior management strategies in their classrooms. Emphasizes knowledge/skills first day and first week of school.
Semester(s) Traditionally Offered: Fall

SPED 5310 - Teaching Reading and Language Arts to Students with Mild/Moderate Disabilities
2-4 credits
Curriculum, instructional methods, assessment, and data-based decision making related to teaching reading and language arts to students with mild/moderate disabilities.
Semester(s) Traditionally Offered: Fall
SPED 5320 - Teaching Content Areas and Transition to Students with Mild/Moderate Disabilities
3 credits

Students learn to teach content area material, learning strategies, and transition-related skills to students with mild/moderate disabilities. Also includes assessment and decision making strategies related to these curricular areas.

Semester(s) Traditionally Offered: Spring

SPED 5330 - Eligibility Assessment for Students with Mild/Moderate Disabilities
1 credit

Covers topics of choosing and administering eligibility assessment tests for students who may have mild/moderate disabilities. Interpretation of test results and applying results to decisions regarding students’ eligibility for special education services.

Pass/Fail only.
Semester(s) Traditionally Offered: Spring

SPED 5340 - Teaching Math to Students with Mild/Moderate Disabilities
3 credits

Explains procedures for teaching mathematics to students with mild/moderate disabilities, so that each progresses as fast as his or her capabilities will allow.

Prerequisite/Restriction: Admission to special education major or permission of instructor.

Semester(s) Traditionally Offered: Spring

SPED 5350 - Teaching Students with Mild/Moderate Disabilities I
3 credits

Provides students with information and skills in the area of classroom and individual behavior management procedures. Emphasizes research-validated strategies that students will apply to everyday instructional situations.

Prerequisite/Restriction: Admission to the Alternative Teacher Preparation Licensure Program.

Semester(s) Traditionally Offered: Fall

SPED 5360 - Teaching Students with Mild/Moderate Disabilities II
3 credits

Provides students with instructional and management skills. Through case studies and classroom simulations, students learn research-validated instructional and management skills.

Prerequisite/Restriction: Admission to the Alternative Preparation Licensure Program.

Semester(s) Traditionally Offered: Spring

SPED 5370 - Technology Considerations for Students with M/M Disabilities
2 credits

Assistive technology is a special factor to be considered by IEP teams for students with disabilities. Understanding the function and use of technology is critical in selecting and implementing AT systems. Students’ needs for AT are as diverse as students themselves.

Semester(s) Traditionally Offered: Fall

SPED 5400 - Orientation to Teaching Students with Severe Disabilities
2 credits

Provides preservice teachers with overview of information, resources, examples, and practices in applying effective instructional and behavior management strategies to students with severe disabilities.

Semester(s) Traditionally Offered: Fall

SPED 5410 - Practicum: Direct Instruction Reading and Language Arts for Students with Mild/Moderate Disabilities
1-3 credits

Students learn to use Direct Instruction techniques, positive management, curriculum-based assessment, and data-based decision-making to teach reading and language arts to children with mild/moderate disabilities. Students are placed in a classroom, where they teach a group of children daily.

Semester(s) Traditionally Offered: Fall
SPED 5420 - Practicum: Teaching Mathematics to Students with Mild/Moderate Disabilities
4 credits

Covers use of effective instructional techniques, positive management, curriculum-based assessment, and data-based decision making to teach mathematics content to children with mild/moderate disabilities. Students placed in a classroom, where they teach one or more group(s) of children daily.

Semester(s) Traditionally Offered: Spring

SPED 5430 - Field-Based Applications for Students with Mild/Moderate Disabilities I
2 credits

Designed to help students acquire and consistently demonstrate effective teaching practices to aid students with mild/moderate disabilities. Teaches students to analyze and solve instructional and management problems.

Prerequisite/Restriction: Admission to the Alternative Teacher Preparation Licensure Program.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall

SPED 5440 - Field-Based Applications for Students with Mild/Moderate Disabilities II
2 credits

The purpose of this course is to help teachers acquire more advanced effective teaching practices. Students will continue to learn how to analyze and solve instructional and management problems by learning more in depth procedures and implementing and evaluating interventions.

Prerequisite/Restriction: SPED 5430

SPED 5510 - Curriculum for Students with Severe Disabilities
3-4 credits

Provides information about commercially available curricular materials, as well as how to plan for and design functional academic curricula, for persons with severe disabilities.

Prerequisite/Restriction: Admission to Special Education major or permission of instructor.

Semester(s) Traditionally Offered: Spring

SPED 5520 - Curriculum for Secondary-Level Students with Severe Disabilities
3 credits

Provides information on developing and implementing secondary-level classroom, community, domestic, leisure, and transition instructional programs.

Prerequisite/Restriction: Admission to Special Education major or permission of instructor.

SPED 5530 - Technology for Teaching Exceptional Learners
3 credits

Familiarizes students with existing technology (IT and AT), federal and state technology legislation, and resources to fund technology in the classroom. Teaches methods for evaluating technology needs of individuals with disabilities.

Prerequisite/Restriction: Admission to Special Education major or permission of instructor.

Campus: Taught on campus during spring semester only. Occasionally offered off campus during fall semester.
Semester(s) Traditionally Offered: Fall, Spring

SPED 5540 - Assessment of Persons with Severe Disabilities
1 credit

Provides students with knowledge and skills necessary for conducting assessment activities with pupils having severe disabilities. Covers norm-referenced/standardized, criterion-referenced, and alternative assessment instruments. Students complete assignments in administering, interpreting, and communicating results of each type of assessment.

Semester(s) Traditionally Offered: Spring

SPED 5560 - Practicum in Improving School System Programs
1-4 credits

Provides students with knowledge and skills necessary for conducting assessment activities with pupils having severe disabilities. Covers norm-referenced/standardized, criterion-referenced, and alternative assessment instruments. Students complete assignments in administering, interpreting, and communicating results of each type of assessment.
Practicum or seminar providing information/experience in public school instruction.

Prerequisite/Restriction: Permission of instructor required.
Repeatable for credit.

SPED 5600 - Practicum: Instruction in Academic Skills
3 credits
A field-based class providing experience in observing and teaching functional academic curricula to students with severe disabilities.
Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall

SPED 5610 - Practicum: Instruction in Daily Living Skills
4 credits
Provides opportunity to assess students’ needs and to design programs for community, domestic, leisure, and transitional skills.
Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring

SPED 5620 - Practicum: Introduction to Instruction of Students with Severe Disabilities
2 credits
This practicum provides on-the-job training experience in working with students with severe disabilities. It will provide the ATP teacher with exposure to requirements for running a classroom. Students will become familiar with IEP, setting up a classroom, scheduling activities, and data collection.

Semester(s) Traditionally Offered: Fall

SPED 5630 - Field-Based Applications for Students with Severe Disabilities
2 credits
Designed to help students acquire and consistently demonstrate effective teaching practices to aid students with severe disabilities. Teaches students to analyze and solve instructional and management problems.

Prerequisite/Restriction: Admission to Severe Alternative Teacher Preparation Program.

Semester(s) Traditionally Offered: Spring

SPED 5640 - Advanced Field-Based Applications for Students with Severe Disabilities
2 credits
Designed to help students become competent in various effective teaching practices with students who have severe disabilities.
Prerequisite/Restriction: Admission to Severe Alternative Teacher Preparation Program and completion of SPED 5630.

Semester(s) Traditionally Offered: Fall

SPED 5700 - Orientation to Teaching Young Children with Disabilities
2 credits
Provides an overview of recommended practices related to effective instruction and behavior management strategies for preschool-age children with disabilities. While emphasizing basic teaching skills and knowledge, prepares beginning early childhood special education teachers for the first days and weeks in their classrooms.

Semester(s) Traditionally Offered: Fall

SPED 5710 - Young Children with Disabilities: Characteristics and Services
3 credits
Provides information about young children with disabilities, including historical development of services, skill areas, family involvement, teaming, and the array of service environments.
Prerequisite/Restriction: Admission to Special Education major or permission of instructor.

Semester(s) Traditionally Offered: Spring

SPED 5720 - Assessment for Eligibility, Programming and IEP Development
3 credits
Covers principles of standardized assessment, curriculum-based assessment, and direct child
observation. Instructs teachers in how to use assessment results to determine student eligibility for special education services and IEP development.

Prerequisite/Restriction: Permission of instructor.

Cross-listed as: PSY 5720.

Semester(s) Traditionally Offered: Fall

SPED 5730 - Intervention Strategies for Young Children with Disabilities
3 credits

Provides information on curricula, instructional strategies, service environments, and staffing roles for teachers of young children (0-5) with disabilities.

Cross-listed as: SPED 6260.

Semester(s) Traditionally Offered: Fall

SPED 5740 - Effective Instruction I
2 credits

Provides information on curricula, instructional strategies, progress monitoring of children's IEP goals, service environments, and staffing roles for preschool special education teachers.

Semester(s) Traditionally Offered: Fall

SPED 5750 - Language and Communication in Diverse Learners
3 credits

Instructs teachers in how to adapt classroom activities and instruction to include and target children with various communication disabilities. Addresses the use of augmentative communication and various curricula to teach emergent literacy skills.

Semester(s) Traditionally Offered: Spring

SPED 5760 - Effective Instruction II
2 credits

Expands on the knowledge of curricula, instructional strategies, and progress monitoring of children's IEP goals covered in SPED 5740. Addresses young children's challenging behaviors, as well as the use of functional behavioral assessment and applied behavior analysis principles.

Semester(s) Traditionally Offered: Spring

SPED 5770 - Early Childhood Development and its Relationship to Teaching Young Children with Disabilities
2 credits

Addresses how to use knowledge of typical early childhood development to inform instruction and program development for preschool-age children with disabilities.

Semester(s) Traditionally Offered: Summer

SPED 5780 - Foundations in Special Education and Legal Issues
3 credits

Provides information about disabilities, the historical development of special education services, service-delivery environments, family involvement, teaming, and legal issues concerning the provision of special education services to young children with disabilities.

Semester(s) Traditionally Offered: Fall

SPED 5790 - Special Topics
1-4 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5810 - Seminar and Field Experiences with Infants and Families
3-4 credits

Reviews infant medical issues, health, safety, syndromes, and low-incidence characteristics. Also includes a practicum component. Students participate, both in the home and in early intervention settings, with families having infants with disabilities.

Semester(s) Traditionally Offered: Spring
SPED 5820 - Preschool Practicum with Young Children with Disabilities in Community Environments  
5 credits

Students participate in variety of environments serving preschoolers with disabilities, assist in developing a family service plan, and teach other staff to implement techniques.

Repeatable for credit. 
Semester(s) Traditionally Offered: Fall

SPED 5830 - Seminar Working with Peers on Multidisciplinary Teams  
1 credit

Seminar for discussion of topics pertaining to how teams work with children, with and without disabilities, in a practicum. Students are assigned to a team for planning and problem solving throughout the semester.

Semester(s) Traditionally Offered: Fall, Spring

SPED 5840 - Practicum: Working with Young Children with Autism  
1 credit

This course will provide majors an opportunity to practice ABA strategies with young children with Autism.

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Spring

SPED 5850 - Field Based Applications of Effective Instruction I  
1 credit

Provides opportunities for teachers to apply in their classrooms the instructional principles learned in SPED 5740.

Semester(s) Traditionally Offered: Fall

SPED 5860 - Field Based Applications of Effective Instruction II  
1 credit

Provides opportunities for teachers to apply in their classrooms the instructional principles learned in SPED 5760.

Semester(s) Traditionally Offered: Spring

SPED 5870 - Field Based Applications of Effective Instruction III  
1 credit

Designed to help teachers prepare for student teaching. Identifies teaching skills in need of assistance, then develops action plans. Reviews classroom teaching and portfolio requirements.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall

SPED 5900 - Independent Study  
1-3 credits

Prerequisite/Restriction: Permission of instructor required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 5910 - Independent Research  
1-3 credits

Prerequisite/Restriction: Permission of instructor required.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6010 - Interventions for Parents and Families  
2 credits

Explores special challenges faced by parents and families of at-risk students and students with disabilities. Emphasizes intervention strategies, supportive resources, and parent programs.

SPED 6020 - Design and Evaluation of Instruction  
3 credits

Presents curriculum in which diagnosis and instruction are welded as a unit into the regular teaching procedures.

Semester(s) Traditionally Offered: Spring

SPED 6030 - Clinical Practicum: Student Teaching  
2-12 credits
Supervised practicum in a clinical teaching setting.

Prerequisite/Restriction: Permission of instructor.

Pass/Fail only.

SPED 6040 - Functional and Augmentative Communication Approaches and Technology
3 credits

Theory and methods of symbolic and nonsymbolic communication acquisition, especially for students with dual sensory impairments. Application of instruction and systems within natural routines.

Semester(s) Traditionally Offered: Fall

SPED 6050 - Issues with the Delivery of Services for Students with Dual Sensory Impairments
2 credits

In-depth presentation of best practices for educational services for students with dual sensory impairments.

Semester(s) Traditionally Offered: Fall

SPED 6060 - Legal Issues in Special Education
3 credits

Provides knowledge of a wide range of legal issues concerning the provision of special education services to students with disabilities.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6070 - Infusing Mobility and Communication for Students with Dual Sensory Impairments
2 credits

Reviews methods for providing orientation and mobility training to students with dual sensory impairments. Provides methods for infusing these and communication objectives into normal age-based routine activities.

Semester(s) Traditionally Offered: Spring

SPED 6080 - Collaboration and Management of Services for Students with Dual Sensory Impairments
2 credits

Reviews methods of planning and coordination of services for students with dual sensory impairments (e.g., transition, lifestyle planning, transition team coordination). Service management addressing issues of scheduling, monitoring, and training of staff and peers.

Semester(s) Traditionally Offered: Fall

SPED 6090 - Curriculum and Environmental Variations and Management
2 credits

Presents instructional and curricular strategies to promote utilization of residual vision or hearing skills. Overviews tactile cuing and movement-based approaches, with emphasis on integration within natural context and functional activities. Review of model delivery methods.

Semester(s) Traditionally Offered: Spring

SPED 6100 - Issues with the Delivery of Services for Students with Dual Sensory Impairments
2 credits

Explores attitudes and beliefs related to visual impairment and blindness. Emphasizes impact of vision loss on the psychosocial functioning of individuals and their families. Studies self-concept, self-esteem, and strategies to enhance these areas in visually impaired children.

Semester(s) Traditionally Offered: Summer

SPED 6110 - Social and Psychological Implications of Visual Impairments
2 credits

SPED 6120 - Ocular Disorders and Examination Techniques of Low Vision
4 credits

Students demonstrate the ability to identify the important parts of the visual system, to understand and interpret eye reports, and to translate the information into an educational plan. Participants also conduct and supervise vision screening clinics. In addition, participants demonstrate a basic understanding of approaches and practices of low-vision services. Includes low-vision aids, optics, and environmental modifications.

Semester(s) Traditionally Offered: Fall

SPED 6130 - Literary Braille Codes and Technologies
4 credits

Focuses on reading and writing literary braille. Includes literary braille contractions, short-form words,
punctuation, and rules of usage for basic Grade 2 braille, using the Perkins Braille Writer. Emphasizes accuracy, beginning formatting, and ability to apply the rules. Using a slate and stylus, as well as computerized braille writers, students learn to write literary braille.

Semester(s) Traditionally Offered: Fall
SPED 6140 - Nemeth Braille Codes and Braille Technologies
3 credits

Transcription of print mathematical symbols into appropriate formats, using Nemeth Braille Code of Mathematics. Computation skills using adapted abacus for basic mathematical operation. Explores braille music, foreign language braille, computer braille, and Grade 3 braille. Emphasizes literary braille in more extended writing projects.

Semester(s) Traditionally Offered: Spring
SPED 6150 - Teaching Children with Dual Sensory Impairments (Deaf/Blind)
3 credits

Provides basic understanding of the needs of learners (ages 0-22) having sensory impairments with multiple disabilities. Includes role and characteristics of the transdisciplinary team, learning environments, resources, assessment procedures, and instructional strategies. Identifies inclusion procedures, transitional issues, and methods of encouraging parental involvement.

Semester(s) Traditionally Offered: Summer
SPED 6160 - Introduction to Orientation and Mobility
2 credits

Introduces students to orientation and mobility, as well as basic assessment techniques. Students learn to use the results of these assessments, along with specific teaching techniques in pre-cane orientation and mobility skills, in teaching children with visual impairments. Students also become familiar with basic indoor (non-cane) mobility techniques, learn to identify and teach orientation cues in the environments, and develop lesson plans to teach concepts necessary for future cane travel.

Semester(s) Traditionally Offered: Summer
SPED 6170 - Instructional Management for Students with Visual Impairments (0-21)
4 credits

Emphasizes best practices for instructional management of children with visual impairments in early intervention settings, preschool programs, and early elementary grades. Also addresses practices for older students in upper elementary through high school grades. Explores strategies for development of basic concepts, socialization skills, emergent literacy, effective braille reading and writing, daily living skills, career understanding, and recreational and leisure skills. Focuses on understanding agency and community resources, family collaboration, modification and adaptation of materials and environments, and adapted technology.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring
SPED 6180 - Field Studies in Visual Impairments
1 credit

Participants work with visually impaired students in a variety of educational sites. Emphasizes use of adapted technology, implementation of teaching activities, student assessment, and modification of educational materials.

Corequisite: SPED 6130 or SPED 6170.

Semester(s) Traditionally Offered: Fall, Spring
SPED 6220 - Characteristics of Children with Emotional and Behavioral Disorders
3 credits

Explores characteristics of children and youth with emotional and behavioral disorders. Covers definitions, prevalence and incidence, classification, causal factors, and facets of disordered behavior.

SPED 6230 - Education of Students with Emotional and Behavioral Disorders
2 credits

Methods of teaching students with emotional and behavioral disorders, including educational strategies and behavioral treatments.
SPED 6260 - Intervention Strategies for Young Children with Disabilities
3 credits

Provides information on curricula, instructional strategies, service environments, and staffing roles for teachers of young children (0-5) with disabilities.

Cross-listed as: SPED 5730.

Semester(s) Traditionally Offered: Fall

SPED 6280 - Instructional Leadership for At-Risk Students
3 credits

Examines theories and practices of instructional leadership for at-risk students. Instructs students in services and programs available for at-risk students.

Semester(s) Traditionally Offered: Spring, Summer

SPED 6290 - Teaching Social Skills, Self-Management, and Values
3 credits

Discussion of current research and practices related to teaching social skills, self-management, and values. Explores teaching procedures and curriculum programs.

Semester(s) Traditionally Offered: Spring

SPED 6300 - Effective Practices with Culturally and Linguistically Diverse Populations
3 credits

Students will learn evidence-based evaluation and intervention practices with culturally and linguistically diverse (CLD) populations. Bilingual development, working with CLD families and the impact of culture on development will also be covered.

Semester(s) Traditionally Offered: Fall

SPED 6320 - Seminars in Learning Characteristics of Students with Dual Sensory Impairments
2 credits


SPED 6410 - Field Studies I: Analysis of Service for Students with Dual Sensory Impairments
2 credits

First of three field experiences for students in the DSI program. Emphasizes team-based review and analysis of services.

Semester(s) Traditionally Offered: Fall

SPED 6420 - Field Studies II: Analysis of Service for Students with Dual Sensory Impairments
2 credits

Practicum in integrated programs for students with dual sensory impairments within the context of the model classroom. Emphasizes transdisciplinary methods for assessment, instructional design, and planning skills.

SPED 6430 - Field Studies III: Analysis of Service for Students with Dual Sensory Impairments
2 credits

Advanced practicum in integrated programs for students with dual sensory impairments. Emphasizes an overall management of instructional environment and services.

SPED 6500 - Interdisciplinary Workshop
1-3 credits

Series of self-instructional modules and videos and a variety of elective training. Module topics include developmental disabilities, legal aspects and issues, assessment, intervention, assistive technology, transition, and prevention/intervention for aggression and violence.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6510 - Transition to Supported/Competitive Employment
2 credits

This course provides students with knowledge to understand and analyze evidence-based transition to employment for individuals with disabilities.

Corequisite: REH 6520 or SPED 6520
Cross-listed as: REH 6510

Semester(s) Traditionally Offered: Spring, Even Years

SPED 6520 - Transition Practicum I: Services Leading to Supported/Competitive Employment
2 credits

This practicum (i.e., field based applied course) provides students with competencies necessary to carry out evidence based transition services leading to employment of individuals with disabilities.

Corequisite: REH 6510 or SPED 6510

Cross-listed as: REH 6520

Semester(s) Traditionally Offered: Spring, Summer, Even Years

SPED 6530 - Transition to Post-Secondary Education
2 credits

This course provides students with knowledge to understand and analyze evidence based transition to post-secondary education for individuals with disabilities.

Corequisite: REH 6540 or SPED 6540

Cross-listed as: REH 6530

Semester(s) Traditionally Offered: Fall, Even Years

SPED 6540 - Transition Practicum II: Services Leading to Post-Secondary Education
2 credits

This practicum (i.e., field based applied course) provides students with competencies necessary to carry out evidence based transition services leading to post-secondary education of individuals with disabilities.

Corequisite: REH 6530 or SPED 6530

Cross-listed as: REH 6540

Graduate degrees and supervisory licensure related to the assessment of an ongoing or newly proposed program of instruction.

repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6560 - Improvement of Instruction
1-4 credits

Focuses on effective teaching methodologies, teaching performance, and curriculum decision making.

repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6700 - Introduction to Behavioral Research in Education
3 credits

Examines single-subject research methods for applied research, including measurement, design, and analysis issues.

Cross-listed as: EDUC 6700

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

SPED 6710 - Concepts and Principles of Behavior Analysis in Education
3 credits

Expands students' understanding of the theoretical and conceptual framework and experimental research of behavior analysis. Reviews philosophical underpinnings and experimental research in behavior analysis.

Prerequisite/Restriction: SPED 6700/EDUC 6700.

Semester(s) Traditionally Offered: Spring

SPED 6720 - Educational Applications of Behavior Analysis I
3 credits

Expands students' understanding of behavior analysis, as well as their ability to apply behavior analysis to practical situations.

Prerequisite/Restriction: SPED 6700
Semester(s) Traditionally Offered: Fall
SPED 6730 - Educational Applications of Behavior Analysis II
3 credits

Provides advanced instruction in educational applications of behavior analysis, including assessment and treatment of problem behavior and learning strategies.

Prerequisite/Restriction: SPED 6720.

Semester(s) Traditionally Offered: Spring
SPED 6740 - Single-Subject Research Methods and Designs
3 credits

Helps students develop competency in analyzing single-subject research. Students draft a written proposal describing research to be carried out in a master's thesis or project.

Prerequisite/Restriction: SPED 6720

Semester(s) Traditionally Offered: Spring, Odd Years
SPED 6750 - Supervised Practicum in Applied Behavior Analysis
1-3 credits

Through this supervised practicum, students accrue supervised hours in applied behavior analysis.

Prerequisite/Restriction: EDUC 6700 or SPED 6700

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring
SPED 6760 - Supervised Practicum in Applied Behavior Analysis: Seminar
2 credits

This seminar is associated with the practicum in which students receive clinical supervision in applied behavior analysis and should be taken in association with SPED 6750.

Semester(s) Traditionally Offered: Fall, alternate even years
SPED 6790 - Special Topics
1-4 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6810 - Seminar in Special Education
1-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6900 - Independent Study
1-2 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6910 - Independent Research
1-2 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6930 - Internship in Special Education
2-10 credits

Professional and supervised intern experience for master's program.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6960 - Creative Project
1-6 credits

Culminating experience of MEd program.

Prerequisite/Restriction: Proposal approval by supervisory committee.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 6970 - Thesis
1-9 credits

Semester(s) Traditionally Offered: Fall, Spring, Summer
Culminating experience of MS program.

Prerequisite/Restriction: Proposal approval by supervisory committee.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 6990 - Continuing Graduate Advisement
1-8 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7040 - Literature Review
1-3 credits

Guided experience in conducting a comprehensive and systematic review of literature on a topic related to special education.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

SPED 7050 - Internship in Program Evaluation
1-5 credits

Guided experience in evaluation of educational programs in schools, treatment centers, homes, and communities.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7060 - Research Internship
1-5 credits

Guided experience in conducting educational research.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7070 - Grant Writing
1-3 credits

Guided experience in preparation of grant proposals.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7080 - Writing for Publication
1-3 credits

In-depth individualized experience in which the student chooses a topic area, then writes a scholarly manuscript which is submitted for publication in a peer-reviewed academic journal.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7090 - Conference Presentation
1-3 credits

Individualized, supervised experience in which the student identifies an important topic and appropriate conference, and then makes a professional conference presentation.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7330 - Supervision Internship
1-5 credits

Guided experience in supervising undergraduate and master's students during practica, student teaching, and other field experiences.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7340 - College Teaching Internship
1-3 credits

Guided experience in teaching university courses.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 7400 - Cultural and Linguistic Diversity and Disability
3 credits
Surveys major issues, topics, and perspectives related to the intersection of cultural/linguistic diversity and disability.

Semester(s) Traditionally Offered: Fall

SPED 7500 - Interdisciplinary Workshop
1-3 credits
Workshop on current interdisciplinary issues and topics in special education and related fields.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7700 - Single-Subject Research Methods and Designs
3 credits
Examines single-subject research methods for applied research, including measurement, design, and analysis issues.

Prerequisite/Restriction: EDUC 6700 or SPED 6700 or permission of instructor
Cross-listed as: EDUC 7700
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Summer

SPED 7710 - Advanced Single-Subject Research Methods and Design
3 credits
Explores advanced concepts and procedures in within-subject research methods. Builds on knowledge and skills acquired in SPED 7700 regarding scientific questions, measures, research designs, data analysis, and inference. Students analyze research and design, conduct, and report a scientific study.

Prerequisite/Restriction: SPED 7700.
Semester(s) Traditionally Offered: Spring

SPED 7720 - Advanced Applied Behavior Analysis
3 credits
Discussion of advanced topics in applied behavior analysis including: functional analysis, function-based interventions, behavioral acquisition procedures, and strategies for promoting generalization and maintenance of behavior. Specific discussion of how applied behavior analytic principles can be used in educational contexts.

Semester(s) Traditionally Offered: Spring

SPED 7730 - Advanced Topics in Behavior Analysis
3 credits
Discusses advanced topics and issues in behavior analysis, including generalization, higher-order learning, variability, novelty, rule-governed behavior, and private events.

Semester(s) Traditionally Offered: Spring

SPED 7800 - Seminar: Issues in Special Education and Rehabilitation
1-3 credits
Critical analysis of variety of special education and rehabilitation issues and trends. Empirical and theoretical information presented in a seminar format.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7810 - Research Seminar in Special Education and Rehabilitation
1-3 credits
Identification of research problems and discussion of research strategies and methods. Applications of research, data analysis, and statistical concepts.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7820 - Seminar: Special Topics
1-3 credits
In-depth study of special topics in special education and rehabilitation. Seminars examine historical aspects, relevant research, and theoretical positions on selected topics.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
SPED 7830 - Special Education Personnel Preparation Methods
2 credits

Focuses on critical issues in preparing special education teachers. Includes teaching, supervision, and overall program development. Students demonstrate supervision and teaching competencies.

Semester(s) Traditionally Offered: Spring

SPED 7840 - Preliminary Exams
1 credit

Preparation for, and successful completion of, written preliminary examinations. Students demonstrate methodological and analytical skills, as well as scientific foundations, for doctoral studies in special education or applied behavior analysis.

Pass/Fail only.
Semester(s) Traditionally Offered: Summer

SPED 7900 - Independent Study
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7910 - Independent Research
1-3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7920 - Doctoral Program Professional Seminar
3 credits

Orients new students to doctoral program, utilizing five goals: (1) familiarize students with requirements of the program and of the Graduate School, (2) acquaint students with the faculty and the resources available, (3) initiate a career planning process, (4) teach students some fundamental concepts underlying scientific research, and (5) teach students to conduct literature reviews.

Semester(s) Traditionally Offered: Fall

SPED 7930 - Internship in Special Education
1-12 credits

Professional, supervised internship experience for doctoral students.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7940 - Journal Reading Group
1-2 credits

Seminar discussion of recent empirical and theoretical journal articles in special education and related fields.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7970 - Dissertation
1-15 credits

Variable credit for dissertation project in connection with doctoral program in special education.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

SPED 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Speech

SPCH 1020 - Public Speaking (BHU/CI)
BHU/CI Breadth Humanities and Communications Intensive
3 credits

Speaking in formal public communication situations. Development of skills in speech preparation, audience adaptation, and delivery. Two lectures and one one-hour lab per week.
SPCH 2110 - Interpersonal Communication (BHU/CI/HR)
BHU/CI/HR Breadth Humanities, Communications Intensive, and Human Relations
3 credits
Examination of theories, methods, and competencies relevant to studying, establishing, and maintaining interpersonal relationships in family, intercultural, professional, and other contexts. Classroom experiences with topics such as perception, language, nonverbal behavior, conflict resolution, and listening.

SPCH 2120 - Small Group Communication (HR)
HR Human Relations
3 credits
Introduction to communication in group processes such as decision-making, leadership, power, conflict, deviance and the development of group structures, functions, norms and roles.

SPCH 2250 - Introductory Internship/Co-op
1-6 credits
Introductory level educational work experience in an internship or cooperative education position approved by the department and advisor. Internship project and number of credits must be approved by advisor.

SPCH 2270 - Argumentation and Debate
3 credits
Techniques of analysis, investigation, evidence, reasoning, brief making, refutation, and construction and delivery of the argumentative speech and academic debate.

SPCH 2330 - Communication in a Global Era
3 credits
Introduction to the role of communication in a global setting, including language, cultural, and technological issues. A variety of theories and perspectives will be explored.

Cross-listed as: LANG 2330

SPCH 3000 - Speech Communication Teaching Practicum
1 credit
Intensive speech teaching workshop. Supervised on-campus teaching experience. Must be completed prior to student teaching experience. Repeatable to a maximum of 2 credits.

SPCH 3050 - Technical and Professional Communication (DSS)
DSS Depth Social Sciences
3 credits
Skill development in oral technical reporting, interviewing, and interpersonal communication to meet the unique communication requirements of business, industry, and the professions.

SPCH 3250 - Organizational Communication (CI)
CI Communications Intensive
3 credits
Study of internal communication requirements of organizations. Analysis of communication problems associated with conflict, diversity, interpersonal influence, communication technology, and information flow. Development of effective communication practices.

SPCH 3300 - Clinical Experience I
1 credit
First clinical practicum in middle and secondary schools. Arranged by special methods instructor. Required at Level I. Prerequisites are set by the Secondary Education Department.

Corequisite: SPCH 5370.

SPCH 3330 - Intercultural Communication (DSS)
DSS Depth Social Sciences
3 credits
Study of how communication shapes culture and how culture, in turn, affects communication. Development of active intercultural communication in professional and personal contexts.

Semester(s) Traditionally Offered: Fall, Spring

SPCH 3400 - Persuasion (CI)
CI Communications Intensive
3 credits

Survey of theory and research investigating the process of social influence. Topics include: compliance-gaining strategies, enactment and detection of deception, verbal and nonverbal influence, attitude change, conformity, communicator characteristics, credibility, emotional appeals, and ethics.

SPCH 3500 - Communication and Leadership
3 credits

Study of the role of communication in successful leadership at individual and organizational levels. Focuses specifically on contemporary theories of leadership, social responsibility, and ethics. Development of effective communication practices.

Semester(s) Traditionally Offered: Spring

SPCH 3600 - Communication and Conflict
3 credits

Study of contemporary theories on conflict and communication. Analyses of the roles of culture, gender, and personal and/or organizational ethics in conflict and disputes. Discussion and application of negotiation, mediation, and facilitation skills.

SPCH 4200 - Language, Thought, and Action (DSS)
DSS Depth Social Sciences
3 credits

Examines the influence of language on perception, interpretation, and evaluation in a wide variety of communication contexts, from organizational communication to mass media to interpersonal relations.

SPCH 4250 - Advanced Internship/Co-op
1-6 credits

Internship or cooperative education at a more professional level, with increased complexity, approved by the department and advisor. Internship project and number of credits must be approved by advisor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SPCH 4300 - Clinical Experience II
1 credit

Second clinical practicum in middle and secondary schools. Arranged by special methods instructor. Required at Level II. Prerequisites are set by the Secondary Education Department.

Cross-listed as: SPCH 5370.

SPCH 4350 - Organizations and Social Change
3 credits

Explores the ways in which organizations effect social change. Focuses specifically on nonprofit organizations, social entrepreneurship, and corporate social responsibility. Analyzes how different organizations address a variety of social issues in local, national, and international contexts.

Semester(s) Traditionally Offered: Spring

SPCH 4460 - Communication Criticism
3 credits

Introduction to analysis of public communication from a variety of critical perspectives. With an approach including theory and practice, teaches students how to critically analyze discursive messages.

SPCH 5000 - Studies in Speech Communication
1-5 credits

Study of special topics in interpersonal, small group, organizational, or intercultural communication theory and research.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
SPCH 5100 - Theories of Speech Communication (CI)
CI Communications Intensive
3 credits
Social, scientific, and humanistic inquiry into the process of human communication. Multi-theoretical approach, including perspectives and research on interpersonal, persuasive, organizational, intrapersonal, group, and intercultural communication.
Prerequisite/Restriction: Speech Communication major and completed six upper-division credits of speech coursework or permission of instructor
Semester(s) Traditionally Offered: Spring

SPCH 5250 - Communication, Social Justice and the Environment
3 credits
Study of persuasive tactics and strategies as used by social advocates. Focuses on environmental issues and organizations. Analysis of environmental messages with an emphasis on the development of writing and critical thinking skills.

SPCH 5280 - Communication Education Theory
3 credits
Study of contemporary theories and research in communication education. Emphasis on communication competency development, communication apprehension, critical thinking, communication assessment, development of communication ethics, freedom of speech, instructional communication, and history of communication education.

SPCH 5300 - Visual Rhetoric
3 credits
Helps students to gain a greater understanding of visual culture, communication, and persuasion. Specific to the communication discipline, students examine how visual elements work as arguments, while gaining knowledge about different approaches to analyzing visual messages. In addition, students enhance their ability to critically think and analyze visual texts, while improving their writing, research, discussion, and speaking skills.
Semester(s) Traditionally Offered: Fall

SPCH 5370 - Methods in Teaching Speech Communication
3 credits
Development of materials and strategies for teaching secondary school speech communication.
Semester(s) Traditionally Offered: Alternate Years

SPCH 5400 - Advanced Persuasion
3 credits
Provides more complex understanding of the process of persuasion, including an examination of traditional and contemporary theories of social influence. Investigates multiple variables, including context, which affect the sending and receiving of persuasive messages.
Prerequisite/Restriction: SPCH 3400.
Semester(s) Traditionally Offered: Spring

Statistics

STAT 1040 - Introduction to Statistics (QL)
QL Quantitative Literacy
3 credits
Descriptive and inferential statistical methods. Emphasis on conceptual understanding and statistical thinking. Examples presented from many different areas.
Prerequisite/Restriction: C or better in MATH 1010 or Math ACT score of at least 23 (Math SAT score of at least 540) within the Math prerequisite acceptability time limit; or satisfactory score on Math Placement Exam.
Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 2000 - Statistical Methods (QI)
QI Quantitative Intensive
4 credits
Introduction to statistical concepts, graphical techniques, probability, distributions, estimation, one and two sample testing, chi-square tests, and simple linear regression, one-way ANOVA.
Prerequisite/Restriction: C- or better in MATH 1050 or Math ACT score of at least 25 (Math SAT score of at least 580) within the Math prerequisite acceptability time limit; or satisfactory score on Math Placement Exam.
Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 2250 - Internship and Cooperative Studies
1-6 credits
Lower-division internship/cooperative work experience in statistics.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 2300 - Business Statistics (QL)
QL Quantitative Literacy
4 credits
Descriptive and inferential statistics, probability, sampling, estimation, tests of hypotheses, linear regression and correlation, chi-square tests, analysis of variance, and multiple regression.
Prerequisite/Restriction: C- or better in MATH 1050 or Math ACT score of at least 25 (Math SAT score of at least 580) within the Math prerequisite acceptability time limit; or satisfactory score on Math Placement Exam.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 2950 - Directed Reading and Conference
1-3 credits
Prerequisite/Restriction: Prior arrangement with specific instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 3000 - Statistics for Scientists (QI)
QI Quantitative Intensive
3 credits
Introduction to statistical concepts, graphical techniques, discrete and continuous distributions, parameter estimation, hypothesis testing, and chi-square tests.
Prerequisite/Restriction: C- or better in MATH 1100 or MATH 1210.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 4250 - Advanced Internship/Co-op
1-6 credits
Advanced educational work experience in statistics.
Prerequisite/Restriction: Approval of instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 4500 - Methods of Teaching Statistics in Secondary and Middle School
3 credits
Teaching methods course required for all prospective mathematics and statistics composite teaching majors.
Prerequisite/Restriction: MATH 3110; MATH 4200 or MATH 4310; STAT 2000 or STAT 3000.
Corequisite: MATH 4500.

Semester(s) Traditionally Offered: Fall, Spring

STAT 4950 - Directed Reading and Conference
1-3 credits
Prerequisite/Restriction: Prior arrangement with specific instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 5100 - Linear Regression and Time Series (CI/QI)
CI/QI Communications Intensive and Quantitative Intensive
3 credits
Methods for prediction and hypothesis testing in multiple linear regression models, including analysis of variance and covariance, logistic regression, introduction to time series, and signal processing.
Prerequisite/Restriction: C- or better in STAT 2000 or STAT 3000.

Semester(s) Traditionally Offered: Fall

STAT 5120 - Categorical Data Analysis
3 credits
Analysis of categorical data, contingency tables, goodness of fit, random sampling, log-linear and logistic regression models, and sampling for proportions, as well as stratified and cluster sampling.
STAT 5200 - Design of Experiments
3 credits
Design, analysis, and interpretation of experiments, split plots, incomplete blocks, confounding, fractional factorials, nested designs, two- and three-way analysis of variance, covariance, and multiple regression.

Prerequisite/Restriction: C- or better in STAT 5100.

Semester(s) Traditionally Offered: Fall

STAT 5410 - Applied Spatial Statistics
3 credits
Explores spatial point patterns, spatially continuous data, area (grid) data, nearest neighbor distances, K function, complete spatial randomness, variogram, kriging, correlogram, and Moran’s I. For graduate (6000-level credit), a major project is required.

Prerequisite/Restriction: C- or better in STAT 3000
Knowledge of a statistical package (e.g., S-Plus, R, SAS, etc.) or any programming language (e.g., C/C++, FORTRAN, etc.) is strongly recommended.

Cross-listed as: STAT 6410.

Semester(s) Traditionally Offered: Spring

STAT 5570 - Statistical Bioinformatics
3 credits
Introduction to current statistical issues in bioinformatics, primarily gene expression and sequence analysis, using bioconductor tools. Topics include data normalization and visualization, differential expression, annotation, scoring alignments, HMMs, and phylogenetic trees. For graduate (6000-level credit), major project required.

Prerequisite/Restriction: C- or better in STAT 5100 or STAT 5200.

Cross-listed as: STAT 6570.

Semester(s) Traditionally Offered: Spring

STAT 5600 - Applied Multivariate Statistics (CI)
CI Communications Intensive
3 credits
Introduction to multivariate statistical procedures for data analysis. Topics include MANOVA, principal component analysis, factor analysis, clustering, and classification.

Prerequisite/Restriction: C- or better in STAT 5100.

Semester(s) Traditionally Offered: Spring

STAT 5810 - Topics in Statistics
1-3 credits
Prerequisite/Restriction: Permission of instructor
Repeatable for credit.

STAT 5820 - Topics in Statistics
1-3 credits
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 5890 - Problem Solving in Statistics (CI)
CI Communications Intensive
3 credits
Capstone course for Statistics majors, applying course material covered in the undergraduate major.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Spring

STAT 5940 - Directed Reading and Conference
1-3 credits
Prerequisite/Restriction: Prior arrangement with specific instructor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 5950 - Senior Honors Project
1-4 credits
A senior project, required for completion of the departmental honors program and developed under the direction of a departmental faculty member.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 5970 - Seminar
1-3 credits

Review of current literature and developments in the field of statistics.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 6100 - Advanced Regression Analysis
3 credits

Explores the following topics in the theory of linear models: least squares estimation, the general linear hypothesis, regression diagnostics for multicollinearity, outliers, and influential points. Also includes discussion of robust regression, nonlinear regression, generalized linear models, ACE, generalized additive models, and regression models for survival data.

Prerequisite/Restriction: C- or better in MATH 5720 and STAT 5100.

Semester(s) Traditionally Offered: Fall

STAT 6180 - Time Series
3 credits

Time and frequency domain time series analysis, including Box-Jenkins methods, spectral analysis and filtering, introduction to state space methodology.

Prerequisite/Restriction: C- or better in STAT 5100, MATH 5720.

Semester(s) Traditionally Offered: Spring

STAT 6190 - Wavelet Methods for Time Series
3 credits

Explores time series models, time and frequency domain analysis, discrete wavelet transform, and wavelet ANOVA, as well as applications in physics and finance.

Prerequisite/Restriction: C- or better in MATH 5720 and STAT 5100.

Semester(s) Traditionally Offered: Spring

STAT 6200 - Analysis of Unbalanced Data and Complex Experimental Designs
3 credits


Prerequisite/Restriction: C- or better in STAT 5200.

Semester(s) Traditionally Offered: Spring

STAT 6250 - Graduate Internship/Co-op
1-8 credits

Educational work experience at the graduate level.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

STAT 6410 - Applied Spatial Statistics
3 credits

Explores spatial point patterns, spatially continuous data, area (grid) data, nearest neighbor distances, K function, complete spatial randomness, variogram, kriging, correlogram, and Moran’s I. For graduate (6000-level credit), a major project is required.

Prerequisite/Restriction: C- or better in STAT 3000 Knowledge of a statistical package (e.g., S-Plus, R, SAS, etc.) or any programming language (e.g., C/C++, FORTRAN, etc.) is strongly recommended.

Cross-listed as: STAT 5410.

Semester(s) Traditionally Offered: Fall

STAT 6530 - Modern Nonparametric Statistics
3 credits

Examines topics in resampling methods including: the
jackknife and the bootstrap, bias, variance, and confidence intervals. Also explores the following topics in smoothing methods: histograms, kernel density estimates, and local polynomial regression. Includes testing procedures using ranks and empirical cumulative distribution functions.

Prerequisite/Restriction: C- or better in MATH 5710 and STAT 3000.

Semester(s) Traditionally Offered: Spring

STAT 6550 - Statistical Computing
3 credits

Survey of algorithms and tools for modern statistical computing. Topics include simulation design and implementation, algorithms for linear regression and subset selection, smoothing algorithms, fast fourier transform, EM algorithm, numerical methods for maximum likelihood estimation, and neural networks.

Prerequisite/Restriction: C- or better in MATH 5720 and knowledge of a programming language.

Semester(s) Traditionally Offered: Spring

STAT 6560 - Graphical Methods
3 credits

Statistical graphics and scientific visualization of one, two, and higher dimensional data. Well-chosen and designed graphics are vital in exploratory data analysis, model diagnostics, and data presentation. Includes specific methods and general principles, such as effective use of color and motion.

Prerequisite/Restriction: C- or better in STAT 3000 and programming experience.

Semester(s) Traditionally Offered: Fall

STAT 6570 - Statistical Bioinformatics
3 credits

Introduction to current statistical issues in bioinformatics, primarily gene expression and sequence analysis, using bioconductor tools. Topics include data normalization and visualization, differential expression, annotation, scoring alignments, HMMs, and phylogenetic trees. For graduate (6000-level) credit, major project required.

Prerequisite/Restriction: C- or better in STAT 5100 or STAT 5200.

Cross-listed as: STAT 5570.

Semester(s) Traditionally Offered: Spring

STAT 6650 - Stat Learning: Multivariate Stat Analysis for Bioinformatics, Data Mining, and Machine Learning
3 credits


Prerequisite/Restriction: C- or better in MATH 5720 and STAT 5100 Programming experience in R or a related language is strongly recommended.

Semester(s) Traditionally Offered: Fall

STAT 6710 - Mathematical Statistics I
3 credits

Modes of convergence of random variables, laws of large numbers, characteristic functions, and the central limit theorem.

Prerequisite/Restriction: C- or better in MATH 5720.

Semester(s) Traditionally Offered: Fall

STAT 6720 - Mathematical Statistics II
3 credits

Consistency, loss functions, risk, and notions of optimality of estimations. Hypothesis testing and confidence regions. Large sample theory, notions of robustness.

Prerequisite/Restriction: C- or better in STAT 6710.

Semester(s) Traditionally Offered: Spring

STAT 6740 - Bayesian Statistics
3 credits

Conditional probability, Bayes’ theorem, conjugate and objective priors, Bayesian inference and decision theory,
model averaging, multi-parameter and hierarchical models, sampling and numerical integration methods, linear models, generalized linear models, and models for correlated data.

Prerequisite/Restriction: MATH 5720 and STAT 5100.

Semester(s) Traditionally Offered: Spring

STAT 6810 - Topics in Statistics (Topic)
3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

STAT 6820 - Topics in Statistics (Topic)
3 credits

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 6890 - Practical Statistical Consulting
1-3 credits

Introduction to statistical consulting for graduate students, for faculty in other research departments, and for business, industry, and government.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 6910 - Seminar in Statistics
1-3 credits

Review of current literature and developments in statistics.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 6950 - Directed Reading and Conference
1-4 credits

Prerequisite/Restriction: Prior arrangement with specific instructor.

STAT 6970 - Thesis and Research
1-6 credits


Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 6990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 7110 - Linear Models (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7120 - Linear Models (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7180 - Time Series Analysis (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7190 - Time Series Analysis (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7210 - Experimental Design (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7220 - Experimental Design (Topic)
3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring
STAT 7310 - Business and Industrial Statistics (Topic)  
3 credits  
Repeatable for credit.

STAT 7320 - Business and Industrial Statistics (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7510 - Nonparametric Statistics (Topic)  
3 credits  
Repeatable for credit.

STAT 7520 - Nonparametric Statistics (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7550 - Computational and Graphical Statistics (Topic)  
3 credits  
Repeatable for credit.

STAT 7560 - Computational and Graphical Statistics (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7610 - Multivariate Statistics (Topic)  
3 credits  
Repeatable for credit.

STAT 7620 - Multivariate Statistics (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7710 - Mathematical Statistics (Topic)  
3 credits  
Repeatable for credit.

STAT 7720 - Mathematical Statistics (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7730 - Bayesian Statistics and Decision Theory (Topic)  
3 credits  
Repeatable for credit.

STAT 7740 - Bayesian Statistics and Decision Theory (Topic)  
3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7810 - Topics in Statistics (Topic)  
1-3 credits  
Repeatable for credit.

STAT 7820 - Topics in Statistics (Topic)  
1-3 credits  
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

STAT 7970 - Dissertation Research  
1-15 credits  
Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

STAT 7990 - Continuing Graduate Advisement  
1-9 credits  
Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

Social Work

SW 1010 - Introduction to Social Welfare  
3 credits  
Foundation course to facilitate development of an approach to thinking about social welfare. Explores broad common base of social work professional values, knowledge, skills, social policies, and programs.

Semester(s) Traditionally Offered: Fall, Spring
SW 2100 - Human Behavior in the Social Environment
3 credits

Interrelatedness of social, cultural, and environmental factors that combine with biological and psychological components to mold human behavior. Relevance of these factors to generalist social work practice.

Prerequisite/Restriction: SW 1010.

Semester(s) Traditionally Offered: Spring

SW 2400 - Social Work with Diverse Populations
3 credits

Examines characteristics of various populations, including patterns, dynamics, and consequences of discrimination, economic deprivation, and oppression. Emphasis placed on empowerment of groups and individuals, as well as the accumulation of multicultural competence.

Prerequisite/Restriction: SW 1010.

Semester(s) Traditionally Offered: Spring

SW 3050 - Practice I
3 credits

Introduction of generalist social work framework as an integrative tool, with special attention shown to strengths and empowerment perspective. Individuals as targets for change.

Prerequisite/Restriction: Admission to advanced standing in social work bachelor's program, SW 1010, SW 2100, SW 2400.

Semester(s) Traditionally Offered: Fall

SW 3350 - Child Welfare
3 credits

Developments in programs for meeting such needs of children as substitute parental care, adoptions, delinquency problems, mental retardation, and unmarried motherhood.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

SW 3360 - Adolescents: Theories, Problems, and Issues
3 credits

Focuses on major social problems confronting youth today: teenage pregnancy, substance abuse, unemployment, education, and mental health. Investigation of theories explaining these problems and society's efforts to resolve these problems.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

SW 3450 - School Social Work
3 credits

Overview of social work practice in an educational setting.

Semester(s) Traditionally Offered: Spring

SW 3550 - Social Gerontology
3 credits

Overview of field of aging and its connection to the practice of social work.

Prerequisite/Restriction: SW 1010.

Semester(s) Traditionally Offered: Spring

SW 3650 - Mental Health
3 credits

Services offered for the prevention and treatment of mental illness and the feasibility of social action programs on a community level.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

SW 3750 - Medical Social Services
3 credits

Introduction to role of social worker in health settings. Emphasizes definition of health and disease, patient rights, and consumer participation. Examination of basic health programs, major trends in health planning, and alternate models of health delivery.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

SW 3850 - Spirituality and Social Work
3 credits

Provides a framework of knowledge, values, skills, and experiences for spiritually sensitive social work practice.
Prerequisite/Restriction: SW 1010.

Semester(s) Traditionally Offered: Fall

SW 4100 - Social Work Research
3 credits

Survey of qualitative and quantitative scientific methods of research in social work. Articulation of research with practice and policy.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

Semester(s) Traditionally Offered: Fall

SW 4150 - Practice II
3 credits

Introduction to generalist social work practice at the micro level. Emphasizes study of skills from a strengths and empowerment perspective with individuals, families, and small groups. Special attention paid to ethical issues and working with diverse populations.

Prerequisite/Restriction: SW 3050.

Semester(s) Traditionally Offered: Spring

SW 4160 - Practice III
3 credits

Introduction to generalist social work practice at the macro level. Emphasizes study of skills from a strengths and empowerment perspective with groups, organizations, and community systems. Special attention paid to ethical issues and working with diverse populations.

Prerequisite/Restriction: SW 3050.

Semester(s) Traditionally Offered: Spring

SW 4870 - Beginning Field Practicum
6 credits

Practical experience in a social service agency. Seminar integrates field work experiences and academic knowledge. Emphasizes use of self and integration of knowledge, values, skills, and methods of practice, with special emphasis given to the code of ethics.

Prerequisite/Restriction: Instructor’s permission and by application.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

SW 4900 - Topical Issue Seminar
3-6 credits

Advanced seminar, designed as a forum for students from varied social science disciplines. Seminars may include issues involved in social work values and ethics, diversity, promotion of social and economic justice, and/or populations-at-risk.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400, and permission of instructor.

Repeatable for credit.

SW 4950 - Directed Readings
1-5 credits

Independent readings in various areas of social work: practice, policy, HBSE, research, populations-at-risk, values and ethics, social and economic justice, and diversity.

Prerequisite/Restriction: Instructor’s permission and a plan for study.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

SW 5350 - Social Welfare Policy (CI)
CI Communications Intensive
3 credits

Introduction to policy making in social welfare. Principles of social and economic justice used to analyze selected social policies and programs within a historical and contemporary context. Attention given to differential impact on at-risk populations.

Prerequisite/Restriction: SW 1010, SW 2100, SW 2400.

Semester(s) Traditionally Offered: Fall

SW 5870 - Advanced Field Practicum
6 credits

Supervised social work practice and projects. Provides
opportunities for advanced social work students to apply classroom learning in a field setting. Minimum of 240 hours in a social service agency required.

Prerequisite/Restriction: Instructor’s permission and SW 4870.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

SW 6000 - Principles and Philosophy of Social Work
3 credits

Explores history, traditions, ethics, purpose, philosophy, and knowledge base of the social work profession. Introduces generalist social work problem-solving approach.

Semester(s) Traditionally Offered: Fall

SW 6050 - HBSE I: Individuals and Families in Their Environment
3 credits

Presents and critiques knowledge of human development from infancy to late adolescence in the context of individuals and families. Identifies relationships between theoretical frameworks and various biopsychosocial environments.

Semester(s) Traditionally Offered: Fall

SW 6100 - Generalist Practice I: SW Practice with Individuals, Families, and Groups
3 credits

Provides a beginning and general base of practice knowledge, values, and skills for work with individuals, families, and treatment groups in a variety of community and agency contexts.

Semester(s) Traditionally Offered: Fall

SW 6150 - Generalist Practice II: SW Practice with Groups, Organizations, and Communities
3 credits

Provides a beginning and general base of practice knowledge, values, and skills for work with groups, organizations, and communities.

Semester(s) Traditionally Offered: Spring

SW 6200 - Social Work Research Methods
3 credits

Introduction to qualitative and quantitative social work research in context of generalist problem-solving approach.

Semester(s) Traditionally Offered: Fall, Summer

SW 6250 - HBSE II: Groups, Organizations, and Communities
3 credits

Presents and critiques knowledge of human development in the context of groups, communities, organizations, and institutions.

Semester(s) Traditionally Offered: Spring

SW 6300 - Social Policy Analysis
3 credits

Foundation policy course providing comprehensive exploration of theory, history, structure, and impact of social welfare policy on individuals, families, groups, organizations, and institutions.

Semester(s) Traditionally Offered: Spring

SW 6400 - Field Practicum I
4 credits

Provides supervised educational and practical social work experience with specified educational objectives in a human-service organization.

Semester(s) Traditionally Offered: Fall

SW 6425 - Foundation Optional Practicum
1-5 credits

Allows students to complete an optional or extended foundation practicum experience.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
SW 6450 - Field Practicum II  
5 credits

Continuation of SW 6400, providing supervised educational and practical social work experience with specified educational objectives in a human-service organization.

Semester(s) Traditionally Offered: Spring

SW 6475 - Foundation Block Field Practicum  
9 credits

Provides a concentrated supervised educational and practical social work experience with specified educational objectives in a human-service organization.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6500 - Advanced Child Welfare Practice in Rural Settings  
3 credits

Provides overview of services provided to abused/neglected children and their families, with emphasis on rural contexts. Explores assessment and treatment of problems commonly experienced by child welfare populations.

Semester(s) Traditionally Offered: Fall

SW 6525 - Social Work Practice with Mature and Aging Adults  
3 credits

Examines the social context of aging, as well as the aging process and implications for planning and management of direct services for older adults. Discusses practice approaches for older adults, used for purposes of appropriate assessment and intervention.

Semester(s) Traditionally Offered: Fall

SW 6550 - Advanced Practice with Victims and Perpetrators of Family Violence  
3 credits

Familiarizes students with problem of family violence, as well as with micro and macro intervention approaches to working with individuals and families impacted by family violence.

Semester(s) Traditionally Offered: Spring, Summer

SW 6575 - Social Work Practice with Substance Abusing Clients  
3 credits

Addresses practice in the field of substance abuse, including understanding of substance abuse policy and treatment issues.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6600 - Policy and Administration  
3 credits

Addresses planning and program development of human service organizations. Studies theories, types, levels, applications, and issues of planning and policy implementation.

Semester(s) Traditionally Offered: Spring

SW 6650 - Advanced Research Methods  
3 credits

Students apply their understanding of research methods, theories, and social work values (learned in SW 6200) while completing a research project.

Semester(s) Traditionally Offered: Spring, Summer

SW 6700 - Advanced Generalist Practice I: Individuals and Families  
3 credits

Focuses on advanced application of generalist problem-solving theories and skills in working with individuals and families.

Semester(s) Traditionally Offered: Fall

SW 6750 - Advanced Generalist Practice II: Groups  
3 credits

Focuses on advanced application of generalist problem-solving theories and skills in working with task and treatment groups.

Semester(s) Traditionally Offered: Spring

SW 6775 - Forensic Social Work Practice  
3 credits
Provides introduction to and overview of forensic social work practice.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6800 - Law and Ethics for Social Workers
3 credits

Provides students with basic understanding of law and ethics within the context of social work practice, including legal rights of individuals, legal processes, the legal system, and ethical dilemmas and issues.

Semester(s) Traditionally Offered: Fall, Summer

SW 6850 - Advanced Clinical Practice with Individuals and Families
3 credits

Emphasizes differential assessment and treatment of individuals, families, and family subsystems. Introduction to primary mental disorders in children and adults. Examines causal theory and prognosis, as well as theories about family dysfunction.

Semester(s) Traditionally Offered: Spring, Summer

SW 6875 - Clinical Practice with Women
3 credits

Explores treatment approaches for working with women in both individual and group settings.

SW 6900 - Field Practicum III
6 credits

Provides advanced supervised educational and practical social work experience with specified educational objectives in a human-service organization reflecting the student's selected focus area.

Semester(s) Traditionally Offered: Fall, Spring

SW 6925 - Advanced Optional Practicum
1-5 credits

Allows students to complete an optional or extended advanced practicum experience.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6950 - Field Practicum IV
6 credits

Continuation of SW 6900, providing advanced supervised educational and practical social work experience with specified educational objectives in a human-service organization reflecting the student's selected focus area.

Semester(s) Traditionally Offered: Spring

SW 6975 - Advanced Block Field Practicum
12 credits

Provides concentrated advanced supervised educational and practical social work experience with specified educational objectives in a human-service organization reflecting the student's selected focus area.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6990 - Independent Study
1-3 credits

Independent Study courses contracted between faculty member in the Social Work Program and MSW student.

Prerequisite/Restriction: Approval of Social Work Program director and department head.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6993 - Research Project
1-3 credits

MSW student research projects supervised by a faculty member in the Social Work Program.

Prerequisite/Restriction: Approval of the Social Work Program director and the department head.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

SW 6995 - Special Topics on Social Work Practice
1-3 credits

Course content varies. Follows strict guidelines determined by the Social Work Program.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
Teacher Education and Leadership

TEAL 1010 - Introduction to Education
3 credits

Students assess themselves as prospective teachers. Opportunities provided for students to observe in public schools (K-12), as well as to complete volunteer service in other community educational settings.

TEAL 4600 - Philosophy and Organization of the Middle Level School
3 credits

Focuses on characteristics of young adolescents and how middle level schools can be organized to meet those characteristics through interdisciplinary teaming, advisory programs, and exploratory mini-courses.

Cross-listed as: TEAL 6600.

Semester(s) Traditionally Offered: Fall

TEAL 4610 - Curriculum, Methods and Assessment for the Middle Grades
3 credits

Integrates current approaches to curriculum design with instructional models and assessment of learning appropriate for grades 5-9.

Cross-listed as: TEAL 6610.

Semester(s) Traditionally Offered: Spring

TEAL 4620 - Service Learning Applications for the Middle Grades
3 credits

Examines literature related to service learning for the middle grades and application of service learning in curriculum.

Cross-listed as: TEAL 6620.

Semester(s) Traditionally Offered: Summer

TEAL 4630 - Methods for Teaching Middle Level Mathematics
3 credits

Teaching methods course for elementary teachers seeking a middle-level (Level II) mathematics endorsement.

Prerequisite/Restriction: Satisfactory completion of MATH 1210 and ELED 4060 or an equivalent elementary mathematics methods course.

Cross-listed as: TEAL 6630.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 4710 - Language and Cultural Diversity in Education
3 credits

Critically addresses sociocultural and political factors contributing to the education of English language learners, including racism, linguicism, and social distance between schools and families. Analyzes the role of schooling in advancing educational equity and social justice.

Semester(s) Traditionally Offered: Fall, Spring

TEAL 4730 - Educational Linguistics
3 credits

Examines theoretical foundations, functions, and characteristics of first language acquisition and language variation in the Pre-K-12 classroom context. Also emphasizes social context of language in K-12 classroom interaction, instruction, and curriculum. Additional requirements for graduate students.

Cross-listed as: TEAL 6730.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 4745 - Second Language Acquisition in the Classroom
3 credits

Explores the processes of second language acquisition, including the influences of linguistic, cognitive, and sociocultural factors, as well as the relationship to first language acquisition. Emphasizes implications for teaching in the K-12 classroom environment. Additional requirements for graduate students.

Cross-listed as: TEAL 6745.

Semester(s) Traditionally Offered: Spring, Fall
TEAL 4760 - Foundations of ESL/Bilingual Education
3 credits
Explores sociocultural and historical contexts in which ESL/bilingual education has developed in the U.S. Addresses structures and purposes of ESL classes, sheltered instruction, bilingual education, and dual-language immersion, as well as diverse student populations these programs intend to reach. Additional coursework will be required for students desiring TEAL 6760 graduate credit.

Cross-listed as: TEAL 6760

Semester(s) Traditionally Offered: Spring, Fall

TEAL 4770 - ESOL Instructional Strategies in the Content Areas
3 credits
Focuses on methods which help English language learners in content-area classrooms to increase academic learning and integration into the larger school community.

Prerequisite/Restriction: Admission into a teacher education program.

Cross-listed as: TEAL 6770.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 4780 - Assessment for Language Learners
3 credits
Explores principles and techniques for developing, analyzing, and interpreting assessment measures for English language learners, including oral, writing, reading, and content-area assessment, as well as assessments used in public schools.

Prerequisite/Restriction: Admission into a teacher education program.

Cross-listed as: TEAL 6780.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 5400 - Multiple Talent Approach to Teaching
2 credits
Explores one model for embedding the teaching of creative and critical thinking in regular curricula. Includes practical application requirements. 5000-level and 6000-level syllabi are differentiated.

Cross-listed as: TEAL 6400.

Semester(s) Traditionally Offered: Summer

TEAL 5420 - Education of Gifted and Talented Learners
2 credits
Multiple perspectives on giftedness. Characteristics and needs of gifted individuals. Overview of services for gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5430/TEAL 6430.

Cross-listed as: TEAL 6420.

Semester(s) Traditionally Offered: Fall

TEAL 5430 - Practicum: Individual Case Study
1 credit
Supervised study of individual gifted child of student’s choice. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5420/TEAL 6420.

Cross-listed as: TEAL 6430.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

TEAL 5450 - Social and Emotional Needs of Gifted and Talented Learners
2 credits
Explores social and emotional needs of gifted and talented learners (e.g., asynchrony, perfectionism, underachievement), as well as appropriate educational responses to those needs. Syllabi for 5000-level and 6000-level offerings are differentiated. Course taken at 5000 level may not be used toward a graduate degree in the School of TEAL.

Corequisite: TEAL 5455/TEAL 6455.

Cross-listed as: TEAL 6450.
Semester(s) Traditionally Offered: Spring

TEAL 5455 - Practicum: Gifted Social and Emotional Needs Application
1 credit

Application of appropriate educational responses to social/emotional needs of gifted learners. Syllabi for 5000-level and 6000-level offerings are differentiated. Course taken at 5000 level may not be used toward a graduate degree in the School of TEAL.

Corequisite: TEAL 5450/TEAL 6450.

Cross-listed as: TEAL 6455.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

TEAL 5460 - Assessment in Gifted Education
2 credits

Introduction to gifted identification. Includes strategies for pre-formative, and summative assessments with gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5470/TEAL 6470.

Cross-listed as: TEAL 6460.

Semester(s) Traditionally Offered: Spring

TEAL 5470 - Practicum: Gifted Assessment Applications
1 credit

Application of strategies for pre-formative, and summative assessments with gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5460/TEAL 6460.

Cross-listed as: TEAL 6470.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

TEAL 5480 - Methods and Materials in Gifted Education
2 credits

Curricular/instructional models in gifted education.

Development of instructional materials for use with gifted students. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5490/TEAL 6490.

Cross-listed as: TEAL 6480.

Semester(s) Traditionally Offered: Fall

TEAL 5490 - Practicum: Gifted Strategies Applications
1 credit

Curricular/instructional models in gifted education applied to a classroom setting. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 5480/TEAL 6480.

Cross-listed as: TEAL 6490.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

TEAL 5560 - Special Topics
0.5-4 credits

Field-based program focusing upon characteristics of effective teaching methodologies, teaching performance, curriculum decision making, value guidelines, and the characteristics of the learner. May be graded with a letter grade or graded as Pass/Fail, as determined by the instructor.

Cross-listed as: TEAL 6560 and EDUC 5560/EDUC 6560.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6010 - Critical Issues in Secondary Education
3 credits

Introduces graduate students to critical issues affecting secondary education. Particular attention given to nature of the high school as an institution, its development, and how it functions in today's environment.

Cross-listed as: TEAL 7010.

Semester(s) Traditionally Offered: Spring, Fall
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEAL 6020</td>
<td>Foundations and Change in Early Childhood Education</td>
<td>3 credits</td>
<td>Survey course designed to acquaint professionals with historical and philosophical foundations of early childhood education, leading to examination of contemporary trends and issues. Cross-listed as: TEAL 7020.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Semester(s) Traditionally Offered: Spring</td>
</tr>
<tr>
<td>TEAL 6040</td>
<td>Designing and Interpreting Measurements for Assessing Student Learning</td>
<td>3 credits</td>
<td>Teachers and instructional supervisors develop their talents for (a) designing and interpreting measurements for monitoring students’ learning and (b) interpreting scores from standardized and government-mandated tests. Semester(s) Traditionally Offered: Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cross-listed as: TEAL 7040.</td>
</tr>
<tr>
<td>TEAL 6050</td>
<td>Theories of Instructional Supervision</td>
<td>3 credits</td>
<td>Provided between master’s and doctoral versions. Cross-listed as: TEAL 7050. Semester(s) Traditionally Offered: Fall, Summer</td>
</tr>
<tr>
<td>TEAL 6080</td>
<td>Leadership and the School Principal</td>
<td>3 credits</td>
<td>Focuses on the school principalship. Provides an overview of the roles and responsibilities of the principal, with emphasis placed on understanding leadership and instructional leadership. Introduces students to knowledge, dispositions, and skills required of successful school principals. Semester(s) Traditionally Offered: Fall, Spring, Summer</td>
</tr>
<tr>
<td>TEAL 6090</td>
<td>Theories of Organizational Leadership in Education</td>
<td>3 credits</td>
<td>Introduces prospective school administrators to theories of organizational behavior and practices of managing and leading people within the context of the school organization. Differentiated syllabi provided between master’s and doctoral versions. Semester(s) Traditionally Offered: Spring, Summer</td>
</tr>
<tr>
<td>TEAL 6100</td>
<td>Motivation and Management in Inclusive Settings</td>
<td>3 credits</td>
<td>Leads in-service teachers to develop classroom management strategies for gaining and maintaining students’ cooperation. Semester(s) Traditionally Offered: Summer, Fall</td>
</tr>
<tr>
<td>TEAL 6150</td>
<td>Foundations of Curriculum</td>
<td>3 credits</td>
<td>Examination of theories, principles, and foundations of curriculum, emphasizing program planning and current curriculum trends. Semester(s) Traditionally Offered: Spring, Summer, Fall</td>
</tr>
<tr>
<td>TEAL 6190</td>
<td>Theories of Learning and Models of Teaching</td>
<td>3 credits</td>
<td>Reviews the philosophical, psychological, and sociological genealogies behind historical and current theories of learning. Analyzes the approaches, metaphors, and models of teaching that these theories inform. Semester(s) Traditionally Offered: Spring, Summer, Fall</td>
</tr>
<tr>
<td>TEAL 6200</td>
<td>Curriculum and Issues in Early Childhood Education</td>
<td>2 credits</td>
<td>Examination of current issues and research topics in early childhood education important to the improvement of K-3 programs. Semester(s) Traditionally Offered: Fall</td>
</tr>
<tr>
<td>TEAL 6210</td>
<td>Graduate Student Teaching</td>
<td>3-10 credits</td>
<td></td>
</tr>
</tbody>
</table>
Thirteen-week culminating practicum in which students assume full-time teaching responsibilities under direction of cooperating teachers in a major field.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring

TEAL 6220 - Workshop in Early Childhood Education
1-6 credits

Exploration of current topics important in teaching young children.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Summer

TEAL 6230 - Literacy Learning in Early Childhood Education
3 credits

Investigation of early literacy development and effective classroom practices in kindergarten and the primary grades. Relevant research is examined.

Semester(s) Traditionally Offered: Fall

TEAL 6240 - Workshop in Science Education
1-6 credits

Exploration of current topics in science education.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

TEAL 6250 - Graduate Cooperative Work Experience
1-10 credits

Cooperative education work experience at a professional level.

Prerequisite/Restriction: Prior approval required.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6255 - Mathematics Curriculum and Instruction
2 credits

Examination of current curriculum standards, trends, and effective methods of instruction for mathematics in middle and secondary schools.

Semester(s) Traditionally Offered: Summer

TEAL 6260 - Supervised Practicum in Early Childhood Education
2 credits

Encompasses approximately 125 hours of supervised practicum in a kindergarten classroom and observations in prekindergarten settings. Participants demonstrate their ability to integrate and apply early childhood theory and research in kindergarten.

TEAL 6300 - Workshop in Mathematics Education
1-6 credits

Exploration of current topics and methods in mathematics education. In the past, topics have included: relevant mathematics in rural settings, integration of mathematics and children's literature, and ethnomathematics.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6305 - Secondary English Curriculum and Instruction
2 credits

Examination of current curriculum standards, trends, and effective methods of instruction for English/language arts in middle and secondary schools.

Semester(s) Traditionally Offered: Summer

TEAL 6310 - Content Area Reading and Writing
3 credits

Practical approaches for teaching reading/writing and learning skills to elementary, middle, and high school students in all content areas.

Semester(s) Traditionally Offered: Fall

TEAL 6320 - Literacy and Cognition
3 credits

Examination of cognitive and sociocultural research related to K-12 students' acquisition and use of reading, writing, and learning strategies. Explores implications for school policies and classroom instruction.
Semester(s) Traditionally Offered: Spring

TEAL 6340 - Adolescent Literacy Development
3 credits

Focuses on instructional practices, as well as research and theory related to fostering the literacy development of middle school and high school students.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 6350 - Reading Assessment and Intervention
3 credits

Covers the correlates and diagnosis of reading problems, as well as methods and materials for remedial reading instruction.

Prerequisite/Restriction: ELED 3100, ELED 4040; or teaching experience in elementary, middle, or secondary school.

Semester(s) Traditionally Offered: Spring

TEAL 6370 - Supervised Internship in Reading and Writing
1-3 credits

Individual practicum experience designed to allow graduate students to implement and focus on one or more aspects of reading and writing instruction in a classroom or clinical setting.

Prerequisite/Restriction: Consent of instructor.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6380 - Effective Writing Instruction
3 credits

Investigates the nature of writing and its theoretical/research base, in order to help students better understand instructional strategies for teaching composition. Primarily focuses on effective methods for teaching and assessing student writing.

Semester(s) Traditionally Offered: Summer

TEAL 6390 - Teaching with Tradebooks in the Elementary and Middle Level Classroom
3 credits

Explores the use of trade books in the elementary and middle level classroom. Focuses on how teachers can use various genres to invite children to read and write.

Semester(s) Traditionally Offered: Spring

TEAL 6400 - Multiple Talent Approach to Teaching
2 credits

Explores one model for embedding the teaching of creative and critical thinking in regular curricula. Includes practical application requirements. 5000-level and 6000-level syllabi are differentiated.

Cross-listed as: TEAL 5400.

Semester(s) Traditionally Offered: Summer

TEAL 6410 - Social Foundations of Education
3 credits

Examines current educational issues and trends within contexts of history, philosophy, and cultural foundations.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6420 - Education of Gifted and Talented Learners
2 credits

Multiple perspectives on giftedness. Characteristics and needs of gifted individuals. Overview of services for gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6430/TEAL 5430.

Cross-listed as: TEAL 5420.

Semester(s) Traditionally Offered: Fall

TEAL 6425 - Cultural Issues in Gifted and Talented Education
3 credits

Explores the issue of under-representation in gifted and talented programs, due to factors of cultural diversity, including ethnicity, poverty, and language. Differentiated syllabi for 6000-level and 7000-level course.

Cross-listed as: TEAL 7425.
Semester(s) Traditionally Offered: Spring

TEAL 6430 - Practicum: Individual Case Study
1 credit

Supervised study of individual gifted child of student's choice. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6420/TEAL 5420.

Cross-listed as: TEAL 5430.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

TEAL 6440 - Creativity in Education
2 credits

Exploration of theories, research, and strategies concerning creativity, and their application to personal creativity and to improvement of classroom practice.

Semester(s) Traditionally Offered: Summer

TEAL 6450 - Social and Emotional Needs of Gifted and Talented Learners
2 credits

Explores social and emotional needs of gifted and talented learners (e.g., asynchrony, perfectionism, underachievement), as well as appropriate educational responses to those needs. Syllabi for 5000-level and 6000-level offerings are differentiated. Course taken at 5000 level may not be used toward a graduate degree in the School of TEAL.

Corequisite: TEAL 6455/TEAL 5455.

Cross-listed as: TEAL 5450.

Semester(s) Traditionally Offered: Spring

TEAL 6460 - Assessment in Gifted Education
2 credits

Introduction to gifted identification. Includes strategies for pre-formative, and summative assessments with gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6470/TEAL 5470.

Cross-listed as: TEAL 5460.

Semester(s) Traditionally Offered: Spring

TEAL 6465 - Identification Issues in Gifted and Talented Education
3 credits

Explores issues in the identification of individuals as gifted and talented, particularly in relationship to the theory and practice of identification in public school settings. 6000/7000 level syllabus differentiated.

Cross-listed as: TEAL 7465.

Semester(s) Traditionally Offered: Spring

TEAL 6470 - Practicum: Gifted Assessment Applications
1 credit

Application of strategies for pre-formative, and summative assessments with gifted learners. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6460/TEAL 5460.

Cross-listed as: TEAL 5470.

Pass/Fail only.

Semester(s) Traditionally Offered: Spring

TEAL 6480 - Methods and Materials in Gifted Education
2 credits
Curricular/instructional models in gifted education. Development of instructional materials for use with gifted students. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6490/TEAL 5490.

Cross-listed as: TEAL 5480.

Semester(s) Traditionally Offered: Fall

TEAL 6485 - Program Development in Gifted and Talented Education
3 credits

Investigates principles and models for development and implementation of various service options in gifted and talented education, emphasizing leadership for program development. 6000/7000 level syllabi differentiated.

Cross-listed as: TEAL 7485.

Semester(s) Traditionally Offered: Fall

TEAL 6490 - Practicum: Gifted Strategies Applications
1 credit

Curricular/instructional models in gifted education applied to a classroom setting. 5000-level and 6000-level syllabi are differentiated.

Corequisite: TEAL 6480/TEAL 5480.

Cross-listed as: TEAL 5490.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall

TEAL 6495 - Special Topics in Gifted and Talented Education
3 credits

Seminar course in current issues and special topics in gifted and talented education. Differentiated syllabi for 6000-level and 7000-level course.

Prerequisite/Restriction: TEAL 6420/TEAL 5420.

Cross-listed as: TEAL 7495.

Semester(s) Traditionally Offered: Fall

TEAL 6500 - School Finance and Resource Management
3 credits

Focuses on generating, allocating, and managing revenues and resources for public schools. Emphasizes law and policy regarding Utah school finance.

Semester(s) Traditionally Offered: Spring, Summer

TEAL 6505 - Science Curriculum and Instruction
2 credits

Examination of current curriculum standards, trends, and effective methods of instruction for science in middle and secondary schools. Emphasizes science program improvement through investigative lab activities.

Semester(s) Traditionally Offered: Summer

TEAL 6521 - Mathematics for Teaching K-8: Numbers and Operations
3 credits

This course, for K-8 teachers, will cover the content of Number and Operations to develop comprehensive understanding of our number system and relate its structure to computation, arithmetic, algebra, and problem solving.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or Equivalent

Cross-listed as: EMTH 5030 and TEPD 5521

Semester(s) Traditionally Offered: Fall

TEAL 6522 - Mathematics for Teaching K-8: Rational Numbers and Proportional Reasoning
3 credits

To provide practicing teachers a deeper understanding of rational numbers, operations with rational numbers, and proportionality, and instructional strategies to facilitate the instruction of this content for elementary students.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: EMTH 5040 and TEPD 5522

Semester(s) Traditionally Offered: Spring
TEAL 6523 - Mathematics for Teaching K-8: Algebraic Reasoning
3 credits
To provide practicing teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students.
Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent
Cross-listed as: EMTH 5050 and TEPD 5523
Semester(s) Traditionally Offered: Fall

TEAL 6524 - Mathematics for Teaching K-8: Geometry and Measurement
3 credits
To provide practicing teachers a deeper understanding of the geometry and measurement context that exists in the state core and instructional strategies to facilitate the instruction of this content.
Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent
Cross-listed as: EMTH 5060 and TEPD 5524
Semester(s) Traditionally Offered: Spring

TEAL 6525 - Mathematics for Teaching K-8: Data Analysis and Problem Solving
3 credits
This course will provide practicing teachers a deeper understanding of probability and data representation and analysis.
Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent
Cross-listed as: EMTH 5070 and TEPD 5525
Semester(s) Traditionally Offered: Summer

TEAL 6540 - Data-Based Decision Making for School Leaders
3 credits
Prepares prospective school leaders to conduct research and to collect and analyze data for decision making and program evaluation in schools.
Semester(s) Traditionally Offered: Fall

TEAL 6550 - Practicum in the Evaluation of Instruction
1-4 credits
Field-based research study contributing toward graduate degrees. Supervisory licensure related to assessment of ongoing or newly proposed program of instruction.
Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6551 - Mathematics for Teaching K-8: Assessment and Intervention
3 credits
To provide practicing teachers a deeper understanding of the various types of assessment and their appropriate use for guiding instruction, intervention and evaluation of student learning.
Prerequisite/Restriction: Bachelor’s degree in Elementary Education or equivalent
Cross-listed as: TEPD 5551
Semester(s) Traditionally Offered: Summer

TEAL 6555 - Science Education and the Meaning of Science
3 credits
Examines the theories and influences shaping the activity of science. Also explores how these theories have been challenged over time, as well as how they influence science education.
Semester(s) Traditionally Offered: Summer

TEAL 6560 - Special Topics
0.5-4 credits
Field-based program focusing upon characteristics of effective teaching methodologies, teaching performance, curriculum decision making, value guidelines, and the characteristics of the learner. May be graded with a letter grade or graded as Pass/Fail, as determined by the instructor.
Cross-listed as: TEAL 5560 and EDUC 6560/EDUC 5560.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6570 - Advanced Comprehension
3 credits

Designed to enhance teachers’ understanding of research and practice related to teaching vocabulary and reading comprehension and fostering motivation for reading.

Prerequisite/Restriction: TEAL 6310.

Semester(s) Traditionally Offered: Spring

TEAL 6580 - Character and Values Education
2 credits

Overview of research, theory, and practical approaches to values education, emphasizing processes of moral development and socialization.

Semester(s) Traditionally Offered: Summer

TEAL 6590 - Supervising School Reading Program
3 credits

Examines strategies for improving school reading programs. Emphasizes simulations, guided practice, and small group discussions.

Prerequisite/Restriction: TEAL 6350.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6600 - Philosophy and Organization of the Middle Level School
3 credits

Focuses on characteristics of young adolescents and how middle level schools can be organized to meet those characteristics through interdisciplinary teaming, advisory programs, and exploratory mini-courses. Graduate students have additional course requirements for design and implementation of a project.

Cross-listed as: TEAL 4600.

Semester(s) Traditionally Offered: Fall

TEAL 6610 - Curriculum, Methods, and Assessment for the Middle Grades
3 credits

Integrates current approaches to curriculum design with instructional models and assessment of learning appropriate for grades 5-9. To receive credit for 6610, graduate students design and implement an action research project related to curricular or pedagogical interests, then share their findings in class. Project will include review of literature related to student’s interest.

Prerequisite/Restriction: TEAL 6600.

Cross-listed as: TEAL 4610.

Semester(s) Traditionally Offered: Spring

TEAL 6620 - Service Learning Applications for the Middle Grades
3 credits

Examines literature related to service learning for the middle grades and application of service learning in curriculum.

Cross-listed as: TEAL 4620.

Semester(s) Traditionally Offered: Summer

TEAL 6630 - Methods for Teaching Middle Level Mathematics
3 credits

Teaching methods course for elementary teachers seeking a middle-level (Level II) mathematics endorsement.

Prerequisite/Restriction: Satisfactory completion of MATH 1210 and ELED 4060 or an equivalent elementary mathematics methods course.

Cross-listed as: TEAL 4630.

Semester(s) Traditionally Offered: Fall
TEAL 6700 - Improvement of Science Instruction
3 credits

For practicing elementary and middle-school teachers or those seeking alternative licensure in science education. Survey of current research in science education and strategies for implementing best practice in classroom settings. Considers a Science/Technology/Society approach to teaching science, as well as the use of action research to improve practice.

Semester(s) Traditionally Offered: Spring

TEAL 6710 - Diversity in Education
3 credits

Analyzes the role of education in a culturally and linguistically diverse society. Examines the place multicultural education and inclusive pedagogies have in advancing educational equity and social justice. Explores multiple ways educators work with and for transnational communities.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6720 - Practicum in Science Instruction
1 credit

Optional practicum to be taken semester following enrollment in TEAL 6700.

Semester(s) Traditionally Offered: Spring

TEAL 6730 - Educational Linguistics
3 credits

Examines theoretical foundations, functions, and characteristics of first language acquisition and language variation in the Pre-K-12 classroom context. Also emphasizes social context of language in K-12 classroom interaction, instruction, and curriculum. Additional requirements for graduate students.

Cross-listed as: TEAL 4730.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 6740 - School Law
3 credits

Acquaints students with legal issues relating to public education. Considers rights and responsibilities of students, teachers, and educational practitioners. Relates these rights to school programs and operations as determined by state and federal laws and court decisions.

Semester(s) Traditionally Offered: Fall, Summer

TEAL 6745 - Second Language Acquisition in the Classroom
3 credits

Explores the processes of second language acquisition, including the influences of linguistic, cognitive, and sociocultural factors, as well as the relationship to first language acquisition. Emphasizes implications for teaching in the K-12 classroom environment. Additional requirements for graduate students.

Cross-listed as: TEAL 4745.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 6750 - Improvement of Mathematics Instruction
3 credits

Examines advanced concepts in curriculum theory and methods of teaching mathematics in the elementary and middle school.

Prerequisite/Restriction: ELED 4060 or teaching experience in elementary or middle school.

Semester(s) Traditionally Offered: Spring

TEAL 6760 - Foundations of ESL/Bilingual Education
3 credits

Explores sociocultural and historical contexts in which ESL/bilingual education has developed in the U.S. Addresses structures and purposes of ESL classes, sheltered instruction, bilingual education, and dual-language immersion, as well as diverse student populations these programs intend to reach. Additional coursework will be required for students desiring TEAL 6760 graduate credit.

Cross-listed as: TEAL 4760

Semester(s) Traditionally Offered: Spring, Fall

TEAL 6770 - ESOL Instructional Strategies in the Content Areas
3 credits
Focuses on methods which help English language learners in content-area classrooms to increase academic learning and integration into the larger school community.

Prerequisite/Restriction: Admission into a teacher education program.

Cross-listed as: TEAL 4770.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6780 - Assessment for Language Learners
3 credits

Explores principles and techniques for developing, analyzing, and interpreting assessment measures for English language learners, including oral, writing, reading, and content-area assessment, as well as assessments used in public schools.

Prerequisite/Restriction: Admission into a teacher education program.

Cross-listed as: TEAL 4780.

Semester(s) Traditionally Offered: Spring, Summer, Fall

TEAL 6800 - Improvement of Social Studies Instruction
3 credits

Emphasizes contemporary research and practice related to K-12 social studies programs. Examines curriculum and methods of instruction surrounding topics such as the interrelationships between global education, multicultural education, and civic education.

Prerequisite/Restriction: ELED 4050 or teaching experience in elementary or middle school.

Semester(s) Traditionally Offered: Summer

TEAL 6840 - Workshop: Intermountain Conference on Education of the Gifted and Talented
1-2 credits

Provides instruction by leading national authorities in gifted and talented education, as well as networking with educators of the gifted from throughout the Intermountain West.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Summer

TEAL 6900 - Independent Study
0.5-3 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6910 - Independent Research
0.5-3 credits

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6930 - Supervision and Administrative Internship Seminar
2 credits

Jointly (with TEAL 6940 ) provides experience (minimum 250 hours) in supervision and administration in elementary and secondary school settings as they relate to the performances of the six Interstate School Leaders Licensure Consortium (ISLLC) Standards for School Leaders. Registration includes weekly seminar.

Pass/Fail only.
Campus: Main campus and RCDE
Semester(s) Traditionally Offered: Fall, Spring

TEAL 6940 - Supervision and Administrative Internship
1-4 credits

Jointly (with TEAL 6930 ) provides experience (minimum 200 hours) in supervision and administration in elementary and secondary school settings as they relate to the performances of the six Interstate School Leaders Licensure Consortium (ISLLC) Standards for School Leaders.

Repeatable for credit
Pass/Fail only.
Campus: Main campus and RCDE
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6945 - Supervision and Administration Internship
3 credits

Provides experience in supervision and administration in school systems.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6960 - Master's Creative Project
3 credits
Individually directed creative project, with a focus closely related to coursework or to area of teaching specialization.

Prerequisite/Restriction: Instructor's approval Only students pursuing the Plan B MEd option should enroll in this course.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6970 - Thesis
3-6 credits
Individually directed work in thesis writing, with guidance from committee chair. Designed for use on MA and MS degrees only.

Prerequisite/Restriction: Instructor’s approval.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6980 - Portfolio Project
3 credits
Individually directed portfolio for students in the MEd Plan B degree, only to be taken at the end of student's program of study. Designed for students to integrate and apply concepts learned in the master’s program.

Prerequisite/Restriction: Instructor’s approval.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 6990 - Continuing Graduate Advisement
1-9 credits
Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 7000 - Student Teaching Supervision
1-3 credits
Considers ways and means of providing desirable experiences for student teachers in the public schools.

Analysis of roles of classroom teacher and college supervisor.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

TEAL 7010 - Critical Issues in Secondary Education
3 credits
Introduces graduate students to critical issues affecting secondary education. Particular attention given to nature of the high school as an institution, its development, and how it functions in today’s environment.

Cross-listed as: TEAL 6010.

Semester(s) Traditionally Offered: Spring, Fall

TEAL 7020 - Foundations and Change in Early Childhood Education
3 credits
Survey course designed to acquaint professionals with historical and philosophical foundations of early childhood education, leading to examination of contemporary trends and issues.

Cross-listed as: TEAL 6020.

Semester(s) Traditionally Offered: Spring

TEAL 7050 - Theories of Instructional Supervision
3 credits
Provided between master’s and doctoral versions.

Cross-listed as: TEAL 6050.

Semester(s) Traditionally Offered: Fall, Summer

TEAL 7055 - Internship in Program Evaluation
3 credits
Experience in practical aspects of program evaluation through planned, supervised evaluation project participation approved by student's supervisory committee.

Prerequisite/Restriction: Instructor’s approval.
Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
TEAL 7065 - Internship in Research
1-6 credits
Experience in conducting research through planned, supervised research project participation approved by student's supervisory committee.

Prerequisite/Restriction: Instructor's approval.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 7090 - Theories of Organizational Leadership in Education
3 credits
Introduces prospective school administrators to theories of organizational behavior and practices of managing and leading people within the context of the school organization. Differentiated syllabi provided between master's and doctoral versions.

Cross-listed as: TEAL 6090.
Semester(s) Traditionally Offered: Spring, Summer

TEAL 7100 - Practices of Instructional Supervision
2 credits
Application of instructional supervisory theories and practices of supervisory behaviors as they relate to improvement of instruction.

Prerequisite/Restriction: TEAL 7050.
Semester(s) Traditionally Offered: Summer

TEAL 7150 - Curriculum Theory
3 credits
Examines the origins and development of major historical and contemporary curriculum theories. Considers how these theories affect the organization of the school, while also affecting the lives and work of teachers, administrators, students, and the community.

Prerequisite/Restriction: TEAL 6150.
Semester(s) Traditionally Offered: Summer, Odd Numbered Years

TEAL 7300 - Historical, Social, and Cultural Foundations of Education
3 credits
Examines relationship of modern school in terms of historical, cultural, and social foundations of education.

Prerequisite/Restriction: TEAL 6410, TEAL 7020/TEAL 6020, or permission of instructor.
Semester(s) Traditionally Offered: Fall

TEAL 7310 - Teaching-Learning Foundations in Education
3 credits
Seminar in which learning theories and teaching models/skills are demonstrated, critically examined, and integrated.

Prerequisite/Restriction: Graduate course in educational psychology or equivalent.
Semester(s) Traditionally Offered: Spring

TEAL 7320 - Theories and Models of Reading
3 credits
Examination of cognitive and sociocultural research related to K-12 students’ acquisition and use of reading, writing, and learning strategies. Explores implications for school policies and classroom instruction.

Semester(s) Traditionally Offered: Spring

TEAL 7325 - Instructional Leadership
3 credits
Emphasizes application of theory, research, and effective practice to instructional and curricular improvement. Examines educational change.

Semester(s) Traditionally Offered: Fall

TEAL 7330 - Internship in Supervision
1-3 credits
Directed experiences in supervision with selected public school personnel in approved settings. Experiences arranged by student's graduate committee.

Prerequisite/Restriction: Instructor's approval.
TEAL 7350 - Internship in Curriculum Development
1-3 credits

Directed experiences in curriculum development with selected public school personnel in approved settings. Experiences arranged by student’s graduate committee.

Prerequisite/Restriction: Instructor’s approval.

TEAL 7360 - Research in Literacy
3 credits

Covers classical, historical, and contemporary research studies in literacy, with an emphasis upon understanding and translating findings into classroom practices or clinical settings. Doctoral students complete additional course assignments.

Prerequisite/Restriction: Permission of instructor.

TEAL 7425 - Cultural Issues in Gifted and Talented Education
3 credits

Explores the issue of under-representation in gifted and talented programs, due to factors of cultural diversity, including ethnicity, poverty, and language. Differentiated syllabi for 6000-level and 7000-level course.

Cross-listed as: TEAL 6425.

TEAL 7465 - Identification Issues in Gifted and Talented Education
3 credits

Explores issues in the identification of individuals as gifted and talented, particularly in relationship to the theory and practice of identification in public school settings. 6000/7000 level syllabus differentiated.

Cross-listed as: TEAL 6465.

TEAL 7485 - Program Development in Gifted and Talented Education
3 credits

Investigates principles and models for development and implementation of various service options in gifted and talented education, emphasizing leadership for program development. 6000/7000 level syllabi differentiated.

Cross-listed as: TEAL 6485.

TEAL 7495 - Special Topics in Gifted and Talented Education
3 credits

Seminar course in current issues and special topics in gifted and talented education. Differentiated syllabi for 6000-level and 7000-level course.

Prerequisite/Restriction: TEAL 6420/TEAL 5420.

Cross-listed as: TEAL 6495.

TEAL 7500 - Interdisciplinary Workshop
1-2 credits

Semester(s)Traditionally Offered: Fall, Spring, Summer

TEAL 7540 - College Teaching Apprenticeship
1-3 credits

Provides guided experience in teaching university courses.

Prerequisite/Restriction: Admission to PhD or EdD program and approval of department head and major advisor.

TEAL 7550 - Evaluation of Supervisory Performance
1-4 credits

Program for graduate students to become acquainted with and demonstrate competency in supervision.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer
TEAL 7551 - Mathematics Education Research Foundations
3 credits

Critical examination of research impacting mathematics education, including historical, social, political, and economic contexts and foundations of mathematics. Reviews various historical literature and theoretical perspectives, including topics on mathematics teaching, learning, culture, policy, trends, technology, and student outcomes.

Prerequisite/Restriction: Admission to the PhD or EdD Program in the School of Teacher Education and Leadership.

Semester(s) Traditionally Offered: Spring

TEAL 7554 - Mathematics Education Teacher Preparation and Pedagogy
3 credits

Emphasizes the application of theory, research, and pedagogical strategies to the preparation of mathematics teachers and teacher leaders. Applies principles of effective professional development, develops expertise in designing and teaching mathematics methods courses, and creates mathematics experiences for teachers.

Prerequisite/Restriction: Admission to the PhD or EdD Program in the School of Teacher Education and Leadership.

Semester(s) Traditionally Offered: Spring

TEAL 7552 - Mathematics Education Learning Theory
3 credits

Critical examination of the historical development of cognitive theories of mathematical learning, including the influence of selected theorists on mathematical thinking, teaching, and assessment. Explores mathematical learning models, including research literature on numeracy, brain research, learning trajectories, differentiation, and equity.

Prerequisite/Restriction: Admission to the PhD or EdD Program in the School of Teacher Education and Leadership.

Semester(s) Traditionally Offered: Summer

TEAL 7555 - Mathematics Education Current Issues and Policy
3 credits

Reviews and critiques current issues and policy documents in mathematics education nationally and internationally, including research trends, emerging theories, and political policies influencing mathematics education. Synthesizes cutting-edge research to develop a theoretical framework and original research questions and inquiries.

Prerequisite/Restriction: Admission to the PhD or EdD Program in the School of Teacher Education and Leadership.

Semester(s) Traditionally Offered: Summer

TEAL 7553 - Mathematics Education Curriculum Content and Evaluation
3 credits

Reviews and evaluates the content of the school mathematics curriculum at the state, national, and international levels, including research on specific mathematics curriculum topics. Emphasizes research findings and recommended practices on the development and evaluation of mathematics curriculum.

Prerequisite/Restriction: Admission to the PhD or EdD Program in the School of Teacher Education and Leadership.

Semester(s) Traditionally Offered: Fall

TEAL 7556 - Mathematics Education Research Design and Assessment
3 credits

Examines a variety of research designs applicable to mathematics education, including teaching experiments, classroom research, clinical studies, and mathematical modeling. Evaluates mathematics assessments and instrumentation and considers the role of assessments nationally and internationally. Provides experience in conceptualizing a research project.

Prerequisite/Restriction: TEAL 7551 and TEAL 7555; admission to the PhD or EdD Program in the School of Teacher Education and Leadership.
Semester(s) Traditionally Offered: Fall

TEAL 7810 - Research Seminar
1-3 credits

Identification of research problems and critical issues, consideration of critical issues and research methods, and application of data analysis procedures under faculty direction.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 7900 - Independent Study
0.5-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 7910 - Independent Research
0.5-3 credits

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEAL 7990 - Continuing Graduate Advisement
1-12 credits

Repeatable for credit.

Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring, Summer

TEPD 5551 - Mathematics for Teaching K-8: Assessment and Intervention
3 credits

To provide practicing teachers a deeper understanding of the various types of assessment and their appropriate use for guiding instruction, intervention and evaluation of student learning.

Prerequisite/Restriction: Bachelor's degree in Elementary Education or equivalent

Cross-listed as: TEAL 6551

Semester(s) Traditionally Offered: Summer

Teacher Education Professional Development

TEPD 5420 - Education of Gifted and Talented Learners of Professionals
2 credits

Provides multiple cultural and historical perspectives on giftedness and talent. Explores characteristics of gifted individuals, with emphasis on identifying needs. Intended for practicing teachers.

Corequisite: TEPD 5430

TEPD 5430 - Practicum: Individual Case Study for Practitioners
1 credit

Practicum experience in association with TEPD 5420. Requires intensive supervised study of gifts and talents of individual child of student’s choice.

Corequisite: TEPD 5420

Pass/Fail only

TEPD 5440 - Creativity in Education for Professional Educators
2 credits

Exploration of theories, research, and strategies concerning creativity, and their application to personal creativity and to improvement of classroom practice. Intended for practicing teachers.

TEPD 5450 - Social and Emotional Needs of Gifted and Talented Learners for Professional Educators
2 credits

Explores social and emotional needs of gifted and talented learners (e.g., asynchrony, perfectionism, underachievement), as well as appropriate educational responses to those needs. Intended for practicing teachers.

Corequisite: TEPD 5455

TEPD 5455 - Practicum: Gifted Social and Emotional Needs Application for Professional Educators
1 credit

Requires application of appropriate educational responses to social and emotional needs of gifted learners.

Corequisite: TEPD 5450
TEPD 5460 - Assessment in Gifted Education for Professional Educators
2 credits

Provides introduction to identifying students as gifted, creative, and talented. Presents strategies of pre-assessment, formative assessment, and summative assessment with gifted level learners. Intended for practicing teachers.

Corequisite: TEPD 5470

TEPD 5470 - Practicum: Gifted Assessment Applications for Professional Educators
1 credit

Required applications of strategies for pre-assessment, formative assessment, and summative assessment with gifted level learners in classroom settings. Intended for practicing teachers.

Corequisite: TEPD 5460

Pass/Fail only

TEPD 5480 - Methods and Materials in Gifted Education for Professional Educators
2 credits

Explores programming and curriculum models in gifted education, with special attention to the development of instructional materials for use with students. Intended for practicing teachers.

Corequisite: TEPD 5490

TEPD 5490 - Practicum: Gifted Strategies Applications for Professional Educators
1 credit

Curriculum and instruction models and materials used in gifted education are applied to the classroom setting. Intended for practicing teachers.

Corequisite: TEPD 5480

TEPD 5521 - Mathematics for Teaching K-8: Numbers and Operations
3 credits

This course, for K-8 teachers, will cover the content of Number and Operations to develop comprehensive understanding of our number system and relate its structure to computation, arithmetic, algebra, and problem solving.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or Equivalent

Cross-listed as: EMTH 5030 and TEAL 6521

Semester(s) Traditionally Offered: Fall

TEPD 5522 - Mathematics for Teaching K-8: Rational Numbers and Proportional Reasoning
3 credits

To provide practicing teachers a deeper understanding of rational numbers, operations with rational numbers, and proportionality, and instructional strategies to facilitate the instruction of this content for elementary students.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: EMTH 5040 and TEAL 6522

Semester(s) Traditionally Offered: Spring

TEPD 5523 - Mathematics for Teaching K-8: Algebraic Reasoning
3 credits

To provide practicing teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: EMTH 5050 and TEAL 6523

Semester(s) Traditionally Offered: Fall

TEPD 5524 - Mathematics for Teaching K-8: Geometry and Measurement
3 credits

To provide practicing teachers a deeper understanding of the geometry and measurement context that exists in the state core and instructional strategies to facilitate the instruction of this content.
Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: EMTH 5060 and TEAL 6524

Semester(s) Traditionally Offered: Spring

TEPD 5525 - Mathematics for Teaching K-8: Data Analysis and Problem Solving
3 credits

This course will provide practicing teachers a deeper understanding of probability and data representation and analysis.

Prerequisite/Restriction: Bachelors Degree in Elementary Education or equivalent

Cross-listed as: EMTH 5070 and TEAL 6525

Semester(s) Traditionally Offered: Summer

TEPD 5560 - Special Topics
.5-4 credits

Field-based program focusing upon characteristics of effective teaching methodologies, teaching performance curriculum decision making, value guidelines, and the characteristics of the learner. Intended for practicing professionals.

Repeatable for credit

TEPD 5710 - Linguistic and Cultural Diversity for Practicing Teachers
3 credits

Critically addresses sociocultural and political factors contributing to the education of ELLs, including whiteness, racism, and the common distances between schools and ESL students and their families. Teachers will examine the multicultural environments in their schools and make recommendations for improvement.

TEPD 5730 - Educational Linguistics for Practicing Teachers
3 credits

Investigates ways in which human languages are structured, how they change, how they reflect the cultures in which they are used, and how they are learned. Teachers will use this information to analyze student work for developing second language skills.

TEPD 5745 - Second Language Acquisition for Practicing Teachers
3 credits

Critically explores the processes of second/third language acquisition including influences from linguistic, cognitive, sociocultural and dialogical perspectives, emphasizing the roles language, culture, power and the educator play in the process. Teachers will learn pedagogy appropriate for ELLs.

TEPD 5760 - Foundations of ESL/Bilingual Education for Practicing Teachers
3 credits

Explores sociocultural and historical contexts in which ESL/Bilingual Education has developed in the US. Varied language assistance programs and diverse language learners are addressed. Teachers will examine state, district, and school programs for language learners and make recommendations for improvement.

TEPD 5770 - ESOL Instructional Strategies for Practicing Teachers
3 credits

Focuses on strategies which help English language learners in content area classrooms increase academic learning and literacy. Teachers will be able to practice strategies learned in this class with their ESL students.

TEPD 5780 - Assessment of ELLs for Practicing Teachers
3 credits

Principles and techniques for developing and interpreting assessment measures for language learners. Explores assessment requirements for public schools, intensive language programs, and higher education. Teachers will evaluate existing assessment tools and make improvement with the knowledge they gain in this class.

Theatre Arts

THEA 1000 - Theatre Orientation for Majors
1 credit

Departmental policies, procedures, requirements, and philosophy. Introduction to fundamental audition and portfolio presentation techniques.
THEA 1013 - Understanding Theatre (BCA)
BCA Breadth Creative Arts
3 credits
Survey of dramatic principles and structure, genre, and conventions for nonmajors. Functions and contributions of theatre artists and practices of the contemporary stage.

THEA 1023 - Introduction to Film (BCA)
BCA Breadth Creative Arts
3 credits
Study of elements of film narrative in fictional and nonfictional movies to provide a deeper understanding of content and film form.

THEA 1030 - Exploring Performance Through Aesthetic Texts (BHU)
BHU Breadth Humanities
3 credits
Introduces concepts and practices of performance studies and oral language arts. Integrates interpretation, analysis, and performance of major literary genres and oral forms of communication that contain aesthetic qualities. Students learn theatre techniques to create original performance pieces.

THEA 1033 - Beginning Acting
3 credits
Demonstration of skills in actor awareness (personal and group), organic acting techniques, scene study with partners, and monologue preparation. Provides understanding of theories and methodologies. Skills demonstrated in areas of body movement, diction, observation, concentration, imagination, and "action."

THEA 1113 - Voice for Theatre
2 credits
Training in basic vocal principles (Rodenburg, Linklater). Covers breath placement and support, physical alignment, projection, and resonance. Students learn basic warm-up to prepare the voice for performance.

THEA 1223 - Stage Makeup
2 credits
Emphasizes one-dimensional and three-dimensional illusional work, focusing on knowledge and skills in "corrective" aging and period makeup, with introductions to related areas, such as hair, hands, and prosthetics.
Prerequisite/Restriction: Enrollment restricted to students who are theatre arts majors or who have received departmental authorization.

THEA 1430 - Movement for Actors I
2 credits
Introductory, experiential course in movement with emphasis on somatic practices (body and mind) used in theatre. Improvisation will be emphasized to develop a creative and imaginative approach to character, emotion, and action through movement.

THEA 1513 - Stagecraft
3 credits
Introduction to different physical theatre forms, standard stage equipment, and methods of staging plays. Basic practices in set construction, rigging, welding, props and stage crafts.
Prerequisite/Restriction: Enrollment limited to Theatre Arts Pre-Major and Major or permission of instructor

THEA 1713 - Introduction to Playscript Analysis
3 credits
Introductory course focusing on plot, character, language, and thematic analysis of varied historical and modern performance texts in the context of
THEA 2033 - Intermediate Acting: Scene Study
3 credits

Scene study from the modern and contemporary theatre using the principles studied in THEA 1033.

Prerequisite/Restriction: THEA 1033
Semester(s) Traditionally Offered: Fall, Spring

THEA 2044 - Audition/Preparation and Professionalism for the Theatre Performer
2 credits

This class will teach audition techniques, rehearsal preparation techniques and professional standards for actors, for implementation in Utah State Theatre productions and in the professional arena.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2203 - Costume Crafts
3 credits

Costume craft will introduce students to the many methods and skills needed to costume a production. Basic practices in sewing, pattern drafting, fabric makeup and costume crafts will be explored while developing skills in these areas.

Prerequisite/Restriction: Enrollment limited to Theatre Arts Pre-Major and Major or permission of instructor
Semester(s) Traditionally Offered: Fall, Spring

THEA 2410 - Directing
3 credits

Provides instruction and practice in play selection, script analysis, research, blocking, leadership, communication skills, conduct of rehearsals, self-awareness, production organization and operation, and personal organization for stage direction. Principles apply in professional, civic, and educational settings.

Prerequisite/Restriction: THEA 1113
Semester(s) Traditionally Offered: Spring

THEA 2430 - Movement for Actors II
2 credits

Theory and practice in physical and collaborative and devised theatre movement styles. Emphasis on creative approach for projecting character, emotion and action through use of the body. History and practical experience in advanced movement styles.

Prerequisite/Restriction: THEA 1430
Semester(s) Traditionally Offered: Spring

THEA 2440 - Introduction to Dance for the Theatre
2 credits

Fundamental principles of dance technique. Through technical and improvisational based explorations, you will experience a variety of spatial, rhythmical and physical possibilities that will develop your dance technique for the theatre.

Semester(s) Traditionally Offered: Fall

THEA 2470 - Movement: Stage Combat
3 credits

Techniques in stage combat.

Prerequisite/Restriction: THEA 1430.
Semester(s) Traditionally Offered: Fall, Spring

THEA 2480 - Intermediate Voice and Speech for Theatre
3 credits

Training in vocal technique, incorporating breath support, vocal range, power, and projection. Training in speech and articulation. Work in various vocal theories (Berry, Linklater, Hart). Instruction in the International Phonetic Alphabet.

Prerequisite/Restriction: THEA 1113
Semester(s) Traditionally Offered: Spring

THEA 2490 - Intermediate Acting: Shakespeare
3 credits
Exploring language and techniques of playing Shakespeare through scene study and monologues.

Prerequisite/Restriction: THEA 1033.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2510 - Scene Painting
3 credits

Instruction in scene painting techniques. For theatrical technicians and designers. Demonstration and lab work included.

Prerequisite/Restriction: THEA 1513.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2540 - Lighting Design
3 credits

Introduction to basic elements of lighting design. Demonstration of techniques used to create and execute a lighting design. Provides basic understanding of light energy, angle, color, and technology available for designing with this medium.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2550 - Stage Management
3 credits

Provides problem-solving environment for students to acquire knowledge and skills necessary for becoming a competent stage manager. Discussion of organization, delegation, scheduling, and personnel management.

Prerequisite/Restriction: Permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2555 - Production Practicum
1 credit

Specialized crew work in ongoing Theatre Arts Department productions. Assignments made upon meeting with technical director.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 2556 - Production Run Crew
1 credit

Specialized crew work for Theatre Arts Department productions. Assignments made upon meeting with technical director.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 2560 - Theatre and Studio Sound
3 credits

Sound recording, reinforcement, and control operation skills for theatrical production.

Semester(s) Traditionally Offered: Fall, Spring

THEA 2666 - Performance Practicum I
1 credit

Performance work in ongoing Theatre Arts Department productions, upon casting by the director.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 2667 - Performance Practicum II
1 credit

Performance work in ongoing Theatre Arts Department productions, upon casting by the director.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 2670 - Costume History
3 credits

Historical survey of the evolution of costumes from the Egyptian period to the present, emphasizing costume reproduction for the stage. Will examine the effect of period costume on movement and manners.

Campus: USU Eastern only
Semester(s) Traditionally Offered: Spring
THEA 2910 - Private Instruction in Theatre Arts
1-3 credits
Practical theatre experience through production. Student training is gained through hands-on practice and performance of actual production.
Prerequisite/Restriction: Permission of instructor. Student must have a participatory assignment in a theatre performance activity.
Repeatable for credit not to exceed 8 hours.
Campus: USU Eastern only
Semester(s) Traditionally Offered: Fall, Spring

THEA 2977 - Cooperative Education
1-3 credits
Provides supervised on-the-job training in theatre. Students meet with the instructor/coordinator periodically during the course to determine and evaluate learning objectives, hours to be worked, and credit.
Prerequisite/Restriction: Permission of instructor.
Campus: USU Eastern only

THEA 2988 - Special Problems
1-3 credits
Individual work approved by instructor. Time and credit to be arranged.
Campus: USU Eastern only

THEA 3050 - Period Styles/Historic Interiors (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Intensive instruction in architecture, furniture, and interior design of major Western European periods from Egyptian to the present. Taught through lectures, slide presentations, and student-compiled source book with examples of major styles.
Semester(s) Traditionally Offered: Fall, Spring

THEA 3230 - Theatre History I (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits
History of global performance traditions and dramatic literature from theatrical origins through the nineteenth century.
Prerequisite/Restriction: THEA 1713 and fulfillment of Communications Literacy CL2 requirement through coursework or exam (ENGL 2010); sophomore-level or above; or instructor permission
Semester(s) Traditionally Offered: Fall

THEA 3240 - Theatre History II (CI)
CI Communications Intensive
3 credits
History of global performance traditions and dramatic literature from the turn of the twentieth century to the present.
Prerequisite/Restriction: THEA 3230; or THEA 1713 and fulfillment of the CL2 requirement through coursework or exam (ENGL 2010); or instructor permission; sophomore-level or above.
Semester(s) Traditionally Offered: Spring

THEA 3300 - Clinical Experience in Teaching I
1 credit
Clinical apprenticeship consisting of teaching theatre in local schools. Includes observation, tutorial work, small group discussions, whole class instruction, and lesson/unit planning.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

THEA 3320 - Movement Exploration for Elementary Education Majors
3 credits
Designed to understand the elements of dance, the creative process and how to combine them with arts integration activities. Through classroom explorations and presentations, students will demonstrate the ability to integrate curriculum areas through movement.
Semester(s) Traditionally Offered: Fall

THEA 3410 - Dance for Theatre: Tap
2 credit
Builds on tap skills learned in the introductory course, emphasizing mastery of single and double tap sounds and ensuring a solid foundation for elementary and intermediate tap steps commonly used in theatre productions.

Prerequisite/Restriction: THEA 2440.

Semester(s) Traditionally Offered: Fall, Spring

THEA 3420 - Dance for Theatre: Modern  
2 credit

Builds on Modern Dance skills learned in the introductory course, incorporating contemporary, contact and improvisation techniques.

Prerequisite/Restriction: THEA 2440

Semester(s) Traditionally Offered: Spring

THEA 3430 - Period Dance Styles  
3 credits

Dances learned from different periods then "rechoreographed" for stage practice.

Prerequisite/Restriction: THEA 1430.

Semester(s) Traditionally Offered: Fall, Spring

THEA 3440 - Dance for Theatre: Ballet  
2 credit

Designed for an in-depth experience in ballet, focusing on technique and learning ballet choreography. Builds on ballet skills learned in the introductory course.

Prerequisite/Restriction: THEA 2440.

Semester(s) Traditionally Offered: Fall, Spring

THEA 3450 - Dialects (DHA)  
DHA Depth Humanities and Creative Arts  
3 credits

Review of International Phonetic Alphabet. Explores range of regional American and British dialects, as well as specific foreign language dialects.

Prerequisite/Restriction: THEA 1113 and THEA 2480.

THEA 3510 - Scene Design  
3 credits

Preparation for designing sets used in theatre. Development of skills in drafting, rendering, model-making, research, and portfolio development.

Prerequisite/Restriction: THEA 1513.

Semester(s) Traditionally Offered: Fall, Spring

THEA 3520 - Stage Costume Design  
3 credits

Theory and practice in design and selection of costumes for nonrealistic, historical, and modern plays. Study of relationship of costume to character and production.

Prerequisite/Restriction: THEA 1513 and THEA 3570; or permission of instructor.

Semester(s) Traditionally Offered: Fall, Spring

THEA 3570 - Historic Clothing (DHA)  
DHA Depth Humanities and Creative Arts  
3 credits

Historic survey of development of clothing from ancient Egyptians to the present day.

Semester(s) Traditionally Offered: Fall, Summer

THEA 4030 - Storytelling in Education (DHA)  
DHA Depth Humanities and Creative Arts  
3 credits

Theory and practice of storytelling in educational settings. Devising and performance of stories with and for young people, storytelling through puppetry, integration of storytelling across the curriculum. For graduate credit students must complete additional teaching, research, and/or service.

Prerequisite/Restriction: Sophomore-level or above

Cross-listed as: THEA 6030

Semester(s) Traditionally Offered: Fall
THEA 4250 - Playwriting
3 credits
Study of dramatic theory and sample plays, combined with practice in writing short plays. Minimum of three plays required.
Prerequisite/Restriction: THEA 1713.
Cross-listed as: ENGL 4250.
Semester(s) Traditionally Offered: Spring

THEA 4300 - Clinical Experience in Teaching II
1 credit
Clinical apprenticeship of teaching theatre in local schools, including observation, tutorial work, small group discussions, whole class instruction, and lesson/unit planning.
Prerequisite/Restriction: THEA 3300.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall

THEA 4330 - Methods of Teaching Drama, Pre K-8
3 credits
Theory and practice of teaching drama to young people grades PreK-8. Particular emphasis on storytelling, story drama, process drama, and contemporary trends in drama pedagogy. Graduate credit students must complete additional teaching, research and/or service.
Prerequisite/Restriction: Admission to major or minor in education, or instructor permission
Cross-listed as: THEA 6330
Semester(s) Traditionally Offered: Fall

THEA 4400 - Company Workshop
3 credits
Company workshop of theatrical productions emphasizing process and instruction. Supervised rehearsals, technical preparation, and public performances.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 4450 - Advanced Voice for Theatre
3 credits
Advanced vocal training includes units in microphone technique, radio drama, classical Greek theatre, and vocal improvisation.
Prerequisite/Restriction: THEA 1113 and THEA 2480.
Semester(s) Traditionally Offered: Spring

THEA 4480 - Theatre Leadership and Management
3 credits
Explores legal and financial choices, market research and marketing plans, physical plant and season operations, consideration of union and management relationships, and various planning and budget control procedures. For 6480 credit, graduate students must participate in microteaching sessions with additional practicum, writing, or problem solving assignments.
Cross-listed as: THEA 6480.
Semester(s) Traditionally Offered: Spring

THEA 4510 - Advanced Scene Design
3 credits
Preparation for graduate school or a career in design. Advanced instruction in drafting, rendering, model-making, technical skills, research, design principles, and portfolio development. For 6510 credit, graduate students must participate in microteaching sessions with additional rendering assignments.
Prerequisite/Restriction: THEA 1513 and THEA 3510.
Cross-listed as: THEA 6510.
Semester(s) Traditionally Offered: Fall, Spring

THEA 4520 - Advanced Costume Design
3 credits
Advanced theory and practice in the design and selection of costumes for nonrealistic, historical, and modern plays. For 6520 credit, graduate students must participate in microteaching sessions with additional

THEA 4530 - Methods of Teaching Drama, Pre K-8
3 credits
Theory and practice of teaching drama to young people grades PreK-8. Particular emphasis on storytelling, story drama, process drama, and contemporary trends in drama pedagogy. Graduate credit students must complete additional teaching, research and/or service.
Prerequisite/Restriction: Admission to major or minor in education, or instructor permission
Cross-listed as: THEA 6330
Semester(s) Traditionally Offered: Fall

THEA 4550 - Theatre Leadership and Management
3 credits
Explores legal and financial choices, market research and marketing plans, physical plant and season operations, consideration of union and management relationships, and various planning and budget control procedures. For 6550 credit, graduate students must participate in microteaching sessions with additional practicum, writing, or problem solving assignments.
Cross-listed as: THEA 6550.
Semester(s) Traditionally Offered: Spring

THEA 4570 - Advanced Scene Design
3 credits
Preparation for graduate school or a career in design. Advanced instruction in drafting, rendering, model-making, technical skills, research, design principles, and portfolio development. For 6570 credit, graduate students must participate in microteaching sessions with additional rendering assignments.
Prerequisite/Restriction: THEA 1513 and THEA 3510.
Cross-listed as: THEA 6570.
Semester(s) Traditionally Offered: Fall, Spring

THEA 4580 - Advanced Costume Design
3 credits
Advanced theory and practice in the design and selection of costumes for nonrealistic, historical, and modern plays. For 6580 credit, graduate students must participate in microteaching sessions with additional

THEA 4590 - Theatre Leadership and Management
3 credits
Explores legal and financial choices, market research and marketing plans, physical plant and season operations, consideration of union and management relationships, and various planning and budget control procedures. For 6590 credit, graduate students must participate in microteaching sessions with additional practicum, writing, or problem solving assignments.
Cross-listed as: THEA 6590.
Semester(s) Traditionally Offered: Spring

THEA 4600 - Company Workshop
3 credits
Company workshop of theatrical productions emphasizing process and instruction. Supervised rehearsals, technical preparation, and public performances.
Prerequisite/Restriction: Permission of instructor.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
THEA 4540 - Advanced Lighting Design
3 credits
Advanced training in elements of lighting design. Exploration of advanced techniques used to create and execute a lighting design. For 6540 credit, graduate students must participate in microteaching sessions with additional research or practicum assignments.
Prerequisite/Restriction: THEA 2540.
Cross-listed as: THEA 6540.
Semester(s) Traditionally Offered: Spring
THEA 4740 - Advanced Performance Practicum I
1-2 credits
Advanced performance work in ongoing Theatre Arts Department productions, upon casting by the director. Director will assign credits.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
THEA 4750 - Advanced Production Practicum
1-3 credits
Specialized practical experience in theatre production, including opportunities for advanced work in directing, design, scene and costume construction, stage management, props, sound, and lighting, under the supervision of Theatre Arts Department faculty members.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer
THEA 5240 - Contemporary Theatre (DHA/CI)
DHA/CI Depth Humanities and Creative Arts and Communications Intensive
3 credits
History and theory of a theatre movement since the 1980s, primarily in the English-speaking world, leading to a study of the theatrical world and its practices today. For 6240 credit, graduate students must participate in microteaching sessions with additional reading or writing assignments.
Prerequisite/Restriction: THEA 3230.
Cross-listed as: THEA 6240.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring
THEA 5270 - Performance Theory and Criticism (DHA)
DHA Depth Humanities and Creative Arts
3 credits
Topics in dramatic theory, including traditional
Aristotelian analysis, comedy, tragedy, and modern and postmodern performance theories. For 6270 credit, graduate students must participate in microteaching sessions with additional research or writing assignments.

Cross-listed as: THEA 6270.

Repeatable for credit.
Semester(s) Traditionally Offered: Spring

THEA 5290 - Special Topics in Theatre History and Literature
3 credits

Specialized topics in theatre history, performance, and dramatic literature. Sample topics include Classical Theatre of Greece and Rome, Golden Age Spanish Theatre, Elizabethan Theatre, Musical Theatre, Asian Theatre, and others. For 6290 credit, graduate students must participate in microteaching sessions with additional research or writing assignments.

Prerequisite/Restriction: THEA 3230.

Cross-listed as: THEA 6290.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 5310 - Theatre Mentorship and Service
1-3 credits

Clinical mentorship of teaching skills, including observation, instruction, and evaluation in specific areas of expertise. Projects may include developing and using drama and theatre practices for service in classroom or community settings.

Prerequisite/Restriction: Permission of instructor.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 5320 - Theatre for Young Audiences
3 credits

Theory and practice of theatre with and/or for children and adolescents. Review of literature and contemporary practices in both professional and educational settings.

Prerequisite/Restriction: THEA 1713, sophomore-level or above, or instructor permission

Semester(s) Traditionally Offered: Fall

THEA 5340 - Technology and Design for Theatre Educators
3 credits

Specialized practical instruction in technical methods and theatre production for education majors. Required for students in the Theatre Education Emphasis.

Prerequisite/Restriction: THEA 1513 and admission to education major or minor or instructor permission

Semester(s) Traditionally Offered: Spring

THEA 5360 - Methods of Teaching Theatre, Grades 9-12
3 credits

Theory and practice of teaching theatre to students in grades 9-12. Focus on designing holistic, integrated theatre curricula.

Prerequisite/Restriction: Admission to Secondary Teaching Education Program (STEP)-School of Teacher Education and Leadership, junior-level or higher or instructor permission

Cross-listed as: THEA 6360

Semester(s) Traditionally Offered: Spring

THEA 5370 - Drama Across the Curriculum, Grades K-12
3 credits

Theory and practice of drama integration across the curriculum. Use of drama pedagogy strategies to increase student learning in language arts, history, social studies, science, mathematics and the arts.

Prerequisite/Restriction: Admission to major or minor in education; junior-level or higher

Semester(s) Traditionally Offered: Spring

THEA 5380 - Applied Theatre
3 credits

Theory and practice of applied theatre, including community-embedded arts, educational drama, service-learning in the performing arts, and theater for social change.
Prerequisite/Restriction: Junior-level or above and instructor permission

Semester(s) Traditionally Offered: Fall

THEA 5390 - Student Teaching Seminar
2 credits

Focuses on problems arising during student teaching. Includes plans, procedures, adaptive classroom strategies, and evaluation.

Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

THEA 5400 - Advanced Acting: Period Styles I
3 credits

Acting techniques covering a variety of historical and physical styles, including a rotation of Greek, Restoration, and Turn of the Twentieth Century.

Prerequisite/Restriction: THEA 1033; and THEA 2033 or THEA 2490.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 5410 - Advanced Directing
3 credits

Provides instruction and practice in advanced techniques of script analysis, research outside the discipline, review of literature, awareness of thinking styles and values, and preparation for studio directing assignments.

Prerequisite/Restriction: THEA 2410 and permission of instructor.

Cross-listed as: THEA 6410.

Semester(s) Traditionally Offered: Fall, Spring

THEA 5420 - Advanced Acting: Period Styles II
3 credits

Acting techniques covering a variety of historical and physical styles, based upon production needs of current season.

Prerequisite/Restriction: THEA 1033; and THEA 2033 or THEA 2490.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 5430 - Advanced Acting: Acting for the Camera
3 credits

Acting for the camera.

Prerequisite/Restriction: THEA 1033.

Semester(s) Traditionally Offered: Fall, Spring

THEA 5440 - Advanced Acting: Musical Theatre and Audition Techniques
3 credits

Introduction to techniques of musical theatre performance, and audition skills.

Prerequisite/Restriction: THEA 1033; and THEA 2033 or THEA 2490

Semester(s) Traditionally Offered: Fall, Spring

THEA 5450 - Advanced Acting: Modern Methods
3 credits

Twentieth Century acting techniques, methodologies, and theories.

Prerequisite/Restriction: THEA 1033; and THEA 2033 or THEA 2490

Semester(s) Traditionally Offered: Fall, Spring

THEA 5510 - Computer-Aided Design for Theatre
3 credits

Computer-aided design applications for theatre. Drafting and rendering on computer for set, light, and costume design.

Prerequisite/Restriction: THEA 2540, THEA 3510, THEA 3520.

Semester(s) Traditionally Offered: Fall

THEA 5590 - Design Studies for Theatre
2 credits
Actualization of a design from conception through completion with faculty supervision. Creation of all drafting, renderings, and/or models for portfolio development.

Cross-listed as: THEA 6590.

THEA 5740 - Repertory Theatre Performance
2-8 credits

Rehearsal, crew, and staff assignments. Performance of four plays in repertory. Company members selected through audition, based on ability and commitment to theatre. For 6740 credit, graduate students fulfill mentoring assignments and/or additional assignments in community service.

Prerequisite/Restriction: Permission of Theatre Arts Department staff.

Cross-listed as: THEA 6740.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring

THEA 5750 - Repertory Theatre Production
2-8 credits

Rehearsal, crew, and staff assignments. Performance of four plays in repertory. For 6750 credit, graduate students work with undergraduate students in mentoring situations.

Cross-listed as: THEA 6750.

Repeatable for credit.
Semester(s) Traditionally Offered: Summer

THEA 5900 - Special Projects I
1-4 credits

Directed individual research studies or creative projects in theatre.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 5910 - Senior Project
2 credits

Culminating project and/or recital in student's specified program.

Semester(s) Traditionally Offered: Fall, Spring

THEA 5920 - Special Projects II
1-4 credits

Directed individual research, advanced design, or creative projects in theatre.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 5930 - Special Projects III
1-4 credits

Directed individual advanced design or creative projects in theatre.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 5940 - Fieldwork in Theatre Arts
1-13 credits

Fieldwork, professional internship, or other arranged study in theatre arts.

Prerequisite/Restriction: Instructor permission

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

THEA 5950 - Rendering and Painting for the Theatre
3 credits

Hands-on experience for theatrical technicians and designers using a variety of drawing techniques commonly used in theatrical design. Primary method of instruction is demonstration and experience through lab work.

Semester(s) Traditionally Offered: Fall, Spring

THEA 6010 - Introduction to Graduate Study in Theatre
3 credits

Bibliography, research methods, and writing.

Semester(s) Traditionally Offered: Fall
THEA 6030 - Storytelling in Education
3 credits

Theory and practice of storytelling in educational settings. Devising and performance of stories with and for young people, storytelling through puppetry, integration of storytelling across the curriculum. For graduate credit students must complete additional teaching, research, and/or service.

Prerequisite/Restriction: Sophomore-level or above

Cross-listed as: THEA 4030

Semester(s) Traditionally Offered: Fall

THEA 6180 - Theatre Production Portfolio
3 credits

Prepares graduate students for the workplace using portfolio presentation techniques, job applications, resumes, interview techniques, and the creation of a design portfolio.

Semester(s) Traditionally Offered: Spring

THEA 6240 - Contemporary Theatre
3 credits

History and theory of a theatre movement since the 1980s, primarily in the English-speaking world, leading to a study of the theatrical world and its practices today. For 6240 credit, graduate students must participate in microteaching sessions with additional reading or writing assignments.

Prerequisite/Restriction: THEA 3230.

Cross-listed as: THEA 5240.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

THEA 6270 - Performance Theory and Criticism
3 credits

Topics in dramatic theory, including traditional Aristotelian analysis, comedy, tragedy, and modern performance theory. Includes preparation for review and adjudication of performance. For 6270 credit, graduate students must participate in microteaching sessions with additional research or writing assignments.

Cross-listed as: THEA 5270.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

THEA 6290 - Special Topics in Theatre History and Literature
3 credits

Specialized topics in theatre history, performance, and dramatic literature. Sample topics include Classical Theatre of Greece and Rome, Golden Age Spanish Theatre, Elizabethan Theatre, Musical Theatre, Asian Theatre, and others. For 6290 credit, graduate students must participate in microteaching sessions with additional research or writing assignments.

Prerequisite/Restriction: THEA 3230.

Cross-listed as: THEA 5290.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring

THEA 6330 - Methods of Teaching Drama, Pre K-8
3 credits

Theory and practice of teaching drama to young people grades PreK-8. Particular emphasis on storytelling, story drama, process drama, and contemporary trends in drama pedagogy. Graduate credit students must complete additional teaching, research and/or service.

Prerequisite/Restriction: Admission to major or minor in education, or instructor permission

Cross-listed as: THEA 4330
Semester(s) Traditionally Offered: Fall
THEA 6360 - Methods of Teaching Theatre, Grades 9-12
3 credits

Theory and practice of teaching theatre to students in grades 9-12. Focus on designing holistic, integrated theatre curricula.

Prerequisite/Restriction: Admission to Secondary Teaching Education Program (STEP)-School of Teacher Education and Leadership, junior-level or higher, or instructor permission

Cross-listed as: THEA 5360

Semester(s) Traditionally Offered: Spring
THEA 6410 - Advanced Directing
3 credits

Provides instruction and practice in advanced techniques of script analysis, research outside the discipline, review of literature, awareness of thinking styles and values, and preparation for studio directing assignments.

Prerequisite/Restriction: THEA 2410 and permission of instructor.

Cross-listed as: THEA 5410.

Semester(s) Traditionally Offered: Fall, Spring
THEA 6480 - Theatre Leadership and Management
3 credits

Explores legal and financial choices, market research and marketing plans, physical plant and season operations, consideration of union and management relationships, and various planning and budget control procedures. For 6480 credit, graduate students must participate in microteaching sessions with additional practicum, writing, or problem solving assignments.

Cross-listed as: THEA 4480.

Semester(s) Traditionally Offered: Spring
THEA 6510 - Advanced Scene Design
3 credits

Preparation for graduate school or a career in design. Advanced instruction in drafting, rendering, model-making, technical skills, research, design principles, and portfolio development. For 6510 credit, graduate students must participate in microteaching sessions with additional rendering assignments.

Prerequisite/Restriction: THEA 1513 and THEA 3510.

Cross-listed as: THEA 4510.

Semester(s) Traditionally Offered: Spring
THEA 6520 - Advanced Costume Design
3 credits

Advanced theory and practice in the design and selection of costumes for nonrealistic, historical, and modern plays. For 6520 credit, graduate students must participate in microteaching sessions with additional research or practicum assignments.

Prerequisite/Restriction: THEA 3520.

Cross-listed as: THEA 4520.

Semester(s) Traditionally Offered: Fall, Spring
THEA 6540 - Advanced Lighting Design
3 credits

Advanced training in elements of lighting design. Exploration of advanced techniques used to create and execute a lighting design. For 6540 credit, graduate students must participate in microteaching sessions with additional research or practicum assignments.

Prerequisite/Restriction: THEA 2540.

Cross-listed as: THEA 4540.

Semester(s) Traditionally Offered: Spring
THEA 6590 - Design Studies for Theatre
2 credits

Actualization of a design from conception through completion with faculty supervision. Creation of all drafting, renderings, and/or models for portfolio development.

Cross-listed as: THEA 5590.
THEA 6740 - Repertory Theatre Performance
2-8 credits

Rehearsal, crew, and staff assignments. Performance of four plays in repertory. Company members selected through audition, based on ability and commitment to theatre. For 6740 credit, graduate students fulfill mentoring assignments and/or additional assignments in community service.

Prerequisite/Restriction: permission of Theatre Arts Department staff.

Cross-listed as: THEA 5740.

THEA 6750 - Repertory Theatre Production
2-8 credits

Rehearsal, crew, and staff assignments. Performance of four plays in repertory. For 6750 credit, graduate students work with undergraduate students in mentoring situations.

Cross-listed as: THEA 5750.

THEA 6790 - Seminar in Drama
1-4 credits

Flexible service topics course covering a range of topics according to individual student need and/or visiting instructors, independent study, etc.

THEA 6800 - Graduate Studies in Theatre
1-6 credits

Research and preparation for graduate practicum projects in theatre.

THEA 6900 - Research Studies
1-4 credits

Directed individual research studies or creative projects in theatre.

THEA 6920 - Graduate Projects in Theatre
2-3 credits

Studio practicum in support of projects in stage directing, design, and technical practice.

THEA 6970 - Thesis
1-4 credits

Repeatable for credit.

USU 1000 - Introduction to Computers and Information Literacy
1 credit

Semester(s) Traditionally Offered: Fall, Spring

USU 1010 - University Connections
1-3 credits

Provides an environment of challenge and support to help new students make a successful transition to USU. Class curriculum and activities provide an environment wherein students become familiar with the broad academic, social, and cultural opportunities offered by USU and the surrounding community. Note: USU 1010 cannot be counted toward the breadth requirements.
Semester(s) Traditionally Offered: Fall, Spring

USU 1100 - First-Year Seminar
3 credits

Characterized by investigation of a topic that is most likely a research, scholarly, or artistic specialty of the faculty member. Topic presented in pedagogically interesting ways. May include fieldwork or trips to enhance study of the topic. Note: USU 1100 cannot be counted toward the breadth requirements.

USU 1300 - U.S. Institutions (BAI)
BAI Breadth American Institutions
3 credits

Provides basic understanding of the history, principles, form of government, and economic system of the United States. Emphasis on ideas and critical thinking, rather than dates, names, and places.

Semester(s) Traditionally Offered: Fall, Spring, Summer

USU 1320 - Civilization: Humanities (BHU)
BHU Breadth Humanities
3 credits

Provides basic understanding of a broad range of themes, which cut across human history and continue to be important in contemporary society.

Semester(s) Traditionally Offered: Fall, Spring, Summer

USU 1330 - Civilization: Creative Arts (BCA)
BCA Breadth Creative Arts
3 credits

Students will explore questions such as: What is Art? How is it judged? How does artistic expression vary across cultures? Course will cover several forms of art, and students will attend concerts, visit galleries, and attend theatrical performances.

Semester(s) Traditionally Offered: Fall, Spring, Summer

USU 1340 - Social Systems and Issues (BSS)
BSS Breadth Social Sciences
3 credits

Examines debates in the social sciences about contexts which shape human experience. Compares experiences between life stages, individuals, groups, societies, and/or historical periods. Contrasts different social science disciplines.

Semester(s) Traditionally Offered: Fall, Spring, Summer

USU 1350 - Integrated Life Science (BLS)
BLS Breadth Life Sciences
3 credits

Interdisciplinary course focusing on basic concepts of life science. Demonstrates role of modeling, prediction, and observation in the process of scientific discovery, which occurs within an historical and social context.

Semester(s) Traditionally Offered: Fall, Spring, Summer

USU 1360 - Integrated Physical Science (BPS)
BPS Breadth Physical Sciences
3 credits

Interdisciplinary course focusing on basic concepts of physical science, including structure of matter and magnitude and character of the forces of nature. Demonstrates role of modeling, prediction, and observation in the process of scientific discovery, which occurs within an historical and social context.

USU 3330 - Art Symposium (DHA)
DHA Depth Humanities and Creative Arts
1-2 credits

Students attend a number of cultural events offered at USU and in the community, as well as write critiques of the events. Note: USU 3330 may be applied to the depth requirements, but not to the breadth requirements. Two credits of USU 3330 are needed to fulfill the DHA requirement.

Prerequisite/Restriction: Completion of at least 30 credits.

Repeatable for credit.

USU 4900 - Undergraduate Research
1-3 credits

Research experience pursued with a faculty mentor. Prior to registration, student must make arrangements with a faculty mentor within his or her department. Note: USU 4900 cannot be counted toward fulfillment of University Studies requirements.
USU 6900 - Responsible Conduct of Research
3 credits
Provides an underpinning of ethical conduct for students entering into the research enterprise while at USU. Designed for upper-level undergraduates and graduate students, with each weekly session being split between lecture and discussion activities. Subjects covered include those required of all trainees being supported on Public Health Service grants. Note: USU 6900 cannot be counted toward fulfillment of University Studies requirements.

USU 7777 - Completion Course for Final Thesis, Dissertation, Plan B Paper or Project Changes
3 credits
This is a non-repeatable, non-graded (SC only) course. Credits cannot be used for degree requirements. There will be no tuition or fees charged. It will not appear on a student's program of study. This course will not have any implication for the order of dissertation/thesis review by the School of Graduate Studies.

Prerequisite/Restriction: Successful Record of Examination Form turned into the School of Graduate Studies. Special approval for registration is required.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WATs Sciences

WATS 1020 - Watershed Sciences Professional Orientation
1 credit
Introduction and orientation to natural resource/environmental disciplines and related professional careers for Watershed Sciences majors. Discussion of education, curricula, faculty, professional societies, and employment opportunities.

Semester(s) Traditionally Offered: Fall

WATS 1200 - Biodiversity and Sustainability (BLS)
BLS Breadth Life Sciences

3 credits
Provides students with an understanding of the biodiversity dilemma and the impact our species is having on natural ecosystems. Today, species extinctions occur at an alarming rate. These losses of biodiversity occur because of changes humans have made to the habitats and biogeochemical cycles of our planet. The last third of the course focuses on ways to mitigate these impacts.

Semester(s) Traditionally Offered: Spring

WATS 2250 - Introductory Internship/Co-op
1-3 credits
Introductory-level educational experience in internship/cooperative education position approved by department.

Prerequisite/Restriction: Permission of department.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 3000 - Oceanography (DSC)
DSC Depth Life and Physical Sciences
3 credits
Examines fundamental interrelationships between physical environment of the oceans and the life forms they support. Suitable for nonbiologists.

Semester(s) Traditionally Offered: Spring

WATS 3100 - Fish Diversity and Conservation (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Communications Intensive
3 credits
Systematics, physiology, ecology, evolution, and conservation of major groups of marine and freshwater fishes. Stresses functional morphology, physiological ecology, and community interactions explaining fish abundance and distribution.

Prerequisite/Restriction: BIOL 1010 or BIOL 1610 or BIOL 1620.

Semester(s) Traditionally Offered: Fall
WATS 3110 - Fish Diversity Laboratory
1 credit
Focuses on field collection, identification, and habitat relationships of freshwater fishes in North America.
Prerequisite/Restriction: WATS 3100 (may be taken concurrently).
Semester(s) Traditionally Offered: Fall

WATS 3600 - Geomorphology
4 credits
Geomorphic processes, origin of landforms and surficial deposits. Emphasizes fluvial and hillslope landscape elements, and surficial geologic mapping. Three one-hour lectures and one three-hour lab per week.
Prerequisite/Restriction: GEO 1010 or GEO 1110 or GEOG 1000.
Cross-listed as: GEO 3600.
Semester(s) Traditionally Offered: Fall

WATS 3700 - Fundamentals of Watershed Science (CI)
CI Communications Intensive
3 credits
Study of water movement, hillslope processes, and nutrient movement in catchments, and its relevance to the properties, land use, and management of watersheds as natural resource units.
Semester(s) Traditionally Offered: Spring

WATS 3820 - Climate Change (DSC/QI)
DSC/QI Depth Life and Physical Sciences and Quantitative Intensive
3 credits
Emphasizes physical basis of climate (climate dynamics), as well as the mechanisms and processes for its fluctuations on sub-seasonal to interannual time scales (climate variations) and on regional to hemispheric/global time scales.
Prerequisite/Restriction: GEO 1110 or GEOG 1000.
Cross-listed as: PSC 3820.
Semester(s) Traditionally Offered: Spring

WATS 4250 - Advanced Internship/Co-op
1-9 credits
Internship/cooperative education work experience; increased complexity to help student gain a more professional level of experience.
Prerequisite/Restriction: Permission of department.
Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 4310 - Wetland Ecology and Management
3 credits
Explores the physical, chemical, and biological structure of wetlands. Focuses on the major types of wetlands found in North America, as well as their ecology and management; U.S. wetland policy and mitigation; and regional, national, and global impacts on restoration of wetlands.
Prerequisite/Restriction: WATS 3700.
Cross-listed as: WATS 6310.
Semester(s) Traditionally Offered: Spring

WATS 4490 - Small Watershed Hydrology
4 credits
Detailed exploration of concepts of hydrologic processes in small, wildland watersheds. Concentrates on recent research findings concerning key hydrological processes. Particular attention paid to study of partitioning of water in the hydrologic cycle, sources for runoff generation, snow and snowmelt, and erosion. Features process modeling and parameter estimation techniques as related to wildland systems.
Prerequisite/Restriction: MATH 1100 or MATH 1210; and WATS 3700.
Cross-listed as: WATS 5490.
Semester(s) Traditionally Offered: Spring

WATS 4500 - Limnology: Ecology of Inland Waters
3 credits
Ecosystem analysis of physical, chemical, and biological interactions in lakes and streams. Application of these concepts for managing aquatic system. Graduate students write an additional research paper and present a lecture.

Prerequisite/Restriction: CHEM 1210.

Cross-listed as: WATS 6500.

Semester(s) Traditionally Offered: Spring

WATS 4510 - Aquatic Ecology Practicum
3 credits

Integration of limnological theory and methods of conducting field and laboratory analyses of physical, chemical, and biological parameters. Students will design and conduct their own research project within the framework of a general water quality or fishery issue addressed by the class. Development of analytical, statistical, and writing skills. Field trips required.

Prerequisite/Restriction: WATS 4500; WATS 3000 (may be taken concurrently).

Semester(s) Traditionally Offered: Fall

WATS 4530 - Water Quality and Pollution
3 credits

Reviews biological and social problems caused by point and nonpoint source water pollution; toxicology; abiotic and biotic water quality parameters; and use criteria of the Clean Water Act. Graduate-level class will require additional readings of the peer-reviewed literature and an additional class meeting to have in-depth discussions of those readings. Each graduate student will be responsible for making a presentation at the beginning of class, and leading the discussion.

Cross-listed as: WATS 6530.

Semester(s) Traditionally Offered: Fall

WATS 4650 - Principles in Fishery Management
3 credits

Emphasizes management of fish populations within context of community and ecosystem dynamics. Stresses use of simulation models to assess effects of growth, recruitment, and mortality on age-structured populations.

Cross-listed as: WATS 6650.

Semester(s) Traditionally Offered: Spring

WATS 4750 - Fundamentals of Remote Sensing Science
3 credits

Develops the scientific principles behind remote sensing. Examines the basic physics of electromagnetic radiation and the interactions of radiation with the surface and the atmosphere.

Prerequisite/Restriction: MATH 1060, MATH 1210; PHYS 2210.

Cross-listed as: WATS 6740.

Semester(s) Traditionally Offered: Fall

WATS 4930 - Geographic Information Systems
4 credits

Builds proficiency in application of GIS to solve spatial problems. Topics include: georeferencing, vector and raster analyses, DEM construction, morphometric analysis, suitability modeling, geoprocessing, and error assessment. One third of semester spent implementing student GIS projects.

Prerequisite/Restriction: GEOG 1800 Recommended prerequisite for WATS 6920: GIS introduction or coursework.

Cross-listed as: WATS 6920.

Semester(s) Traditionally Offered: Spring

WATS 4950 - Special Topics
1-3 credits

Individual study and research upon selected watershed sciences problems.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 4960 - Directed Readings
1-3 credits

Provides one-on-one interaction between student and
WATS 4970 - Undergraduate Research
1-3 credits

Individual or team research.

Prerequisite/Restriction: Permission of department
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 4980 - Watershed Sciences Departmental Seminar
1 credit

Exposes students to new developments in research and management in the fields of watershed sciences. Features participation by students, faculty, and guest lecturers. Graduate students should register for only one semester each year, but attend all year. Undergraduate students are only required to register once. Graduate students will participate in an additional reading and discussion group for the seminars.

Cross-listed as: WATS 6800/WATS 7800.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

WATS 5003 - Remote Sensing of Land Surfaces
4 credits

Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology.

Prerequisite/Restriction: MATH 1100 or MATH 1210; and PHYS 2110 or PHYS 2210.
Cross-listed as: WATS 6003 and CEE 5003/CEE 6003 and PSC 5003/PSC 6003.
Semester(s) Traditionally Offered: Spring

WATS 5150 - Fluvial Geomorphology
3 credits

Focuses on physical processes in streams that control their shape, plan form, slope, bed material, and distribution of channel bars. Emphasizes field analysis of these topics, and application of geomorphology to aquatic ecology and environmental restoration.

Cross-listed as: WATS 6150 and GEO 5150/GEO 6150.

WATS 5170 - Fluvial Geomorphology Lab
2 credits

Field analysis focuses on physical processes in streams which control their shape, plan form, slope, bed material, and distribution of channel bars. Application of geomorphology to aquatic ecology and environmental restoration.

Cross-listed as: WATS 6170 and GEO 5170/GEO 6170.

WATS 5200 - Fish Habitats
2 credits

Examines biological and social factors influencing aquatic ecosystems and fish habitats within the context of forest management. Analyzes ecological relationships of fish habitats within forest ecosystem, and how these are influenced by forest management practices. Provides examples of forest habitat issues in major regions of North America, illustrating that both biological and social factors must be considered in developing management strategies and programs.

Semester(s) Traditionally Offered: Spring

WATS 5330 - Large River Management
3 credits

Focuses on constituencies participating in modern management of large river basins, including water developers, irrigators, municipalities, power consumers, recreationists, environmentalists, and scientists. Primary examples drawn from Colorado, Columbia, Rio Grande, and Missouri river basins.

Cross-listed as: WATS 6330.
Semester(s) Traditionally Offered: Spring

WATS 5490 - Small Watershed Hydrology
4 credits

Detailed exploration of concepts of hydrologic processes in small, wildland watersheds. Concentrates on recent research findings concerning examining key hydrological processes. Particular attention paid to study of partitioning of water in the hydrologic cycle, sources for runoff generation, snow and snowmelt, and erosion. Features process modeling and parameter estimation techniques as related to wildland systems. Additional oral and written assignments required for graduate students.

Prerequisite/Restriction: MATH 1100 or MATH 1210; and WATS 3700.

Cross-listed as: WATS 4490.

Semester(s) Traditionally Offered: Spring

WATS 5550 - Freshwater Invertebrates
3 credits

Ecology, collection, and systematics of freshwater aquatic invertebrates. Focuses on insects, but also covers crustaceans, molluscs, and annelids. Several weekend field trips and a collection are required.

Prerequisite/Restriction: One year of general biology or zoology, or permission of instructor.

Cross-listed as: BIOL 5550.

Semester(s) Traditionally Offered: Spring

WATS 5640 - Riparian Ecology and Management
3 credits

Explores structure and function of riparian ecosystems and management options for maintaining sustainable ecological function.

Prerequisite/Restriction: NR 2220/BIOL 2220, WATS 3700.

Cross-listed as: WATS 7640.

Semester(s) Traditionally Offered: Spring

WATS 5650 - Analysis of Fisheries Data with R
2 credits

Designed for individuals planning to work for agencies and for individuals who cannot afford expensive statistical programs, such as SAS. Advantages of using R include greater number of statistical options than are included in Excel (or other spreadsheet software programs), ability to produce presentation-quality figures, and availability as an open-source (free) software program.

Semester(s) Traditionally Offered: Spring

WATS 5660 - Watershed and Stream Restoration
2 credits

Overview of the current theory and practice of watersheds and streams. Emphasizes field visits with restoration projects and specialists.

Campus: Regional Campuses and Distance Education as a summer short course.

Semester(s) Traditionally Offered: Summer

WATS 5670 - Watersheds and Stream Restoration Practicum
2 credits

Capstone experience. Development of a restoration plan for a site, involving site planning and design.

Campus: Regional Campuses and Distance Education as a summer short course.

Semester(s) Traditionally Offered: Summer

WATS 5680 - Paleoclimatology
3 credits

Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: WATS 6680 and GEO 5680/GEO 6680 and PSC 5680/PSC 6680.
Semester(s) Traditionally Offered: Spring

WATS 5760 - Remote Sensing: Modeling and Analysis
3 credits
Advanced techniques in the analysis of the earth's surface using remotely-sensed imagery and data in a digital format. Projects employ and/or develop research models.
Cross-listed as: WATS 6760.

Semester(s) Traditionally Offered: Spring

WATS 5930 - Geographic Information Analysis
3 credits
Techniques of geographic information systems, data structures, data input and output, and data manipulation and analysis.
Prerequisite/Restriction: STAT 2000 or higher; WATS 4930 or ENVS 3500, or instructor's permission.
Cross-listed as: WATS 6930.

Semester(s) Traditionally Offered: Spring

WATS 6003 - Remote Sensing of Land Surfaces
4 credits
Basic principles of radiation and remote sensing. Techniques for ground-based measurements of reflected and emitted radiation, as well as ancillary data collection to support airborne and satellite remote sensing studies in agriculture, geography, and hydrology.
Prerequisite/Restriction: MATH 1100 or MATH 1210; and PHYS 2110 or PHYS 2210.
Cross-listed as: WATS 5003 and CEE 6003/CEE 5003 and PSC 6003/PSC 5003.

Semester(s) Traditionally Offered: Spring

WATS 6120 - Aquatic Production Biology
2 credits
Review of current literature on bacterial, algal, invertebrate, and fish production in lakes, rivers, and the sea. Particular emphasis is placed on whole-ecosystem productivity studies.
Cross-listed as: WATS 7120.

Semester(s) Traditionally Offered: Spring

WATS 6150 - Fluvial Geomorphology
3 credits
Focuses on physical processes in streams that control their shape, plan form, slope, bed material, and distribution of channel bars. Emphasizes field analysis of these topics, and application of geomorphology to aquatic ecology and environmental restoration.
Cross-listed as: WATS 5150 and GEO 6150/GEO 5150.

Semester(s) Traditionally Offered: Fall

WATS 6170 - Fluvial Geomorphology Lab
2 credits
Field analysis focuses on physical processes in streams which control their shape, plan form, slope, bed material, and distribution of channel bars. Application of geomorphology to aquatic ecology and environmental restoration.
Cross-listed as: WATS 5170 and GEO 6170/GEO 5170.

Semester(s) Traditionally Offered: Fall

WATS 6200 - Watershed Analysis
2 credits
Explores watershed analysis, which is a procedure used to characterize the human, aquatic, riparian, and upland features, conditions, processes, and interactions within a watershed. Watershed analysis includes ecosystem analysis at the watershed level, providing a systematic way to understand and organize system information for the purpose of understanding the consequences of management actions prior to implementation.

Semester(s) Traditionally Offered: Spring

WATS 6230 - Fish Ecology
2 credits
Reviews current literature on physiological, behavioral, population, and the community ecology of fishes. Particular emphasis placed on current literature relevant
to management of sport and endangered freshwater species.

Cross-listed as: WATS 7230.

Semester(s) Traditionally Offered: Spring

WATS 6240 - Graduate Internship/Co-op
1-9 credits

Graduate-level educational experience in internship/cooperative education position approved by department.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 6310 - Wetland Ecology and Management
3 credits

Explores the physical, chemical, and biological structure of wetlands. Focuses on the major types of wetlands found in North America, as well as their ecology and management; U.S. wetland policy and mitigation; and regional, national, and global impacts on restoration of wetlands.

Prerequisite/Restriction: WATS 3700.

Cross-listed as: WATS 4310.

Semester(s) Traditionally Offered: Spring

WATS 6330 - Large River Management
3 credits

Focuses on the scientific basis of river management and the constituencies participating in modern management of large rivers, including water developers, irrigators, municipalities, power consumers, recreationists, environmentalists, and scientists. Primary examples drawn from Colorado, Columbia, Rio Grande, and Missouri river basins.

Cross-listed as: WATS 5330.

Semester(s) Traditionally Offered: Spring

WATS 6500 - Limnology: Ecology of Inland Waters
3 credits

Ecosystem analysis of physical, chemical, and biological interactions in lakes and streams. Application of these concepts for managing aquatic system. Graduate students write an additional research paper and present a lecture.

Prerequisite/Restriction: CHEM 1210.

Cross-listed as: WATS 4500.

Semester(s) Traditionally Offered: Spring

WATS 6520 - Applied Hydraulics
3 credits

Basic fluid mechanics applied to wildland watershed systems and directed at nonengineering students. Explores nature of fluid state, fluid motion, and steady uniform and varied flow in open channels, under both subcritical and supercritical conditions. Surveys concepts of boundary layers, turbulence, convection, dispersal, and wave formation in unsteady flows. Emphasizes problem formulation and solving.

Prerequisite/Restriction: WATS 5490/WATS 4490; MATH 2280 (recommended).

Cross-listed as: CEE 6520.

Semester(s) Traditionally Offered: Spring

WATS 6530 - Water Quality and Pollution
3 credits

Reviews biological and social problems caused by point and nonpoint source water pollution; toxicology; abiotic and biotic water quality parameters; and use criteria of the Clean Water Act. Graduate-level class will require additional readings of the peer-reviewed literature and an additional class meeting to have in-depth discussions of those readings. Each graduate student will be responsible for making a presentation at the beginning of class, and leading the discussion.

Cross-listed as: WATS 4530.

Semester(s) Traditionally Offered: Fall

WATS 6550 - Assessment of Abundance and Related Parameters for Biological Populations
3 credits

Students learn to estimate population abundance and associated error bounds using mark-recapture, area-
swept, declining catch, line-transect, and other techniques. Emphasizes sampling design considerations to match objectives of an assessment to appropriate/feasible level of accuracy and precision.

Semester(s) Traditionally Offered: Spring
WATS 6650 - Principles in Fishery Management
3 credits

Emphasizes management of fish populations within context of community and ecosystem dynamics. Stresses use of simulation models to assess effects of growth, recruitment, and mortality on age-structured populations.

Cross-listed as: WATS 4650.

Semester(s) Traditionally Offered: Spring
WATS 6680 - Paleoclimatology
3 credits

Covers climate through the past four billion years of geologic time. Explores driving forces behind climate changes. Examines data and methods used in paleoclimate research. Includes discussion of literature and stresses local paleoclimate records. Three lectures per week, along with field trips.

Prerequisite/Restriction: GEO 3600/WATS 3600 or permission of instructor.

Cross-listed as: WATS 5680 and GEO 6680/GEO 5680 and PSC 6680/PSC 5680.

Semester(s) Traditionally Offered: Spring
WATS 6700 - Restoration Ecology
3 credits

Provides an understanding of ecological restoration, how to determine restoration goals, how to establish targets, and how to determine what are good measures of success. Teaches restoration implementataion, best practices for restoration monitoring, and how to develop and sustain community support for restoration.

Semester(s) Traditionally Offered: Spring
WATS 6740 - Fundamentals of Remote Sensing Science
3 credits

Develops the scientific principles behind remote sensing. Examines the basic physics of electromagnetic radiation and the interactions of radiation with the surface and the atmosphere.

Prerequisite/Restriction: MATH 1060, MATH 1210; PHYS 2210.

Cross-listed as: WATS 4750.

Semester(s) Traditionally Offered: Fall
WATS 6760 - Remote Sensing: Modeling and Analysis
3 credits

Advanced techniques in the analysis of the earth’s surface using remotely-sensed imagery and data in a digital format. Projects employ and/or develop research models.

Cross-listed as: WATS 5760.

Semester(s) Traditionally Offered: Spring
WATS 6800 - Watershed Sciences Departmental Seminar
1 credit

Exposes students to new developments in research and management in the fields of watershed sciences. Features participation by students, faculty, and guest lecturers. Graduate students should register for only one semester each year, but attend all year. Undergraduate students are only required to register once. Graduate students will participate in an additional reading and discussion group for the seminars.

Cross-listed as: WATS 4980/WATS 7800.

Repeatable for credit
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring
WATS 6820 - Stream Ecology
3 credits

Explores structure, function, and dynamics of flowing water ecosystems.

Cross-listed as: WATS 7820.

Semester(s) Traditionally Offered: Fall
WATS 6870 - Ecology Seminar
1 credit

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures. Students should register for fall semester, but attend through spring semester.

Cross-listed as: BIOL 6870 and ENVS 6870 and PSC 6870 and WILD 6870.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

WATS 6900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 6910 - Directed Study
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 6920 - Geographic Information Systems
4 credits

Builds proficiency in application of GIS to solve spatial problems. Topics include: georeferencing, vector and raster analyses, DEM construction, morphometric analysis, suitability modeling, geoprocessing, and error assessment. One third of semester spent implementing student GIS projects. Recommended prerequisite for WATS 6920: GIS introduction or coursework.

Cross-listed as: WATS 4930.

Semester(s) Traditionally Offered: Spring

WATS 6930 - Geographic Information Analysis
3 credits

Techniques of geographic information systems, data structures, data input and output, and data manipulation and analysis.

Prerequisite/Restriction: STAT 2000 or higher; WATS 4930 or ENVS 3500, or instructor's permission.

Cross-listed as: WATS 5930.

WATS 6940 - Snow Hydrology
3 credits

Focuses on snow science, including atmospheric formation, precipitation, distribution on the landscape, metamorphosis prior to melt, and snow pack melt dynamics. Also covers related issues, such as snow melt modeling, remote sensing, water supply, and biogeochemical cycling.

Prerequisite/Restriction: WATS 3700 or CEE 3430, or permission of instructor.

Cross-listed as: CEE 6940.

WATS 6960 - Graduate General Ecology
4 credits

General concepts, history, and issues in all major areas of the science of ecology including: environmental biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic environments.

Cross-listed as: BIOL 6960 and ENVS 6960 and PSC 6960 and WILD 6960.

Semester(s) Traditionally Offered: Fall

WATS 6970 - Thesis Research
1-12 credits

Offers credit for field or laboratory research at master's level.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer
WATS 6990 - Continuing Graduate Advisement
1-9 credits

Offers credit for students currently enrolled in a master’s program, who are not currently taking classes. Students may be conducting research or waiting for final approval from School of Graduate Studies.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 7120 - Aquatic Production Biology
2 credits

Review of current literature on bacterial, algal, invertebrate, and fish production in lakes, rivers, and the sea. Particular emphasis is placed on whole-ecosystem productivity studies.

Cross-listed as: WATS 6120.

Semester(s) Traditionally Offered: Spring

WATS 7230 - Fish Ecology
2 credits

Reviews current literature on physiological, behavioral, population, and the community ecology of fishes. Particular emphasis placed on current literature relevant to management of sport and endangered freshwater species.

Cross-listed as: WATS 6230.

Semester(s) Traditionally Offered: Spring

WATS 7640 - Riparian Ecology and Management
3 credits

Explores structure and function of riparian ecosystems and management options for maintaining sustainable ecological function.

Prerequisite/Restriction: NR 2220/BIOL 2220, WATS 3700.

Cross-listed as: WATS 5640.

Semester(s) Traditionally Offered: Spring

WATS 7800 - Watershed Sciences Departmental Seminar
1 credit

Exposes students to new developments in research and management in the fields of watershed sciences. Features participation by students, faculty, and guest lecturers. Graduate students should register for only one semester each year, but attend all year. Undergraduate students are only required to register once. Graduate students will participate in an additional reading and discussion group for the seminars.

Cross-listed as: WATS 4980/WATS 6800.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring

WATS 7820 - Stream Ecology
3 credits

Explores structure, function, and dynamics of flowing water ecosystems.

Cross-listed as: WATS 6820.

Semester(s) Traditionally Offered: Fall

WATS 7900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 7910 - Directed Study
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 7970 - Dissertation Research
1-12 credits

Offers credit for field or laboratory research at doctoral level.
Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WATS 7990 - Continuing Graduate Advisement
1-9 credits

Offers credit for students currently enrolled in a doctoral program, who are not currently taking classes. Students may be conducting research or waiting for final approval from School of Graduate Studies.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

Welding (USU Eastern)

WELD 1010 - Beginning Shielded Metal Arc Welding (SMAW)
3 credits

Designed for the general public and for related trades such as auto mechanics, carpentry, diesel mechanics and mining. Beginning course which covers the basics of SMAW and oxy-fuel cutting theory. Course permits 4 lab hours per week for practical hands-on experience.

Emphasis is on safety, joint types, base material and electrode identification, welding positions, and proper care and use of equipment.

Campus: USU Eastern only

WELD 1100 - Shielded Metal Arc Welding (SMAW)
7 credits

Designed for welding technology majors who plan on choosing a career in the welding industry. This is also a beginning course but covers more theory and hands-on practice to help develop the necessary skills to become a proficient welder. Covers safety aspects associated with welding and fabrication, SMAW, carbon arc cutting and oxy-fuel cutting, fundamentals of electricity as it relates to the SMAW process, joint design and base metal preparation, preheat/interpass temperatures, heat input/cooling rates, AWS electrode classifications, ASTM base metal identification, and welding procedures and quality of the welds associated with the SMAW process. Proper use of oxy-fuel with portable and line burning applications will also be taught. (5 joint designs)

Campus: USU Eastern only

WELD 1110 - Advanced Shielded Metal Arc Welding (SMAW)
3 credits

Designed for welding technology majors and for people who are already in the industry working as welders. Designed to help prepare certify welders to any of the following welding codes: AWS D1.1, API 1104, and ASME Section I to meet current industry qualification standards for employment. Emphasis is on welding open root structural and pipe joints with E6010, and fill with E7018 electrodes. Training will be performed in all appropriate welding positions. At the end of the course, welding technology students will be required to take certification test in accordance with AWS D1.1 Structural Welding Code book. Mostly butt welds on groove joints.

Prerequisite/Restriction: WELD 1100

Campus: USU Eastern only

WELD 1120 - Beginning Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)
7 credits

Designed for welding technology majors to cover theory and practical hands-on experience with semiautomatic wire fed machines. Emphasis is on safety and maintenance of equipment, basic fundamentals of each process, mode of transfers associated with GMAW process, electrode selection, gas selection, proper regulator and flowmeter calibration. Joint design and equipment troubleshooting will also be discussed.

Campus: USU Eastern only

WELD 1130 - Advanced Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)
3 credits

Designed for welding technology majors and for people who are already in the industry working as welders. Designed to certify welders to any of the following welding codes: AWS D1.1, API, 1104, and ASME Section IX to meet current industry qualification standards for employment. Emphasis is on welding structural steel with the five basic joint designs. Training will be performed in all appropriate welding positions. At the end of the course, welding technology students will be required to take an all-position certification test in accordance with AWS D1.1 Structural Welding Code
WELD 1140 - Related Welding Processes  
7 credits  
Designed for welding technology majors to expand their knowledge of other related welding processes such as: Submerged Arc Welding, Stud Welding, Plasma Arc Cutting and Welding, Electroslag Welding, Thermal Spraying, Explosion Weld, Laser Beam and Water Jet Cutting, Brazing and Soldering. Combination of theory and practice.  
Campus: USU Eastern only

WELD 1150 - Beginning Gas Tungsten Arc Welding (GTAW)  
7 credits  
Designed for welding majors to cover theory and practical hands on experience with the manual GTAW process. Emphasis is on safety, equipment maintenance, material selection, gas selection, and proper regulator and flowmeter use. Joint design and equipment troubleshooting will also be discussed.  
Campus: USU Eastern only

WELD 1160 - Advanced Gas Tungsten Arc Welding (GTAW)  
3 credits  
Designed for welding technology majors and for people who are already in the industry working as welders. Designed to prepare welders to certify to various industry qualification standards for employment. Emphasis is on welding structural steel with the five basic joint designs. Training will be performed in all appropriate welding positions.  
Prerequisite/Restriction: WELD 1150  
Campus: USU Eastern only

WELD 1500 - Professional Vocational Leadership  
1 credit  
Supports and facilitates the goals and objectives of Vocational Industrial Clubs of America (Skills USA). Students will gain skills in the following areas: personal development, service, team building and leadership, workplace skills, and interview skills. Students may participate in regional, state and national competitions.  
Repeatable for credit  
Campus: USU Eastern only  
Semester(s) Traditionally Offered: Fall, Spring

WELD 2400 - Print Reading for Welders  
3 credits  
Designed for the person who has had no previous experience with reading blueprints or mechanical drawings. Includes learning how to determine arrangement of views, shape analysis, pictorial sketching, types of lines used in prints, dimensions/tolerances, finish marks, bill of materials, and threads; with special emphasis on welding symbols in accordance with the American Welding Society.  
Campus: USU Eastern only

WELD 2410 - Practical Fabrication and Layout  
3 credits  
Designed for students to simulate on-the-job work experience. Students will work with plans, determine size and selection of building materials, perform cost estimation, and build projects. Intended to use current fabrication techniques on personal and industry related projects.  
Campus: USU Eastern only

WELD 2500 - Weld Inspection  
3 credits  
Designed for students who plan on taking the Certified Welding Inspector’s Test. Will outline the general duties and responsibilities of welding inspectors. Each welding code book will be briefly discussed in order to familiarize students with procedure qualifications and welder qualifications that are currently used in industry. Destructive and non-destructive methods of inspection will be covered.  
Campus: USU Eastern only

WELD 2600 - Metallurgy  
3 credits
Designed for welding technology majors. Beginning course which covers the study of metal characteristics and how those characteristics are affected by common welding techniques. Common heat treating processes such as quenching, annealing, normalizing, tempering, and crystallization will be discussed. Students will learn to recognize the internal structures of various metals and metal identification techniques used in industry. Mechanical properties, failure and deformation, isothermal transformation diagrams and iron carbon diagrams will be discussed.

Campus: USU Eastern only

**WELD 2988 - Special Problems**

1-3 credits

Individual work approved by instructor. Time and credit to be arranged.

Campus: USU Eastern only

**Women and Gender Studies**

**WGS 1010 - Introduction to Women and Gender Studies (BSS)**

BSS Breadth Social Sciences

3 credits

Survey course covering fundamentals of women and gender studies. Explores women’s and men’s diverse experiences, perspectives, and contributions to society and its institutions. Examines cultural beliefs and stereotypes concerning women’s and men’s roles in society. Reviews feminist theory, socialization, ideology, and history of women’s movement.

Semester(s) Traditionally Offered: Spring

**WGS 2010 - Women and Leadership**

3 credits

Engages students in academic and practical experiences that strengthen their sense of self and prepare them to pursue leadership roles. Discussion of research and readings pertinent to the study of women’s leadership and activism. Development of and participation in a personal leadership project providing a substantive opportunity to apply information and skills learned through the class.

Semester(s) Traditionally Offered: Spring

**WGS 4410 - Gender and the Mass Media**

3 credits

Examines the nature of gender-based images in a variety of mass media, from advertising to magazines, television, and film. Analysis of gender stereotypes and portrayals in news and entertainment media, along with resulting social impacts.

Prerequisite/Restriction: Fulfillment of Communications Literacy CL2 requirement; junior standing or instructor permission.

Cross-listed as: WGS 6410 and JCOM 6410/JCOM 4410.

Semester(s) Traditionally Offered: Fall

**WGS 4550 - Women and Gender in America (DHA/CI)**

DHA/CI Depth Humanities and Creative Arts and Communications Intensive

3 credits

Writing intensive course drawing on film, primary documents, and readings to trace the history of women, emphasizing race, class, and gender influences of each era.

Cross-listed as: HIST 4550.

Semester(s) Traditionally Offered: Fall

**WGS 4900 - Directed Study: Women and Gender Studies**

1-3 credits

Directed research, writing, and reading in relation to gender studies. Provides students with an in-depth opportunity to work individually with a faculty member. Contract for work to be completed must be signed by the Women and Gender Studies director, the faculty member, and the student, then filed with the Women and Gender Studies Program.

Prerequisite/Restriction: Permission of program chair.

Repeatable for credit

Semester(s) Traditionally Offered: Fall, Spring, Summer

**WGS 6410 - Gender and the Mass Media**

3 credits
Examines the nature of gender-based images in a variety of mass media, from advertising to magazines, television, and film. Analysis of gender stereotypes and portrayals in news and entertainment media, along with resulting social impacts.

Prerequisite/Restriction: Enrollment in WGS 6410 limited to graduate students only.

Cross-listed as: WGS 4410 and JCOM 6410 and JCOM 4410

Semester(s) Traditionally Offered: Fall

Wildland Resources

WILD 2000 - Introduction to Wildland Resources
1 credit

Through a combination of in- and out-of-classroom activities, students develop an understanding of the basic content, curricula requirements, and career opportunities associated with the conservation and restoration ecology, forestry, rangeland resources, and wildlife science majors.

Semester(s) Traditionally Offered: Fall, Spring

WILD 2200 - Ecology of Our Changing World (BLS)
BLS Breadth Life Sciences
3 credits

Foundations of ecological and evolutionary relationships of organisms with other organisms and with the physical environment, emphasizing populations, communities, and ecosystems. Integration of basic science with applications of science to understanding human interactions with the environment.

Semester(s) Traditionally Offered: Fall, Spring

WILD 2250 - Introductory Internship/Co-op
1-3 credits

Introductory-level educational experience in internship/cooperative education position approved by department.

Prerequisite/Restriction: Departmental signature.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 2300 - Mushroom Identification
1 credit

Lecture course covering taxonomy, ecology, and importance of macro and micro fungi.

Cross-listed as: BIOL 2300.

Semester(s) Traditionally Offered: Fall

WILD 2310 - Mushroom Identification Lab
1-2 credits

Lab course acquainting students with basic fungal taxonomic groups. Students collect, preserve, and identify fungi they collect. Edible fungi prepared and eaten.

Cross-listed as: BIOL 2310.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall

Page: 1 <- Back 10 .. 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55

Wildland Resources

WILD 3300 - Management Aspects of Wildlife Behavior (CI)
CI Communications Intensive
3 credits

Principles, concepts, and mechanisms of animal behavior, emphasizing behavioral ecology, development, and comparative aspects of special relevance to management of fish and wildlife.

Prerequisite/Restriction: BIOL 1610, BIOL 1620, and BIOL 2220/NR 2220.

Semester(s) Traditionally Offered: Spring

WILD 3600 - Wildland Plant Ecology and Identification
4 credits

Autecology and identification of dominant grass, forb, and woody plants of the Intermountain West.
Emphasizes native species; however, introduced or noxious weeds are included. Explores plant structure and function, as related to the environment. Enrollment limited to WILD Department majors. Department authorization required for all nonmajors.

Semester(s) Traditionally Offered: Fall

WILD 3610 - Wildland Animal Ecology and Identification
4 credits

Autecology and identification of important mammals, birds, reptiles, and amphibians of the Intermountain West. Emphasizes native species distribution and habitat requirements in relation to the environment.

Prerequisite/Restriction: NR 2220/Biol 2220. Enrollment limited to WILD Department majors. Department authorization required for all nonmajors.

Semester(s) Traditionally Offered: Fall

WILD 3800 - Wildland Ecosystems
3 credits

Structure, function, and dynamics of terrestrial ecosystems in response to natural and anthropogenic impacts, with emphasis on the vegetation of the Intermountain West and Great Plains.

Prerequisite/Restriction: NR 2220/Biol 2220; and PSC 3000 (or concurrent enrollment).

Semester(s) Traditionally Offered: Spring

WILD 3810 - Plant and Animal Populations
3 credits

Basics of plant and animal population ecology, including population regulation, life histories, single and multispecies interactions, and metapopulations. Case studies will cover topics of both management and conservation concern.

Prerequisite/Restriction: NR 2220/Biol 2220, Math 1100 or higher.

Semester(s) Traditionally Offered: Spring

WILD 4000 - Principles of Rangeland Management
3 credits

Modern principles of rangeland management, including history of the profession, ecology, plant physiology, impacts of grazing on individual plants and plant communities, grazing management, range animal nutrition, rangeland watersheds, and the economics and planning of rangeland practices. Also introduces range-wildlife relations and vegetation manipulation.

Semester(s) Traditionally Offered: Spring

WILD 4250 - Advanced Internship/Co-op
1-9 credits

Advanced-level educational experience in internship/cooperative education position approved by department.

Prerequisite/Restriction: Departmental signature.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 4500 - Principles of Wildlife Management
3 credits

Provides students with a working knowledge of the application of basic concepts in ecology and animal behavior to the management of wildlife resources to achieve diverse objectives of conservation, control, or cropping.

Prerequisite/Restriction: WILD 3610 and WILD 3810.

Semester(s) Traditionally Offered: Spring

WILD 4520 - Wildland Fire Behavior
3 credits

Comprehensive examination of fuels, weather, and topography and how they interact to determine wildland fire behavior, including rate of spread, energy release, and intensity.

Repeatable for credit.
Campus: WebCT.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 4550 - Wildlife Law Enforcement
3 credits

Explores essential topics relating to enforcement of wildlife and other natural resource laws, including applicable state and federal laws, policy formulation,
rights of the individual, search and seizure, field forensic procedures, and the judicial process.

Semester(s) Traditionally Offered: Fall
WILD 4600 - Conservation Biology
3 credits

Patterns and processes creating biological diversity. Causes and consequences of diversity losses from genes to ecosystems, including habitat fragmentation and exotic invasion. Conservation laws and organizations. Approaches to conserving diversity loss, including reserve design, corridors, and species reintroductions.

Prerequisite/Restriction: NR 2220/BIOL 2220.

Semester(s) Traditionally Offered: Spring
WILD 4700 - Ecological Foundations of Restoration
3 credits

An advanced plant ecology course emphasizing topics especially relevant to successful establishment of plants in disturbed environments and restoration of functioning dynamic ecosystems. It covers basic ecological processes from the population the ecosystem level and applications to ecological restoration.

Prerequisite/Restriction: NR 2220 or BIOL 2220

Semester(s) Traditionally Offered: Spring
WILD 4750 - Monitoring and Assessment in Natural Resource and Environmental Management (CI)
CI Communications Intensive
3 credits

Lectures, laboratory exercises, and field-based projects introduce students to the concepts, strategies, and analytical methods of natural resource and environmental monitoring and assessment.

Prerequisite/Restriction: BIOL 2220/NR 2220; MATH 1100 or higher; STAT 2000 or STAT 3000

Semester(s) Traditionally Offered: Fall
WILD 4810 - Directed Reading in Wildlife Damage Management
2 credits

Focuses on wildlife damage management, especially as it reflects on both positive and negative human-wildlife interactions. For this reading course, students work with instructor to develop appropriate and rigorous reading program.

Semester(s) Traditionally Offered: Fall, Spring, Summer
WILD 4830 - Directed Reading in Wildlife Biology
1-3 credits

Papers selected for the course cover a wide range of topics in wildlife biology concerning a variety of vertebrate species. The goal is to expand the student’s awareness of advances in the field of wildlife biology by reading from a range of topics that give the student new perspectives and information on this fascinating field of study. Repeatable for additional credit every 12 months.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer
WILD 4840 - Directed Reading in Vegetation and Landscapes for Wildlife Management
1-3 credits

Papers selected for the course cover a wide range of topics: landscape level effects, vegetation management to control wildlife, impacts of wildlife on vegetation, and the interactions of landscape and scale on management decisions. The goal is to expand the student’s awareness of subjects in the filed of wildlife management by selecting topics and readings that give the student new perspectives and information on this fascinating field study. Repeatable for additional credit very 12 months.

Repeatable for credit
Semester(s) Traditionally Offered: Fall, Spring, Summer
WILD 4850 - Vegetation and Habitat Management
3 credits

Applying ecological principles and concepts to manipulate the composition, structure, and productivity of wildland vegetation for a range of objectives, including the creation and maintenance of wildlife habitat, using biological, chemical, and mechanical methods, as well as fire.

Prerequisite/Restriction: PSC 3000; WILD 3600.
WILD 4880 - Genetics in Conservation and Management
3 credits
Introduces principles of modern genetics, with applications, examples, and assignments related to ecology and management issues. Emphasizes genetic marker systems, gene flow, genetic drift, and adaptation.
Prerequisite/Restriction: CHEM 1110 or CHEM 1210; and BIOL 1610.
Semester(s) Traditionally Offered: Fall

WILD 4910 - Assessment and Synthesis in Natural Resource Science
3 credits
Science-based assessments of natural resources conducted through implementation of analytical methods and synthesis. Case studies used to develop concepts, strategies, and problem-solving skills. Basic GIS and remote sensing skills developed.
Prerequisite/Restriction: WILD 3600, WILD 3610, WILD 3800, WILD 3810, and WILD 4750.
Semester(s) Traditionally Offered: Spring

WILD 4950 - Special Topics
1-3 credits
Individual study and research upon selected problems.
Prerequisite/Restriction: Departmental permission.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 4960 - Directed Readings
1-3 credits
Individual reading research on forest, range, and wildlife science readings.
Prerequisite/Restriction: Departmental approval
Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 4970 - Undergraduate Research
1-3 credits
Individual or team research.
Prerequisite/Restriction: Departmental permission.
Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 4980 - Undergraduate Seminar
1 credit
Review of current research by graduate students and faculty. Exposes students to new developments in research and management in the fields of wildland resources. Features participation by students, faculty, and guest lecturers.
Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring

WILD 5220 - Community-based Conservation Partnerships
3 credits
Seeks to infuse ecology with applied conservation and management approaches. Conservation and management of natural resources requires an understanding of ecological relationships and strategies for working with diverse stakeholders. PhD-level students present their research.
Cross-listed as: WILD 7220.
Semester(s) Traditionally Offered: Spring

WILD 5300 - Wildlife Damage Management Principles
3 credits
Explains current legal, ethical, and biological principles for the control and/or management of problem vertebrate species.
Cross-listed as: WILD 7300.
Semester(s) Traditionally Offered: Spring

WILD 5350 - Wildland Soils
3 credits
Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on
wildland soil properties. Role of soils in natural resource management.

Prerequisite/Restriction: CHEM 1110; PSC 3000, and one additional upper-division Soils course, or permission of instructor.

Cross-listed as: WILD 6350 and PSC 5350/PSC 6350.

Semester(s) Traditionally Offered: Spring

WILD 5420 - Forest and Shade Tree Pathology (CI)
CI Communications Intensive
3 credits

Nature, cause, and management of forest diseases.

Cross-listed as: BIOL 5420 and PSC 5420.

Semester(s) Traditionally Offered: Spring

WILD 5450 - Winter Ecology
2 credits

Emphasizes the effects of winter abiotic conditions on organisms and subsequent organismal adaptation to these conditions. Through lectures and field laboratories, explores energy flux, snowpack physics, organismal adaptations, and the influence of winter on wildlife management.

Semester(s) Traditionally Offered: Spring

WILD 5460 - Avalanche and Snow Dynamics
2 credits

Fundamentals of snow and avalanche dynamics. Avalanche safety, forecasting, hazard evaluation, and control.

Semester(s) Traditionally Offered: Spring first half of semester

WILD 5500 - Dendrology: The Study of Trees
4 credits

At a range of spatial scales from local to global, explores the natural history and adaptive strategies of the arborescent habit from its origins approximately 400 million years ago to the present.

Semester(s) Traditionally Offered: Fall

WILD 5650 - Urban/Community Forestry
3 credits

Social, biological, and administrative aspects of managing urban/community forests, including field and classroom exercises and a management planning project.

Cross-listed as: PSC 5650.

Semester(s) Traditionally Offered: Spring

WILD 5700 - Forest Assessment and Management
3 credits

Detailed analysis of forest stand structure and growth. Development of silvicultural prescriptions to meet specific objectives. Analysis of costs and benefits of alternative forest management strategies. Emphasizes forest management to achieve a broad range of objectives.

Semester(s) Traditionally Offered: Spring

WILD 5710 - Forest Vegetation Disturbance Ecology and Management
3 credits

Examines causes, effects, and management options for selected biotic and abiotic agents of disturbance in wildland ecosystems.

Semester(s) Traditionally Offered: Fall

WILD 5750 - Applied Remote Sensing
3 credits

Covers the application of remote sensing to landcover mapping and resource monitoring at a quantitative level. Students instructed on the effects of atmosphere and surface interaction on the reflectance collected by electro-optical sensors, as well as on the proper use and interpretation of various calibration and classification algorithms.

Cross-listed as: WILD 6750.

Semester(s) Traditionally Offered: Fall

WILD 5860 - Poisonous Range Plants Affecting Livestock
3 credits

Poisonous plants of rangelands and their effects on...
grazing animals, especially livestock. Management practices to reduce or prevent poisoning.

Cross-listed as: ADVS 5860.

Semester(s) Traditionally Offered: Spring

WILD 6200 - Biogeochemistry of Terrestrial Ecosystems
3 credits

Inputs, outputs, and cycling patterns of major nutrients. Emphasis on mechanisms for transformations, factors influencing process rates, and the impacts of management and global change on nutrient cycles and air and water quality.

Prerequisite/Restriction: BIOL 1620, PSC 3000, CHEM 2300 or CHEM 2310, or permission of instructor.

Cross-listed as: BIOL 6200 and PSC 6200.

Semester(s) Traditionally Offered: Fall

WILD 6240 - Graduate Internship/Co-op
1-9 credits

Graduate-level educational experience in internship/cooperative education position approved by department.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 6350 - Wildland Soils
3 credits

Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on wildland soil properties. Role of soils in natural resource management.

Prerequisite/Restriction: CHEM 1110; PSC 3000, and one additional upper-division Soils course, or permission of instructor.

Cross-listed as: WILD 5350 and PSC 6350/PSC 5350.

Semester(s) Traditionally Offered: Spring

WILD 6400 - Ecology of Animal Populations
4 credits

Growth, fluctuation, balance, and control of animal populations.

Semester(s) Traditionally Offered: Fall

WILD 6500 - Biometry: Design and Analysis of Ecology Research
4 credits

Examines research design from statistical perspective, showing how data analysis is largely determined by research design and its implementation. Reviews statistical tools for analysis of ecological data in the context of design.

Prerequisite/Restriction: Graduate standing.

Semester(s) Traditionally Offered: Fall

WILD 6510 - Topics in Spatial Ecology
1-3 credits

Seminars on analysis and interpretation of spatially explicit ecological data. Topics vary yearly, and range from spatial statistics to assessing uncertainty in environmental information systems to spatial analyses of plant and animal populations.

Prerequisite/Restriction: Graduate-level course in statistics and permission of instructor.

Repeatable for credit.

Semester(s) Traditionally Offered: Spring

WILD 6710 - Landscape Ecology
3 credits

Focuses on landscape-scale patterns and processes, and ways of understanding ecological complexity. Explores conceptual underpinnings of larger-scale ecology. Emphasizes understanding of current peer-reviewed literature.

Cross-listed as: WILD 7710.

Semester(s) Traditionally Offered: Spring

WILD 6720 - Advanced Conservation Biology
3 credits

Examines cases and consequences of population and species declines, including activities such as habitat fragmentation and introduction of exotic species, as well
as natural causes due to genetics and demography.

Cross-listed as: WILD 7720.

Semester(s) Traditionally Offered: Spring

WILD 6740 - Physical Processes in Remote Sensing
3 credits

Assures that students are well-versed in the science and technology of remote sensing. Covers various algorithms and their ability to extract biophysical information from remotely sensed images. Helps students gain firm knowledge of the capabilities and limitations of these algorithms and their use in understanding landscape level biophysical interactions.

Semester(s) Traditionally Offered: Spring

WILD 6750 - Applied Remote Sensing
3 credits

Covers the application of remote sensing to landcover mapping and resource monitoring at a quantitative level. Students instructed on the effects of atmosphere and surface interaction on the reflectance collected by electro-optical sensors, as well as on the proper use and interpretation of various calibration and classification algorithms.

Cross-listed as: WILD 5750.

Semester(s) Traditionally Offered: Fall

WILD 6770 - Plant Community Ecology
3 credits


Semester(s) Traditionally Offered: Spring

WILD 6800 - Forest, Range, and Wildlife Sciences Departmental Seminar
1 credit

Review of current research by graduate students and faculty. Exposes students to new developments in research and management in the fields of wildland resources. Features participation by students, faculty, and guest lecturers. Graduate students are required to register for one semester of seminar credit but are encouraged to attend as many seminars as possible throughout their academic experience.

Cross-listed as: WILD 7800.

Repeatable for credit
Pass/Fail only

Semester(s) Traditionally Offered: Fall, Spring

WILD 6870 - Ecology Seminar
1 credit

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures. Students should register for fall semester, but attend through spring semester.

Cross-listed as: BIOL 6870 and ENVS 6870 and PSC 6870 and WATS 6870.

Repeatable for credit.
Pass/Fail only.

Semester(s) Traditionally Offered: Fall, Spring

WILD 6900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 6910 - Directed Study
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.

Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 6960 - Graduate General Ecology
4 credits

General concepts, history, and issues in all major areas of the science of ecology including: environmental
biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic environments.

Cross-listed as: BIOL 6960 and ENVS 6960 and PSC 6960 and WATS 6960.

Semester(s) Traditionally Offered: Fall

WILD 6970 - Thesis Research
1-12 credits

Original research for MS degree.

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 6990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 7000 - Theory and Applications of Rangeland Ecosystem Management
3 credits

Application of range management principles, new theory, and public policy to on-the-ground decision-making in public and private lands. Field trips required.

Semester(s) Traditionally Offered: Fall

WILD 7030 - Plant-Herbivore Interactions
3 credits

Emphasizes principles of self-organization as applied to plant (tolerance and avoidance of herbivory) and herbivore (food and habitat selection) behavior. Stresses importance of history and ongoing interactions with the environment in understanding the dynamics of plant-herbivore interactions.

Semester(s) Traditionally Offered: Summer

WILD 7200 - Plant Physiological Ecology
3 credits

Plant response to environmental factors; includes environmental biophysics, physical and physiological factors influencing productivity, water use, resistance to stress, reproduction, establishment of plants, and competition with neighboring plants.

Semester(s) Traditionally Offered: Fall

WILD 7220 - Community-based Conservation Partnerships
3 credits

Seeks to infuse ecology with applied conservation and management approaches. Conservation and management of natural resources requires an understanding of ecological relationships and strategies for working with diverse stakeholders. PhD-level students present their research.

Cross-listed as: WILD 5220.

Semester(s) Traditionally Offered: Spring

WILD 7300 - Wildlife Damage Management Principles
3 credits

Explains current legal, ethical, and biological principles for the control and/or management of problem vertebrate species.

Cross-listed as: WILD 5300.

Semester(s) Traditionally Offered: Spring

WILD 7400 - Plant Population Ecology
3 credits

Dynamics of plant populations as influenced by interactions with their abiotic and, especially, biotic environments. Topics include dormancy and germination strategies, intra- and interspecific competition, facilitation, disturbance, herbivory, pathogenic and mutualistic fungi, pollination, seed dispersal, and vegetative reproduction.

Semester(s) Traditionally Offered: Fall

WILD 7710 - Landscape Ecology
3 credits

Focuses on landscape-scale patterns and processes, and ways of understanding ecological complexity. Explores conceptual underpinnings of larger-scale ecology. Emphasizes understanding of current peer-reviewed
WILD 7720 - Advanced Conservation Biology
3 credits

Examines cases and consequences of population and species declines, including activities such as habitat fragmentation and introduction of exotic species, as well as natural causes due to genetics and demography.

Cross-listed as: WILD 6710.

Semester(s) Traditionally Offered: Spring

WILD 7800 - Forest, Range, and Wildlife Sciences Departmental Seminar
1 credit

Review of current research by graduate students and faculty. Exposes students to new developments in research and management in the fields of wildland resources. Features participation by students, faculty, and guest lecturers. Graduate students are required to register for one semester of seminar credit but are encouraged to attend as many seminars as possible throughout their academic experience.

Cross-listed as: WILD 6800

Repeatable for credit
Pass/Fail only
Semester(s) Traditionally Offered: Fall, Spring

WILD 7900 - Graduate Special Topics
1-6 credits

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses.

Repeatable for credit.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 7970 - Dissertation Research
1-12 credits

Original research and study for PhD degree.

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer

WILD 7990 - Continuing Graduate Advisement
1-9 credits

Repeatable for credit.
Pass/Fail only.
Semester(s) Traditionally Offered: Fall, Spring, Summer