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## Curriculum Subcommittee Minutes, March 1, 2012

Utah State University

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**CURRICULUM SUBCOMMITTEE MINUTES**  
**1 March 2012**

A meeting of the Curriculum Subcommittee of the Educational Policies Committee was held on 1 March 2012 at 2 p.m. in Old Main 136 (Champ Hall Conference Room).

Present: Ed Reeve, Chair, College of Engineering  
Tom Bunch, Agriculture  
Darrin Brooks, Caine College of the Arts  
Jeff Doyle, Huntsman School of Business  
Scott Hunsaker, Emma Eccles Jones College of Education and Human Services  
Patricia Gantt, College of Humanities and Social Sciences  
Nancy Mesner, College of Natural Resources  
Richard Mueller, College of Science  
Travis Peterson, Regional Campuses and Distance Education  
David Cassidy, USU-Eastern (representing Michelle Fleck)  
Wendy Holliday, Libraries  
Steve Beck, Graduate Council (representing Shelley Lindauer)  
Norm Jones, General Education Subcommittee Chair  
Roland Squire, Registrar's Office  
Cathy Gerber, Registrar's Office

Absent: Tanner Wright, Academic Senate President  
Cami Jones, Graduate Studies Vice President

Visitors: Larry Smith, Vice Provost  
Michele Hillard, Provost Office  
Noelle Cockett, Dean, College of Agriculture

Tom Bunch moved to approve the minutes of the 2 February 2012 meeting. Darrin Brooks seconded, motion approved.

Tom Bunch moved to approve the business of the College of Agriculture. Darrin Brooks seconded; motion approved.

**College of Agriculture**

**Department of Agricultural Systems Technology and Education**

**School of Applied Sciences, Technology and Education**

**Prefix Changes**

The following changes are effective Spring 2013

OLD Dept	Subject	Course	NEW Dept	Subject	Course
ETE	ETE	1000	ASTE	TEE	1000
ETE	ETE	1010	ASTE	TEE	1010

ETE	ETE	1020	ASTE	TEE	1020
ETE	ETE	1030	ASTE	TEE	1030
ETE	ETE	1040	ASTE	TEE	1040
ETE	ETE	1200	ASTE	TEE	1200
ETE	ETE	1640	ASTE	TEE	1640
ETE	ETE	2020	ASTE	TEE	2020
ETE	ETE	2030	ASTE	TEE	2030
ETE	ETE	2220	ASTE	TEE	2220
ETE	ETE	2240	ASTE	TEE	2240
ETE	ETE	2300	ASTE	TEE	2300
ETE	ETE	2310	ASTE	TEE	2310
ETE	ETE	2320	ASTE	TEE	2320
ETE	ETE	2360	ASTE	TEE	2360
ETE	ETE	2370	ASTE	TEE	2370
ETE	ETE	2400	ASTE	TEE	2400
ETE	ETE	2660	ASTE	TEE	2660
ETE	ETE	2850	ASTE	TEE	2850
ETE	ETE	3040	ASTE	TEE	3040
ETE	ETE	3050	ASTE	TEE	3050
ETE	ETE	3070	ASTE	TEE	3070
ETE	ETE	3200	ASTE	TEE	3200
ETE	ETE	3230	ASTE	TEE	3230
ETE	ETE	3240	ASTE	TEE	3240
ETE	ETE	3270	ASTE	TEE	3270
ETE	ETE	3300	ASTE	TEE	3300
ETE	ETE	3380	ASTE	TEE	3380
ETE	ETE	3390	ASTE	TEE	3390
ETE	ETE	3400	ASTE	TEE	3400
ETE	ETE	3440	ASTE	TEE	3440
ETE	ETE	3510	ASTE	TEE	3510
ETE	ETE	3710	ASTE	TEE	3710
ETE	ETE	3740	ASTE	TEE	3740
ETE	ETE	3900	ASTE	TEE	3900
ETE	ETE	3930	ASTE	TEE	3930
ETE	ETE	4300	ASTE	TEE	4300
ETE	ETE	4310	ASTE	TEE	4310
ETE	ETE	4400	ASTE	TEE	4400
ETE	ETE	4440	ASTE	TEE	4440
ETE	ETE	4700	ASTE	TEE	4700
ETE	ETE	4710	ASTE	TEE	4710
ETE	ETE	4930	ASTE	TEE	4930

ETE	ETE	4940	ASTE	TEE	4940
ETE	ETE	5040	ASTE	TEE	5040
ETE	ETE	5220	ASTE	TEE	5220
ETE	ETE	5230	ASTE	TEE	5230
ETE	ETE	5240	ASTE	TEE	5240
ETE	ETE	5500	ASTE	TEE	5500
ETE	ETE	5630	ASTE	TEE	5630
ETE	ETE	5800	ASTE	TEE	5800
ETE	ETE	5900	ASTE	TEE	5900
ETE	ETE	5910	ASTE	TEE	5910
ETE	ETE	5920	ASTE	TEE	5920
ETE	ETE	6090	ASTE	TEE	6090
ETE	ETE	6100	ASTE	TEE	6100
ETE	ETE	6150	ASTE	TEE	6150
ETE	ETE	6200	ASTE	TEE	6200
ETE	ETE	6250	ASTE	TEE	6250
ETE	ETE	6310	ASTE	TEE	6310
ETE	ETE	6440	ASTE	TEE	6440
ETE	ETE	6450	ASTE	TEE	6450
ETE	ETE	6520	ASTE	TEE	6520
ETE	ETE	6750	ASTE	TEE	6750
ETE	ETE	6800	ASTE	TEE	6800
ETE	ETE	6900	ASTE	TEE	6900
ETE	ETE	6910	ASTE	TEE	6910
ETE	ETE	6930	ASTE	TEE	6930
ETE	ETE	6960	ASTE	TEE	6960
ETE	ETE	6970	ASTE	TEE	6970
ETE	ETE	6990	ASTE	TEE	6990

### **Department of Agricultural Systems Technology Education**

#### **Prerequisite Change**

ASTE 6100     Research Methods in Agricultural Systems     3 cr.  
Prerequisites: PSY 2800; STAT 2000; STAT 3000; SOC 3120 or  
permission of instructor  
Effective Spring 2013

### **Department of Animal, Dairy and Veterinary Sciences**

#### **School of Veterinary Medicine**

#### **New Course**

VM 7499     Veterinary Practicum     1 cr.  
Pass/Fail Only  
Repeatable for credit  
Effective Fall 2012

VM 7500	Animals, Society and the Veterinarian Pass/Fail Only Effective Fall 2012	1 cr.
VM 7510	Veterinary Microscopic Anatomy Pass/Fail Only Effective Fall 2012	4 cr.
VM 7511	Veterinary Anatomy I Pass/Fail Only Effective Fall 2012	5 cr.
VM 7512	Veterinary Anatomy II Pass/Fail Only Effective Fall 2012	3 cr.
VM 7519	Veterinary Physiology I Pass/Fail Only Effective Fall 2012	4 cr.
VM 7520	Veterinary Physiology II Pass/Fail Only Effective Fall 2012	5 cr.
VM 7521	Foundations of Veterinary Neurology Pass/Fail Only Effective Fall 2012	3 cr.
VM 7534	Veterinary Immunology Pass/Fail Only Effective Fall 2012	3 cr.
VM 7545	General Pathology Pass/Fail Only Effective Fall 2012	3 cr.
VM 7568	Animal Handling and Agricultural Animal Orientation Pass/Fail Only Effective Fall 2012	2 cr.
VM 7580	Basic Nutrition Pass/Fail Only Effective Fall 2012	1 cr.

VM 7586	Principles of Surgery Pass/Fail Only Effective Fall 2012	1 cr.
VM 7598	Introduction to Clinics Pass/Fail Only Effective Fall 2012	1 cr.
Prerequisite Change		
ADVS 6600/7600	Advanced and Molecular Toxicology No prerequisites needed Effective Fall 2013	3 cr.
<b>Department of Applied Economics</b>		
Delete Course		
APEC 6000/7230	Macroeconomic Theory I Effective Fall 2012	3 cr.
<b>Department of Plants, Soils and Climate</b>		
Title Change, Course Description Change		
PSC 3400	Arboriculture Previously Landscape Management Principles and Practices Effective Spring 2013	3 cr.
Prerequisite Change		
PSC 3420	Landscape Irrigation Design University Studies Designation: QI Prerequisite: PSC 2620 Effective Spring 2013	2 cr.

Darrin Brooks moved to approve the business of the Caine College of the Arts. Richard Mueller seconded; motion approved.

**Caine College of the Arts**

**Department of Art and Design**

University Studies Request

ARTH 3840	Race and Visual Culture University Studies Designation: CI Effective Summer 2012	3 cr.
ARTH 4520	Discourses of Empire and Nation University Studies Designation: CI Effective Summer 2012	3 cr.

Jeff Doyle moved to approve the business of the Huntsman School of Business. Richard Mueller seconded; motion approved.

**Huntsman School of Business**

**Department of Economics and Finance**

New Course

ECN 5700 Economics of Public Choice 3 cr.  
Prerequisite: ECN 4010  
Effective Summer 2012

Title Change, Course Number Change, Prerequisite Change, Multiple List Change

ECN 5020 Macroeconomic Theory 3 cr.  
Previously Macroeconomic Theory I, ECN 6000  
Remove multiple list of ECN 7230  
Prerequisites: ECN 4010 and 4020  
Effective Spring 2013

Prerequisite Change

ECN 5500 Public Finance 3 cr.  
University Studies Designation: CI  
Prerequisite: ECN 4010  
Effective Fall 2013

**Department of Management**

New Course

MGT 2900 Entrepreneurship: Starting Your Own Business 3 cr.  
Effective Fall 2012

Scott Hunsaker moved to approve the business of the Emma Eccles Jones College of Education and Human Services. Pat Gantt seconded; motion approved.

**Emma Eccles Jones College of Education and Human Services**

**Department of Communicative Disorders and Deaf Education**

Title Change, Prerequisite Change

COMD 4250 Practicum in Deafblindness 1-6 cr.  
Previously Cooperative Practicum/Work Experience  
Prerequisites: COMD 4660/6660 and COMD 4840/6840  
Effective Spring 2013

Prerequisite Change

COMD 4840/6840 Children with Combined Vision, Hearing Loss,  
and Multiple Disabilities 3-5 cr.  
Prerequisite: COMD 4660/6660  
Effective Spring 2013

## **Department of Health, Physical Education and Recreation**

### Prerequisite Change

PEP 4100	Exercise Physiology Prerequisites: BIOL 2320, 2420, PEP 2000 or 2020, and MATH 1050 or higher or Math ACT score of 25 or higher Effective Spring 2013	4 cr.
PEP 4200	Biomechanics University Studies Designation: QI Prerequisites: BIOL 2320, 2420, PEP 3250; and MATH 1050 or higher or Math ACT score of 25 or higher Effective Spring 2013	4 cr.
PEP 4900	Methods of Physical Education University Studies Designation: CI Prerequisite: PEP 2000 Corequisites: PEP 3300 or 4300 Effective Spring 2013	3 cr.

Richard Mueller moved to approve the business of the College of Engineering. Nancy Mesner seconded; motion approved.

## **College of Engineering**

### Prefix Change

ENGR 2270	Computer Engineering Drafting Previously ETE 2270 Effective Spring 2013	2 cr.
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## **Department of Civil and Environmental Engineering**

### Prerequisite Change, Corequisite Change

CEE/PUBH 3610	Environmental Management Prerequisite: CHEM 1210; BIOL 1610 or Breadth Life Sciences course; MATH 1210 No corequisite needed Effective Fall 2012	3 cr.
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## **Department of Engineering Education**

### Prefix Change

EED 7010	The Role of Cognition in Engineering and Technology Education Previously ETE 7010 Effective Spring 2013	3 cr.
EED 7020	Design Thinking in Engineering and Technology Previously ETE 7020 Effective Spring 2013	3 cr.



EED 7030	Engineering Design and Analysis for Technology Education Previously ETE 7030 Effective Spring 2013	3 cr.
EED 7040	Dynamic and Network Engineering Processes for Technology Education Previously ETE 7040 Effective Spring 2013	3 cr.
EED 7230	Foundations of Engineering and Technology Education Previously ETE 7230 Effective Spring 2013	3 cr.
EED 7400	Occupational Analysis and Curriculum Development Previously ETE 7400 Effective Spring 2013	3 cr.
EED 7460	Finance and Grant Writing Previously ETE 7460 Effective Spring 2013	3 cr.
EED 7500	Internationalizing Institutions of Higher Education Previously ETE 7500 Effective Spring 2013	3 cr.
EED 7600	Academic Issues and Politics in Higher Education Previously ETE 7600 Effective Spring 2013	3 cr.
EED 7810	Research Seminar Previously ETE 7810 Repeatable for credit Pass/Fail only Effective Spring 2013	1 cr.
EED 7900	Independent Study Previously ETE 7900 Effective Spring 2013	1-3 cr.
EED 7970	Dissertation Research Previously ETE 7970 Repeatable for credit Pass/Fail only Effective Spring 2013	1-15 cr

EED 7990	Continuing Graduate Advisement Previously ETE 7990 Repeatable for credit Pass/Fail only Effective Spring 2013	1-3 cr.
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Pat Gantt moved to approve the business of the College of Humanities and Social Sciences.  
Wendy Holliday seconded; motion approved.

**College of Humanities and Social Sciences**

**Department of History**

New Course

HIST 3481	China's Cultural Revolution Effective Fall 2012	3 cr.
HIST 3482	Ancient China to 1800 Effective Fall 2012	3 cr.
HIST 3483	Modern China, 1800 to Present Effective Fall 2012	3 cr.
HIST 3560	Modern East Asia Effective Fall 2012	3 cr.
HIST 4822	The Vietnam War Effective Fall 2012	3 cr.
HIST 4885	ST: History and Visual Media Effective Fall 2012	3 cr.
HIST 4989	History Research Methods Effective Fall 2012	3 cr.
RELS 3050	Introduction to Christianity Effective Fall 2012	3 cr.

Inactivate Course

HIST 3310	Balkans Since 1389 Effective Fall 2012	3 cr.
HIST 4400	History of Aviation and Aeronautics University Studies Designation: DHA Effective Fall 2012	3 cr.
HIST 4780	American Financial History University Studies Designation: DHA Effective Fall 2012	3 cr.

Delete Course

HIST 3480	History of China Effective Fall 2012	3 cr.
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**Department of Languages, Philosophy and Communication Studies**

New Course

ARBC 3010	Advanced Arabic I Prerequisite: ARBC 2020 or permission of instructor Effective Fall 2012	3 cr.
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LANG 2100	Languages of the World Effective Fall 2012	3 cr.
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## Prefix Change

The following changes are effective Spring 2013



January 20, 2012

To: Whom It May Concern

From: Bradford 'J' Hall, Department Head 

Re: Prefix change for Communication Studies

On January 9, 2012 the name of the Speech Communication program was officially changed to Communication Studies. As part of that change, we are requesting that all courses offered by the program have the prefix of "SPCH" changed to "CMST" (for examples, CMST 1020, CMST 2110, etc.). The courses impacted by this change are listed below:

- SPCH 1020 - Public Speaking (BHU) **3**
- SPCH 2110 - Interpersonal Communication (BHU/HR) **3**
- SPCH 2120 - Small Group Communication (HR) **3**
- SPCH 2250 - Introductory Internship/Co-op **1-6**
- SPCH 2270 - Argumentation and Debate **3**
- SPCH 2330 - Communication in a Global Era **3**
- SPCH 3000 - Speech Communication Teaching Practicum **1**
- SPCH 3050 - Technical and Professional Communication (DSS) **3**
- SPCH 3250 - Organizational Communication (CI) **3**
- SPCH 3300 - Clinical Experience I **1**
- SPCH 3330 - Intercultural Communication (DSS) **3**
- SPCH 3400 - Persuasion (CI) **3**
- SPCH 3500 - Communication and Leadership **3**
- SPCH 3600 - Communication and Conflict **3**
- SPCH 4200 - Language, Thought, and Action (DSS) **3**
- SPCH 4250 - Advanced Internship/Co-op **1-6**
- SPCH 4300 - Clinical Experience II **1**
- SPCH 4350 - Organizations and Social Change **3**
- SPCH 4460 - Communication Criticism **3**
- SPCH 5000 - Studies in Speech Communication **1-5**
- SPCH 5100 - Theories of Speech Communication (CI) **3**
- SPCH 5250 - Communication, Social Justice and the Environment **3**
- SPCH 5280 - Communication Education Theory **3**
- SPCH 5300 - Visual Rhetoric **3**
- SPCH 5370 - Methods in Teaching Speech Communication **3**
- SPCH 5400 - Advanced Persuasion **3**
- SPCH 5950 - Global Communication Practicum **3**
- SPCH 2280 - Listening 2 credits (Currently Inactive)

## **Department of Political Science**

### New Course

POLS 4840	Regulatory Politics Effective Fall 2012	3 cr.
POLS 6215	Seminar on Comparative Grand Strategies Effective Fall 2012	3 cr.

Nancy Mesner moved to approve the business of the College of Natural Resources. Darrin Brooks seconded; motion approved.

## **College of Natural Resources**

### **Department of Watershed Sciences**

#### New Course

WATS 6260	Watershed Sciences Graduate Student Induction Course Effective Fall 2012	1 cr.
WATS 6850	Geomorphic Change Detection: Restoration Monitoring Effective Fall 2012	1 cr.
WATS 6860	Partnering with Beaver in Restoration Design Effective Fall 2012	1 cr.

#### Prerequisite Change

WATS 4931/6921	GIS Research Projects No prerequisites needed Effective Spring 2013	2 cr.
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Richard Mueller moved to approve the business of the College of Science. Pat Gantt seconded; motion approved.

## **College of Science**

### **Department of Biology**

#### New Course

BIOL 4040/6040	Programming and Database Management for Biologists I Effective Fall 2012	3 cr.
BIOL 4050/6050	Programming and Database Management for Biologists II Prerequisite: 4040/6040 or permission of instructor Effective Fall 2012	3 cr.

### **Other Business**

Tom Bunch moved to approve the request from the College of Agriculture and the College of Natural Resources to create a Sustainable Systems Minor. Noelle Cockett, Dean of the College of Agriculture, presented the information. Wendy Holliday seconded; motion approved pending minor changes. The revised request will be sent to Larry Smith. (see below)

Meeting adjourned 2:30 p.m.

Ed Reeve conducted the meeting.

Cathy Gerber recorded the minutes.

**Institution Submitting Proposal:** Utah State University

**Colleges in Which Program/Administrative Unit Will Be Located:** College of Agriculture and College of Natural Resources

**Lead Departments in Which Program/Administrative Unit Will Be Located:** Department of Landscape Architecture and Environmental Planning (LAEP) in the College of Agriculture and Department of Environment and Society (ENVS) in the College of Natural Resources

**Program/Administrative Unit Title:** Sustainable Systems Minor

**Proposed Beginning Date:** Fall Semester, 2012

**Institutional Signatures:**

Raymond T. Coward, Chief Academic Officer: \_\_\_\_\_

Noelle Cockett, Dean, College of Agriculture: \_\_\_\_\_

Sean Michael, Head, Department of LAEP: \_\_\_\_\_

Chris Luecke, Interim Dean, College of Natural Resources: \_\_\_\_\_

Mark Brunson, Head, Department of ENVS: \_\_\_\_\_

**Program Request – Abbreviated Template**  
**Utah State University**  
**Sustainable Systems Minor**  
**February 15, 2012**

**Section I: Request**

The six departments in the College of Agriculture (ADVS, APEC, ASTE, LAEP, NDFS and PSC) and the three departments in the College of Natural Resources (ENVS, WILD, and WATS) request the creation of a Sustainable Systems Minor. A committee of nine faculty members developed the concept and requirements of the minor outlined herein. These requirements were then reviewed and agreed to by the faculty of the nine departments. Students in any University major can declare the Sustainable Systems Minor at any point in their undergraduate program or (more likely) when they submit their graduation paperwork. Diplomas of students meeting the requirements of the minor will include the title of their degree and “Sustainable Systems Minor.”

Students completing the minor will take 18 credits in six different areas (see Figure 1). Six of the credits are required of all students and covered in two 3-credit courses, specifically Foundations of Sustainable Systems, a lecture course, and Communicating Sustainability, a capstone course. A list of existing classes appropriate for the remaining four areas (Agriculture, Food, and Environmental Systems; Energy and Earth Systems; Water Systems; Social Systems) is provided as Appendix A. Students must take at least one course from each of the four areas. Additional courses appropriate for the four system areas may be developed, identified, or adapted after establishment of the minor.

Landscape Architecture and Environmental Planning (LAEP) in COA and Environment and Society (ENVS) in CNR will serve as the lead departments. As lead departments, LAEP and ENVS will ensure that the required courses are available for students wishing to complete the minor or develop a plan for viable course substitutes that ensure that the goals of the minor are being met in any given year. In addition, LAEP and ENVS will be responsible for offering the required Foundations and Capstones courses, respectively (see below). Departments within COA or CNR will certify on the graduation application that a student within their department has successfully completed the requirements of the minor, whereas LAEP and ENVS will handle the graduation applications for students outside COA and CNR.

**Section II: Need**

For purposes of this minor, sustainability is defined according to the spirit of stewardship and inclusivity of the United Nation’s 1987 Brundtland Commission findings, which held that “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Thus, the Sustainable Systems minor will present concepts in sustainability that can be applied in a system approach, leading to resilience in society’s use of the earth’s land, water and air. In addition, the minor will prepare students to understand how to address the challenge of sustainability in ways that account for the interconnectedness of biological, physical, social and economic systems.

While five land-grant institutions in the western U.S. have established sustainability degrees, only three (Arizona State University, University of New Mexico, and University of Wyoming) offer minors in sustainability and only the latter two reside in a College of Agriculture and/or College of Natural Resources. Within Utah, the University of Utah markets two undergraduate degrees as “sustainability-related”: Civil and Environmental Engineering; and Environmental and Sustainability Studies. The latter is somewhat similar in structure to the USU Sustainability

Systems minor but emphasizes policy decisions on the environment and it is a degree program, not a minor. Westminster University and Weber State University have bachelor's degrees in Environmental Studies, both of which are marketed as "undergraduate degrees in sustainability." In contrast to those degrees, the USU degree specifically links sustainability to water, agricultural, or natural resource management systems – all of which are strengths of Utah State University.

At USU, the Environmental Studies degree in ENVS is designed to offer a broad introduction to human-environmental interactions and prepares students to understand biological, physical, social, and political aspects of natural resource problems and environmental issues. While graduates of the Environmental Studies degree will be able to deliver information to stakeholders on "living more sustainably", the ENVS program is not specifically directed toward sustainability. USU also offers a minor in Climate Change and Energy administered by the Plants, Soils, and Climate Department in COA and includes some of the same courses as the proposed Sustainable Systems minor. However, the Sustainable Systems minor will incorporate sustainability into agricultural and water systems, and specifically require students to understand how sustainability can be applied to biological, physical, and social systems.

During the 2011 USU Spring Career Fair, representatives from 15 companies at the Career Fair were asked to respond on the desirability of students who graduated with a sustainability minor. All potential employers indicated their interest in graduates with this emphasis. In 2010-11, the College of Agriculture had 67 students enrolled in the Interdisciplinary Studies (ITDS) degree. Of those 67 students, 11% designed a program focused on sustainability. Students in several traditional programs in agriculture have also expressed their desire for stronger focus on sustainability to their academic advisors. A survey of 42 students enrolled in an introductory course entitled Professional Orientation for Environment and Society (ENVS 1990) in Fall 2011, found that 22 (52%) hoped to pursue careers related to sustainability in ways that link human and natural systems. This represents a significant shift from past years when most ENVS majors sought careers in land management or environmental protection.

In sum, Utah State University is providing an educational opportunity not currently available to undergraduate students in Utah and in the greater Mountain West. We estimate 20 to 25 students will graduate with the minor each year, with enrollment growing over time.

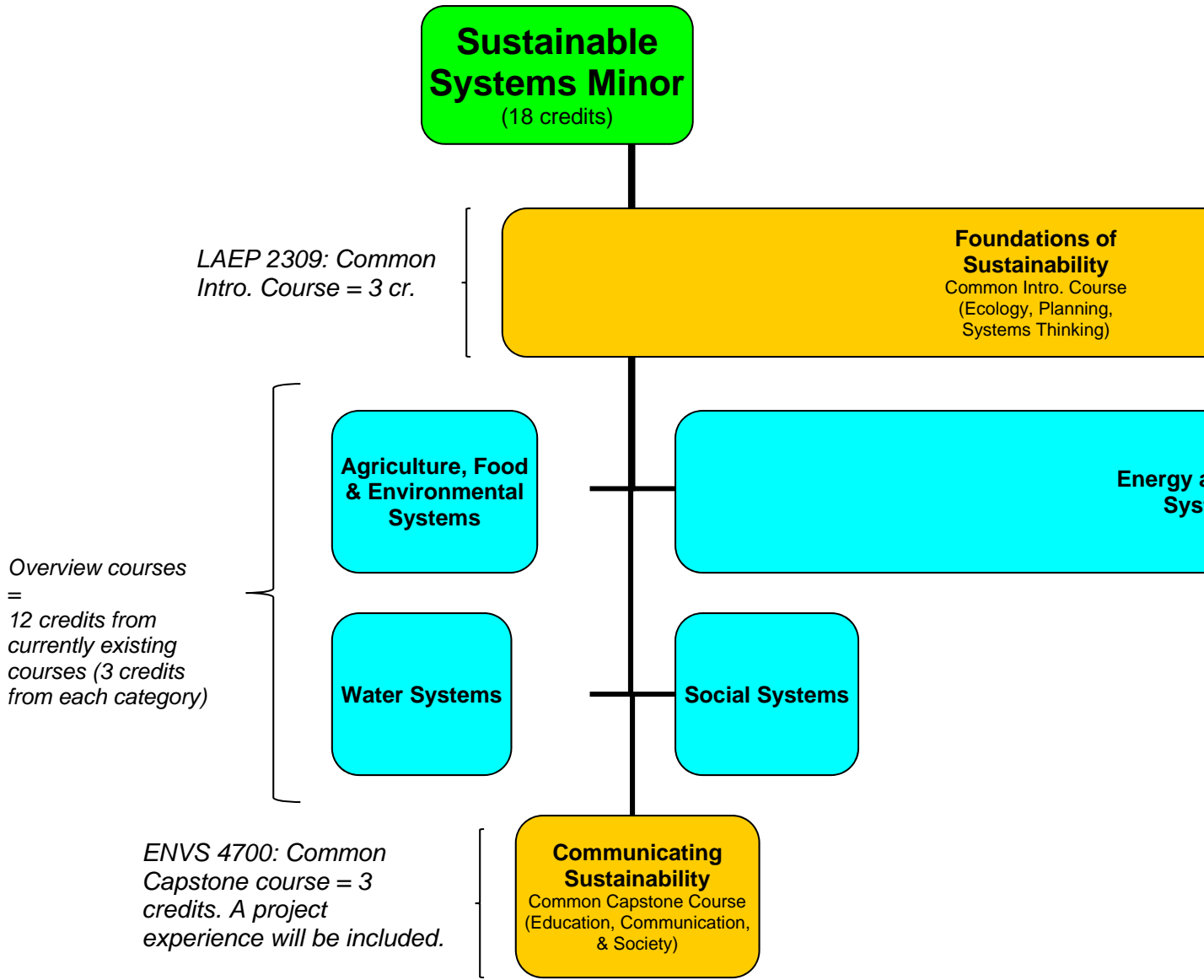
### **Section III: Institutional Impact**

The addition of this minor to USU's educational offering requires no change in administrative structure, no additional faculty, no new physical facilities, no modification or purchase of equipment, and no additional library support. Existing advisors in the Student Services offices of the Colleges of Agriculture and Natural Resources will handle the advising responsibilities of students requesting the minor. The two required courses (Foundations of Sustainable Systems and Communicating Sustainability) have been added to faculty assignments as part of the instructors' teaching load.

### **Section IV: Finances**

The availability of the minor is likely to have no to minimal impact on enrollment in the existing classes. Required courses are assigned as part of load within COA and CNR, with teaching assignments of the faculty involved in the courses adjusted appropriately. Elective courses have been designated because of their availability and appropriateness for inclusion in the minor. Thus, no new funding for this minor is requested.





**Figure 1. Overview of the Proposed Sustainable Systems Minor**

**APPENDIX A**  
**Sustainable Systems Minor Requirements**

**Required Courses (6 credits)**

- LAEP 2039 – Foundations of Sustainability (3 credits)
- ENVS 4700 – Communicating Sustainability (3 credits)

**Agriculture, Food and Environmental Systems:** Select **3 credits** from the following:

- ADVS 5030 – Sustainable Agriculture Production Systems with Animals 3\*
- ASTE 2900 – Humanity in the Food Web (BSS) 3
- ASTE 5260 – Environmental Impacts of Agricultural Systems (CI) 3
- NDFS 1240 – Food Literacy 3
- PSC 2800 – Fundamentals of Organic Agriculture 3
- PSC 4400 – Modern Vegetable Production 3\*
- PSC 5200 – Site-Specific Agriculture and Landscape/Horticulture Management 3
- WATS 1200 – Biodiversity and Sustainability (BLS) 3
- WILD 2200 – Ecology of our Changing World (BLS) 3

**Energy and Earth Systems:** Select **3 credits** from the following:

- GEO/PHYS 3150 – Energy in the 21<sup>st</sup> Century (DSC/QI) 3\*
- LAEP 1030 – Introduction to Landscape Architecture (BCA) 3
- PHYS 1020 – Energy (BPS) 3
- PSC 3820 – Climate Change (DSC/QI) 3\*
- PSC 4820 – Challenges in Climate Change and Energy 3\*

**Water Systems:** Select **3 credits** from the following:

- PSC 2010 – Soils, Water, and the Environment (BPS) 3
- PSC 4000 – Soil and Water Conservation 4
- PSC 4100 – Landscape Water Conservation 2
- WATS 3700 – Fundamentals of Watershed Science (CI) 3
- WATS 4490 – Small Watershed Hydrology 4\*
- WATS 4530 – Water Quality and Pollution 3

**Social Systems:** Select **3 credits** from the following:

- APEC 3012 – Introduction to Natural Resource and Regional Economics (DSS) 3
- ENVS 3010 – Fundamentals of Natural Resource and Environmental Policy 3
- ENVS 3330 – Environment and Society 3
- ENVS 5550 – Sustainability: Concepts and Measurement 3
- ENVS 5570 – Sustainable Living 3
- PHIL 3510 – Environmental Ethics (DHA) 3
- SOC 4620 – Sociology of the Environment and Natural Resources (DSS) 3
- SOC/ENVS 5640/6640 – Conflict Management in Natural Resources (CI) 3

\* Prerequisite or Course Restriction

<b>Courses</b>		<b>Credit Hours</b>
<b>Required Courses</b>	<b>Sub-Total</b>	<b>6</b>
<b>Elective Courses</b>	<b>Sub-Total</b>	<b>12</b>
	<b>Total Number of Credits</b>	<b>18</b>