

Utah State University

DigitalCommons@USU

All Graduate Plan B and other Reports

Graduate Studies

12-2016

Report Detailing the Development of University Articulation Agreements and Course Syllabi Revisions for the Engineering Drafting & Design Technology Program at Salt Lake Community College

Michael Stenquist

Follow this and additional works at: <https://digitalcommons.usu.edu/gradreports>



Part of the [Curriculum and Instruction Commons](#)

Recommended Citation

Stenquist, Michael, "Report Detailing the Development of University Articulation Agreements and Course Syllabi Revisions for the Engineering Drafting & Design Technology Program at Salt Lake Community College" (2016). *All Graduate Plan B and other Reports*. 862.

<https://digitalcommons.usu.edu/gradreports/862>

This Creative Project is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Plan B and other Reports by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



REPORT DETAILING THE DEVELOPMENT OF UNIVERSITY ARTICULATION
AGREEMENTS AND COURSE SYLLABI REVISIONS FOR THE
ENGINEERING DRAFTING & DESIGN TECHNOLOGY
PROGRAM AT SALT LAKE COMMUNITY COLLEGE

by

Michael K. Stenquist

A Plan B paper submitted in partial fulfillment
of the requirements for the degree

of

Master of Science

in

Technology and Engineering Education

Approved:

Edward Reeve
Major Professor

Gary Stewardson
Committee Member

Michael L. Pate
Committee Member

UTAH STATE UNIVERSITY
Logan, Utah

2016

ABSTRACT

This project is an attempt to close the gap between local industry, higher education, and the Engineering Drafting and Design Technology (EDDT) department at Salt Lake Community College (SLCC). As a longtime drafting instructor in the EDDT department at SLCC, a need for change in industry from board drafting, to 2-D CAD, and now to 3-D CAD has occurred. Because of these changes, the program has continually been updated to meet the needs of the students and local industries. The purpose of this project detailed in this report was first, to explore the drafting needs of professionals working in the industry; second, update the SLCC – EDDT curriculum to make sure students are getting prepared with solid drafting knowledge and skills, in order to be better prepared to enter the work force, or go onto higher education. Finally, this project helped to develop articulation plans between SLCC and other universities in Utah (i.e., Weber State University and Utah State University) so that students wishing to continue their studies in higher education could easily transition into their programs.

(83 pages)

ACKNOWLEDGMENTS

I would like to thank the administration at Salt Lake Community College for the opportunity to teach and develop the Engineering Drafting and Design Technology (EDDT) program, and implement needed changes. The administration at Salt Lake Community College has supported and provided me with the resources to make this possible. I would also like to thank local industry leaders who have provided me with valuable information to help me in the development of a new curriculum to meet their needs.

I would like to thank Dr. Ed Reeve of Utah State University for his hard work to help advise and mentor me in this process. He has proven to be a great facilitator and willing to meet and advise me, no matter how many extra hours it took.

I would also like to thank Dr. Gary Stewardson and Dr. Michael Pate for serving on my committee. I would also like to thank the professors that I have taken classes from.

I would also like to thank my family, friends, and neighbors for all their support and encouragement they have given me. I especially want to thank my sweet wife for her support and help in earning this degree.

Michael K. Stenquist

CONTENTS

	Page
ABSTRACT.....	ii
ACKNOWLEDGMENTS	iii
LIST OF FIGURES	vi
CHAPTER	
I. INTRODUCTION	1
Need	1
Purpose.....	3
Terms	4
II. INDUSTRY SURVEY	7
Introduction.....	7
Background Information.....	7
Instrument Development.....	9
Data Collection	10
Findings.....	15
Discussion.....	17
III. SYLLABUS DEVELOPMENT	19
Introduction.....	19
Background Information.....	20
Teaching Philosophy.....	25
Development of a Syllabus Template	27
Implementation of the New Template in EDDT 1040.....	32
Summary	34
IV. HIGHER EDUCATION ARTICULATION	36
Introduction.....	36
Background Information.....	36
Articulation Agreement Development.....	39
Articulation Agreement Implementation	41
Recommendations.....	42

V. CONCLUSIONS.....	43
Purpose.....	43
Phase I – Survey.....	45
Phase II – Syllabus Development	46
Phase III – Articulation.....	46
Conclusion	47
REFERENCES	49
APPENDICES	51
Appendix A: Survey Questions: EDDT 1040	52
Appendix B: SLCC Required Syllabus Statements: EDDT 1040.....	54
Appendix C: Developed Syllabus: EDDT 1040.....	58
Appendix D: SLCC Course Curriculum Outline: EDDT 1040.....	65
Appendix E: Program-Specific Articulation Agreement: Salt Lake Community College (transfer institution).....	70
Appendix F: SLCC Articulation & Transfer Guide and Worksheet for New Course: EDDT 1040.....	74

LIST OF FIGURES

Figure	Page
1. Bottom-up design showing degrees	3
2. Survey results for Question 1: Please identify the industry most commonly associated with your company	11
3. Survey results for Question 2: How many people work in the drafting and design team at your company?.....	11
4. Survey results for Question 3: Please identify the primary software used for drafting and design at your company	12
5. Survey results for Question 4: Please list any other software programs used by your drafting and design team.....	12
6. Survey results for Question 5: Does your company intends to change your current software to meet the future needs of your department?.....	13
7. Survey results for Question 6: Describe your industry’s general design workflow	13
8. Survey results for Question 7: What is the primary skill lacking from your most recently hired employee?.....	14
9. Survey results for Question 8: Which of the following statements is the most identifiable to you and your company?.....	15
10. Diversity in teaching diagram.....	24
11. Bloom’s taxonomy	29
12. Action words for Bloom’s taxonomy	30
13. Comparing course descriptions for articulation.....	41

CHAPTER I

INTRODUCTION

This project is an attempt to close the gap between local industries, higher education, and the Salt Lake Community College (SLCC) Engineering Drafting and Design Technology (EDDT) program. For many years SLCC has changed from board drafting, to 2-D CAD, and now to 3-D CAD; unfortunately, many old and out-of-date ideas and methods have been retained in the curriculum. Local industries and higher education are expecting more rigor in our curriculum. This Plan B Project is an attempt to bring SLCC more into alignment with industry practice and develop an articulation path for SLCC students in higher education.

Need

A need existed to revise curricula and develop higher education articulation plan. At SLCC, there have been many Program Advisory Committee (PAC) meetings on how to help our students over the years and in a particular meeting, the question was asked, “Why are you not hiring our students when they come and interview with you?” As we listened to the people from industry, they told us what qualities they wanted to find in their new employees. With these qualities in mind, the head drafting instructor went to work on formulating a list of skills, both academically and personally, of what industry expects to see in their new employees. The committee noted that many of these new traits can be taught by implementing Problem-Based Learning (PBL) that can be used to help make the curriculum relevant as PBL helps can help student develop the knowledge, skills, and attitudes needed by industry.

In addition to the needs of industry, some students choose a pathway to higher education

and a need existed to develop an articulation plan. Although an existing articulation existed with Weber State University (WSU), they recently changed their Design Engineering Technology (DET) program and the old articulation at SLCC did not meet their current needs.

One of the first challenges of this project was to determine what current software is being utilized in industry. Then came the big problem of deciding what content we should teach and how best to deliver it. Since we did have an articulation agreement in place already with WSU, it presented a problem to make sure that SLCC did not change the curriculum so much, that it did not detour from the existing program already in place. What was found after a lot of investigation was that WSU had changed their program and never communicated these changes to us at SLCC. One of the ways this was found out was when we sent a few of our students to WSU, and there was a problem getting credit for some of their classes which was part of an articulation agreement already in place.

It seemed in the years that I have taught at SLCC that it took students years to earn a degree. Recently, I went to our academic department to talk with them about how SLCC articulates with other colleges and universities. They were very happy to hear that the EDDT department was taking an active part in upgrading their curriculum to meet Salt Lake City's industry's needs. I asked the director about the average time it takes a student to earn an AS or an AAS degree at SLCC. The academic department told me the average time was 3½ years to finish a degree. Working at an institution that advertises as being a 2-year school, something needed to change. To me this means we need to articulate very close and have a good working partnership with other institutions. This prompted me to contact WSU, to work and fix this misalignment.

As the faculty in the EDDT program at SLCC - saw this problem, we decided that we

needed to make sure all our certificates and degrees are aligned where they should be. We created this diagram (see Figure 1), that shows the bottom up design of the pathway of degrees offered at the SLCC. Each succession is 100% articulated with the preceding one. The School of Applied Technology (SAT) program is a 600-hour program that leads to our 1-year certificate, which in turn leads to our AAS degree, which in turn leads to our AS degree. The hope is to go from our AS degree to the Design Engineering Technology (DET) program at WSU, or any other university of the student's choice.

Purpose

The primary purpose of the Plan B project was to develop a template that can be used to develop course syllabi that represents the current thinking of industry practices in the Salt Lake City area.

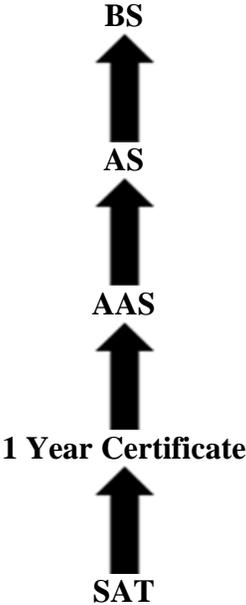


Figure 1. Bottom-up design showing degrees.

To achieve the goals of the project, it was divided into four phases. These phases are detailed in Chapters II, III, and IV of this report.

Phase 1 – Using an independent study project (e.g., a questionnaire to industry to find out about their drafting needs) to help inform the development of the revised drafting curriculum.

Phase 2 – Develop a curriculum template guide which will include important items such as: Name, Descriptions, Goals, Objectives, Units, and Lesson Plans, etc.

Phase 3 – Create a document that will show an articulation plan between Utah State University, and Weber State University, and Salt Lake Community College.

Phase 4 – Develop a revised course at SLCC (i.e., EDDT 1040, Introduction to AutoCAD) course using the new template and test this in an actual class that occurred in January 2016.

Terms

Articulation – an agreement that shows the pathway between two or more colleges, or universities and their academic programs.

Associate of Applied Science (AAS) – a degree designed for students who intend to enter the workforce upon graduation from their program.

Associate of Science (AS) – a degree which is designed primarily to transfer to another educational institution.

Certificate – a document attesting to the fact that a person has completed an educational course, issued either by an institution to a student not qualifying for a diploma. A stepping stone for an AAS Degree.

Career & Technical Education (CTE) – Education which provides students with the necessary skills to succeed in the skilled trades, technology related professions, and overall career preparation.

Engineering Design – a series of interactive problem solving steps, often used when designing, building, and testing a product or new idea.

Engineering Drafting and Design Technology (EDDT) – the program at Salt Lake Community College which prepares students with entry level skills for drafting and design technology careers, and also to further their education at another learning institution.

Global Curriculum – is an outline to approach everything we teach and how we teach it. It broadens horizons and encourages exploration of subjects with a global perspective. It also helps teach our understanding of the world.

Instructional Design (ID) – is the development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the process of analysis of learning needs and goals and the development of a delivery system to meet those needs.

International Technology and Engineering Educators Association (ITEEA) – the association which focuses on improving technology education.

School of Applied Technology (SAT) – provides students attending SLCC with the technical education and career training necessary for them to get a meaningful job.

Survey Research – a method of investigation that uses questions based on statistical surveys to collect information about how people think and act.

Syllabus – an outline or a summary of the main points of a text lecture, or course of study.

Vocational Rehabilitation (VR) – providing training in a specific trade with the aim of gaining employment.

CHAPTER II

INDUSTRY SURVEY

Introduction

Prior to starting the Plan B project, an independent study was completed. The purpose of the independent study project was to contact local industries in the Salt Lake City, Utah area to see what their drafting needs are and get a feel for what CAD software they are currently using. In this independent study, 18 different companies ranging from steel detailing, mechanical, controls, medical, architectural, recreation, and public services were contacted and interviewed in person. In addition, I also contacted the state office of education to see the direction they are taking for CTE drafting programs in the state. To collect my data, I talked and interviewed with the state CTE director, and collected information from local industries from person-to-person interviews and a survey that consisted of eight questions (see Appendix A).

Background Information

In the independent study project, a survey was developed and it required a good review of literature to learn how to develop surveys. The first item learned was that it is important to beware of bias (e.g., gender and racial bias) when developing a survey. In working with my PAC (Program Advisory Committee) advisors at the college, and other professionals, we developed eight questions (see Appendix A) to ask drafting professionals about the practices they currently use.

The Merriam-Webster Dictionary defines a survey as: To ask (many people) a question

or a series of questions in order to gather information about what most people do or think about something. To look at and examine all parts of (something). A survey can also collect information about feelings, values, and preferences.

In developing the survey instrument, “How to Conduct Surveys – A Step-by-Step Guide,” by Arlene Fink (2017), was reviewed to provide guidance. Important in this publication were three specific reasons (shown below) why we conduct surveys.

- Reason 1. A policy needs to be set or a program must be planned.
- Reason 2. You want to evaluate the effectiveness of programs to change peoples’ knowledge, attitudes, health, or welfare.
- Reason 3. You are a researcher who uses a survey to get information about how to guide studies and programs. (Fink, 2017, p. 2)

In the development of the survey for this project Wyse (2012) discussed reasons to develop surveys and this information was considered. Wyse, (2012) identified four different reasons to do surveys.

1. *Uncover the Answers:* In a non-intimidating survey environment, you will learn about what motivates survey respondents and what is important to them, and gather meaningful opinions, comments, and feedback. A non-intimidating survey environment is one that best suits the privacy needs of the survey respondent. Respondents are more likely to provide open and honest feedback in a more private survey method. Methods such as online surveys (<http://www.snapsurveys.com/software/us/#1>), paper surveys, or mobile surveys (<http://snapsurveys.com/software/us/#3>) are more private and less intimidating than face-to-face survey interviews or telephone surveys.
2. *Evoke discussion:* Give your survey respondents an opportunity to discuss important key topics. Communicate with your respondents about your survey topic. This allows you to dig deeper into your survey, and can incite topics related to your survey within a broader perspective.
3. *Base decisions on objective information:* Conducting surveys is an unbiased approach to decision-making. Don’t rely on “gut feelings” to make important business decisions. You can collect unbiased survey data and develop sensible decisions based

on analyzed results. By analyzing results, you can immediately address topics of importance, rather than waste time and valuable resources on areas of little or no concern.

4. *Compare results:* Surveys (<http://www.snapsurveys.com/software/>) results provide a snapshot of the attitudes and behaviors – including thoughts, opinions, and comments – about your target survey population. This valuable feedback is your baseline to measure and establish a benchmark from which to compare results over time.

Instrument Development

Part of creating a survey is to ask questions like: What is my reason for creating and running this survey? How do I want to collect and document the survey results? And, what will I do with the results?

In developing the survey instrument, a review of literature on survey development was conducted to find best practices. Advice from Hampton and Vilela, (2016) was considered; specifically, their review of reasons to conduct a survey with advantages and disadvantages of written surveys.

When Should You Conduct A Survey? A Survey May Be Your Best Choice When:

- You need a quick and efficient way of getting information
- You need to reach a large number of people
- You need statistically valid information about a large number of people
- The information you need isn't readily available through other means

Written surveys: Pros and Cons

Advantages of written surveys:

- Large numbers of people can give their input
- Low Cost
- People can respond at their convenience
- Avoids interviewer bias
- Provides a written record
- Easy to list or tabulate responses

- Wide range of respondents
- No training needed as with interviewing

Disadvantages of written surveys:

- Often has low return rate
- Limited alternative expression of respondent's reaction
- Depends on the selected sample
- May not truly represent of the whole group
- Respondent may skip sections. (Hampton & Vilela, 2016)

When developing a survey, it is important to decide if you want your questions to be open-ended, or closed-ended. For example, "What do you feel is the most important quality or attribute that a potential employee should have?" this would be an open-ended question because it requires more than a yes or no response. An example of a closed ended question would be: "How many employees do employ at your company?" In this situation, a Likert scale can be used to rate the items on a scale of 1-5. The following is an example of a Likert scale where 1 is strongly disagree and 5 is strongly agree.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Undecided
- 4 = Agree
- 5 = Strongly Agree

Data Collection

In the independent study, an eight-question survey was developed to assess the needs of those working in the drafting industry. A convenience sample of 18 different companies who use drafting in the Salt Lake City area was contacted and interviews were set-up with them. All those that were contacted agreed to participate in the survey. The questions asked in the survey and the findings related to those questions are shown in Figures 2-9. The findings of the survey were

Companies 1 thru 18	Steel	Mechanical	Controls	Medical	Architectural	Recreation	Manufacture	Transportation	Public Services
1	X								
2	X								
3		X							
4	X	X							X
5	X								
6		X					X		
7			X						
8				X					
9				X					
10		X	X						
11				X					
12						X	X		
13	X							X	
14	X						X		
15									X
16				X					
17	X								
18		X					X		

Figure 2. Survey results for Question 1: Please identify the industry most commonly associated with your company.

Companies 1 thru 6	Number of people working	Companies 7 thru 12	Number of people working	Companies 13 thru 18	Number of people working
1	21	7	3	13	10
2	6	8	6	14	2
3	4	9	12	15	5
4	24	10	12	16	3
5	6	11	5	17	5
6	6	12	5	18	20

Figure 3. Survey results for Question 2: How many people work in the drafting and design team at your company?

Companies 1 thru 18	Inventor	AutoCAD	Solid Works
1	NI	P	S
2	S	P	NI
3	NI	S	P
4	P	S	NI
5	P	S	NI
6	P	S	NI
7	NI	P	NI
8	NI	S	P
9	NI	P	S
10	NI	P	NI
11	NI	S	P
12	NI	S	P
13	NI	P	NI
14	NI	S	P
15	NI	P	NI
16	NI	S	P
17	NI	P	NI
18	P	S	S

KEY
P = Primarily Used
S = Limited Use
NI = Not Installed

Figure 4. Survey results for Question 3: Please identify the primary software used for drafting and design at your company.

Companies 1 thru 18	Other software used
1	Tekla
2	No Plans on Changing
3	ORCAD / ALTIUM
4	PRO-E
5	EXCEL
6	REVIT
7	EXCEL
8	ALTIUM / EXCEL
9	PRO-E
10	REVIT
11	AutoCAD / EXCEL
12	EXCEL
13	MICROSTATION / CIVIL 2-D / INROADS
14	EXCEL
15	CIVIL 3-D
16	PADS / ORCAD
17	REVIT
18	EXCEL

Figure 5. Survey results for Question 4: Please list any other software programs used by your drafting and design team.

Companies 1 thru 6	Yes	No	Companies 7 thru 12	Yes	No	Companies 7 thru 12	Yes	No
1	X		7		X	13	X	
2		X	8		X	14	X	
3	X		9	X		15	X	
4	X		10	X		16	X	
5		X	11	X		17	X	
6		X	12	X		18	X	

Figure 6. Survey results for Question 5: Does your company intends to change your current software to meet the future needs of your department?

Companies 1 thru 18	Industry's general design workflow	
	A	B
1	X	
2	X	
3		X
4	X	
5	X	
6	X	
7	X	
8	X	
9	X	
10	X	
11		X
12	X	
13	X	
14	X	
15		X
16		X
17	X	
18		X

WORKFLOW KEY
A = Turn-Key Product
B = Build to Order Product

Figure 7. Survey results for Question 6: Describe your industry's general design workflow.

Companies 1 thru 18>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1) Understanding of drafting principles, and procedures.	X				X					X								
2) Ability to use 2-D and 3-D software.	X	X		X		X		X	X				X		X		X	X
3) A quick learner, can take directions, and follow through with an assignment.	X	X	X	X	X		X	X		X		X				X	X	X
4) Safety Conscious	X	X			X						X			X			X	X
5) Ability to manage time.						X					X			X	X	X		X
6) Strong communication Skills and the ability to work by one's self, along with a team.				X				X				X		X	X			X
7) Understanding of drawing standards.			X	X				X				X						X
8) Strict attention to detail.				X		X			X	X	X		X			X	X	X
9) Ability to read, comprehends, write, and speak English.	X			X					X						X			X
10) Excellent interpersonal skills.						X		X										
11) Skilled in spatial visualization and reverse engineering.												X						X
12) Superior problem solving and critical thinking skills.		X					X			X	X	X				X		
13) Ability to manage priorities, adjust work schedules, and still meet deadlines.					X						X		X		X			
14) Be enthusiastic, able to learn, and function with minimal direction.	X		X	X		X	X				X	X		X		X	X	X

Figure 8. Survey results for Question 7: What is the primary skill lacking from your most recently hired employee?

Companies 1 thru 9	A	B	Companies 10 thru 18	A	B
1	X		10	X	
2		X	11		X
3	X		12	X	
4		X	13		X
5		X	14		X
6		X	15		X
7	X		16	X	
8		X	17		X
9		X	18	X	

Figure 9. Survey results for Question 8: Which of the following statements is the most identifiable to you and your company? A) I would prefer my new hires to know as much as possible about **my industry** and work-flows at the expense of **education about software tools**. B) I would prefer my new hires to know as much as possible about **software tools** at the expense of education about my **industry and workflows**.

used in the development of all the articulation agreements and syllabi revisions.

Findings

The independent study project was useful and integral to this project as the data collected was important in developing the articulation agreements and revised course syllabi and curriculum. The following findings were used to guide articulation development and syllabus revisions. Major findings from the survey showed:

1. Most of the companies were from the steel and mechanical industries.
2. Of the 18 companies, three companies have more than 20 CAD related employees, three companies employed between 10 and 20 CAD related individuals, and 12 companies employed less than 10 CAD related employees.
3. Of the 18 companies, eight use AutoCAD as primary software, six used Solid Works, and four used Inventor.

4. There are six companies that used excel as supplemental software to the CAD.
5. Thirteen of the 18 companies' surveyed were willing to change their software if something else better came along.
6. Thirteen of the 18 companies were included in a turn-key operation. A **turn-key** is a type of project that is constructed so that it could be sold to any buyer as a completed product. In comparison a **build-to order** is where the contractor or company builds an item to the buyer's exact specifications, or when an incomplete product is sold with the assumption that the buyer would complete it. Twelve of the 18 companies are turn-key, and six are Build-To order.
7. The top four qualities employers wanted in an employee are: (1) A quick learner who can take directions and follow through with an assignment. (2) To be enthusiastic and able to learn and function with minimal direction. (3) Ability to use 2-D and 3-D software. (4) Strict attention to detail.
8. Eleven of the 18 companies wanted employees who know more about the software and seven wanted employees who knew more about their industry, feeling they could teach the software.

The State of Utah has a vision where Drafting, CAD, and other related CTE programs should be heading in the future. They did their own survey 5 years ago to see what the current industry is doing. They found that the vast majorities were doing 2-D drafting and very few were actually involved in 3-D. Dave Milliken (State of Utah CTE Specialist) said that 6 months ago they did another survey and found just the opposite. Very few companies were just doing 2-D drafting. I asked him what most of the districts were using as CAD software. Milliken said that

Solid Works is by far used more, but that Autodesk Inventor is making a comeback. This falls in line with what I found out from many CTE instructors in the Salt Lake City schools, as I made concurrent enrollment visits.

The companies that I contacted ranged from one to twelve people in their design team. Much of the attitudes about software depended on the age of most of the employees. The older they were the more reluctant they were to change. Many of the older employees over 50 years old said that 2-D is so much better and faster than 3-D and they were not going to change without a fight.

In asking about the software they were using I got some interesting comments. They were saying that they wanted AutoCAD experience, when what they really wanted was 3-D experience. Many of them are using Solid Works just because the new and younger employees know it and have pushed it. I also found it interesting that they would change software if there was something better.

Discussion

The overall objective in this project is to develop a curriculum, including syllabi that meets the needs of industry and will prepare students and others to succeed. The independent study project helped to identify the needs of industry and the findings were incorporated into this project.

An important part the Independent Study project was to survey the drafting needs of industry, and this was an enjoyable experience. It taught me so much about how different companies design differently and what is important to them. It helped to create an ownership in

our program. It was no longer my program, it was “our” program and industry started to take ownership in it also.

I also found out how hard it is to write a survey. The things I had learned from several of my masters’ classes are correct. Writing without bias is hard. It was not until I actually put to use what I had been taught, that I ended up with a good survey. I learned that the length, number of questions, and how you ask them play a huge part in the success of a survey. I do have to admit that I went through three revisions before I came up with the survey to use. It was easy for me to get rid of a lot of bias, but the hard one, was gender bias. With all the new laws, I found this one very hard. I feel that my survey was a success because of the input from many others from local industry before I sent it out.

As I communicated with team leaders from companies, I was able to show them that I was concerned and really wanted the best for my students and also to provide the best prepared students for future jobs. This has also involved a few field trips that I was able to take my students on.

The collection of my data was easy since I did it in person, which resulted in 100% participation. I have actually met with a few companies after I had collected all the information and shared with them the findings. I have also shared my findings with my deans at the college and they are excited and supportive in what I am doing.

Based on the finding in the survey, I found that I would have been right on about 80% of what I felt should be covered in the drafting curriculum. After collecting the data from this survey, I feel confident that what I am teaching is 100% in line with local industries wants and needs.

CHAPTER III

SYLLABUS DEVELOPMENT

Introduction

In order to develop articulation agreements, curricula between higher education partners must align. An important part of the curriculum is the syllabus, and in order for students to transfer to another higher education institution, what they learn in one institution must align with what is being offered in a partner university. This alignment helps students who attend SLCC and want to further their education, for example, in the mechanical and manufacturing fields. It also provides verification of the program and what classes other universities (e.g., USU and WSU) will accept for transfer credit.

With a revised curriculum and solid articulation agreements, SLCC can take their drafting programs to the public schools and present it to their students, counselors, and parents to let them know that there is a viable pathway in place for their son or daughter to go from high school, to college, and then to an accredited University to actually earn a bachelor's or higher degree. At SLCC, we encourage all of our students to use the program at SLCC as a stepping stone to higher education.

Once the data was collected from the survey, a SLCC course (i.e., EDDT 1040) was revised to reflect the needs of industry, based on the findings from the survey. I then proceeded to teach a class with the new objectives from industry.

In delivering the class using the revised syllabus, it was very easy to teach the required knowledge and skills (i.e., using the computer and associated software) because it was similar to

the knowledge and skills previously taught. However, the revised syllabus now included objectives that industry said they wanted in new employees. Many of these qualities focused on effective behavior, and it was challenging to change student attitudes. To meet this challenge, whenever possible, outside resources were brought in, (e.g., engineers, or industry personnel) to talk to my students. When students hear from people working in industry the exact same ideas that you are teaching them, they realize that you have a partnership with industry and they want to listen to you as the expert. By doing so, it makes teaching much more exciting and rewarding.

Background Information

Those involved in higher education must develop good curricula, and syllabi, as it helps to develop an effective learning environment and it is very helpful when developing articulations with other colleges and universities. In this project, a brief review of the literature on curriculum development, shown below was conducted to help inform this project.

Curriculum can be developed using effective instructional design. In the article, “Instructional Design” (Smith & Ragan, n. d.), it discusses instructional design and the importance of it.

The term *instructional design* refers to the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation. An instructional designer is somewhat like an engineer. Both plan their work based upon principles that have been successful in the past – the engineer on the laws of physics, and the designer on basic principles of instruction and learning. Both try to design solutions that are not only functional but also attractive or appealing to the end-user. (p. 2)

Since we live in a global society, it is even more important for educators to plan and develop good curriculum. In the article entitled, “*A Global Curriculum? Understanding*

Teaching and Learning in the United States, Taiwan, India, and Mexico” Sparapani, Perez, Gould, Hillman, and Clark (2014) discussed the concept of a “global” curriculum and described it as,

...widening one’s perspective to look beyond ways in which one teaches (or the ways typical of the particular location/cultural norms) and tries to understand alternative perspectives on curriculum as “what gets taught and how.” For us, then, a “global” curriculum is a concept that is symbiotic with a cosmopolitan community. As we discuss our work (based on our perspectives of what we learned about mathematics, science, and technology from the various countries, and seeking commonalities within our experiences), we sought to see global curriculum as possessing an inclusive ethics, a shared philosophical relationship or structure that encompassed not just different regions, but nations, and, in our cases, people who experience education through schooling. (p. 2)

In 1983, the national report, “A Nation at Risk,” stated that students in the U.S. have fallen behind students in other countries in math and science proficiency. Sparapani et al. (2014) noted,

If we were “at risk” in 1983, we are at even greater risk now. The rising demands of our global economy, together with demographic shifts, require that we educate more students to higher levels than ever before. Yet, our education system is not keeping pace with these growing demands. (p. 4)

To help improve education, most professional educational associations have developed national content standards that identify what students need to know and be able to do in a particular area of study. These standards can be used to develop effective curricula, for example the International Technology and Engineering Educators Association (ITEEA) developed standards for technological literacy (ITEEA) and these standards can be used to develop courses based on sound goals and objectives.

The development of a new curriculum is an ongoing process. You move from evaluating the present program, design a new program, implement the new program, and then revise it again to keep up with current trends and needs. It is also a guide that provides goals, philosophy,

objectives, learning experiences, and instructional resources. As Wentzell (2006) notes, this guide should accomplish the following,

A curriculum guide is a structured document that delineates the philosophy, goals, objectives, learning experiences, instructional resources and assessments that comprise a specific educational program. Additionally, it represents an articulation of what students should know and be able to do and supports teachers in knowing how to achieve these goals.

Accordingly, an exemplary guide is a tool that assists in planning and implementing a high quality instructional program. It:

- establishes a clear philosophy and set of overarching goals that guide the entire program and the decisions that affect each aspect of the program;
- establishes sequences both within and between levels and assures a coherent and articulated progression from grade to grade;
- outlines a basic framework for what to do, how to do it, when to do it and how to know if it has been achieved;
- allows for flexibility and encourages experimentation and innovation within an overall structure;
- promotes interdisciplinary approaches and the integration of curricula when appropriate;
- suggests methods of assessing the achievement of the program's goals and objectives;
- provides a means for its own ongoing revision and improvement; and
- provides direction for procurement of human, material and fiscal resources to implement the program.

The formulation of such a school or district curriculum guide should not be viewed as the culmination of the curriculum development process, but rather as an essential step in the process of ongoing curriculum development and implementation. (Wentzell, 2006)

There is no such thing as a perfect curriculum guide, including the syllabus contained in it. It is always an ongoing process. For a curriculum to be effective, it must be accepted and reviewed by others. In the EDDT program at SLCC, this acceptance is done by other peer educators, and also local industry leaders.

No curriculum guide will be free from criticism. However, to be effective, a guide must earn acceptance by teachers and must be deemed educationally valid by parents and the community at large. This acceptance will be far easier to attain when the curriculum guide is:

- consistent with what is known about child growth and development;
- compatible with the general philosophy of the school system;
- based upon clear convictions about teaching and learning;
- representative of instructional activities to meet the needs of students with varying abilities and needs;
- articulated from kindergarten through grade 12;
- easy to use by all educators;
- filled with samples, examples, and suggested resources;
- developed collaboratively by a broadly-based committee of teachers and other interested stakeholders; and
- linked to teacher evaluation goals and professional development. (Wentzell, 2006)

The curriculum is a complex structure, made up of many diverse and interacting parts. A diagram shows this interaction (see Figure 10) was used to guide the curriculum developed in this project, as it shows how formal education, informal education, education for life, and

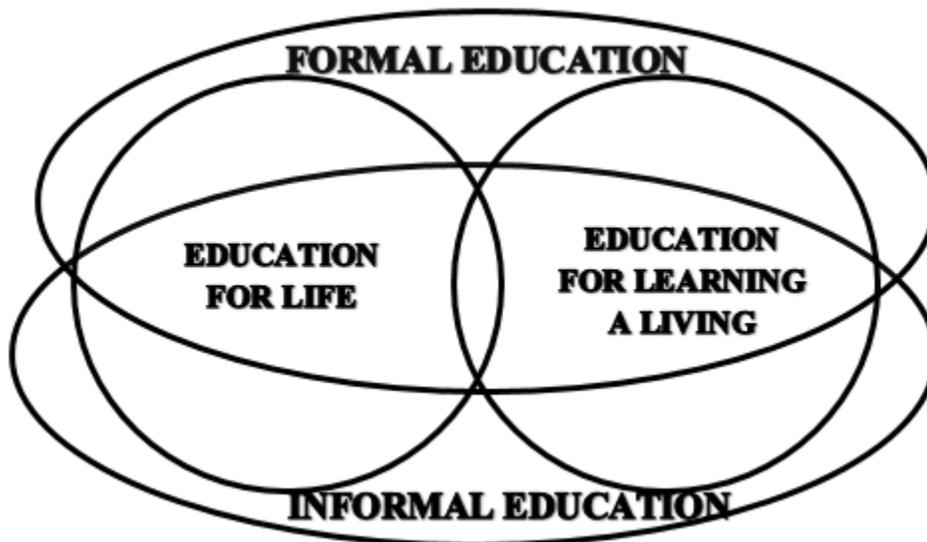


Figure 10. Diversity in teaching diagram.

education for earning a living all work together (Roberts 2015).

A well-designed curriculum follows a logical sequence. Based on the review of literature, the following sequence of steps for developing the curriculum were developed and followed.

1. *Planning* – This comes from a need. If something does not work like it should, plans should be made to change it.

2. *Preparing* – This is the process of collecting current data to assist you in making a change. In the efforts to change curriculum, using a survey to help collect vital information to assist in the necessary change or changes.

3. *Designing* - This is the process of developing an outline of goals, objectives, learning experiences and instructional resources.

4. *Developing* – This is the process of actually assigning tasks to specific objectives. During this phase, it is very important to be in constant contact with industry and educational leaders.

5. *Implementing* - This is the process of actually putting it to the test during a class. You need to make sure to take notes and document feelings, attitudes and changes you feel are important. The main thing is to be open-minded.

6. *Evaluating* – This can be done on many different levels. It is important for students to give their input and feelings. It is also important to have a peer come in and evaluate the lesson plan as you teach it. It is also, important to report back to industry leaders to keep them in the loop.

7. *Revising* – Once you get your evaluations back and go over your notes, update where you feel there are holes and make it into a more global curriculum.

8. *Improving* – Curriculum should always be in a changing mode. As you learn new processes or methods, implement them immediately, and do not wait until the next semester. The important thing is to document your changes so you can update your curriculum.

Teaching Philosophy

Good teaching requires that instructors have a sound philosophy that guides them in their teaching approaches and how their students succeed in their classroom. As this project focusses on teaching and learning, I felt it was important to state my teaching philosophy, as it is included in my course syllabi. Shown below is this teaching philosophy.

I believe that through education, a student will receive the necessary tools and skills, to help him or her to be successful and prosperous in our economy. Within our classrooms, we should encourage our students to solve problems, much like the ones they will encounter in the workplace, and also to use problem solving skills to solve everyday problems in their lives. I

believe that as an instructor, it is my responsibility to create a learning environment where students can feel safe and free to express themselves, and where it is okay to learn from our mistakes.

My decision to be an instructor is in part, due to a desire to make a positive impact on the lives of my students. I am here for all my students and will do anything to help and encourage them to perform at their highest potential.

My teaching style is one that includes a variety of techniques and learning strategies. I feel that the Project-Based Learning (PBL) is important to prepare students for the future. I also feel that team building is critical in the learning process. I know that each student is different and I might need to modify how I teach to get through to that one student. I feel that all students can be successful and build academic success and self-esteem during the learning process. Learning occurs when a student is able to be engaged in the learning process, can contribute and make a personal connection, and is able to apply his or her learning to real world, everyday problems. When this happens, students are willing to get more involved in other lessons and projects. There is a quote that I really like, that has been used in education since the 1960s, it goes like this, *“Tell me and I forget, teach me and I may remember, involve me and I learn.”* It is not known exactly who said these particular words, because it has changed over the centuries. The original quote came from a Chinese Confucian philosopher Xunzie (312-230 BC) and it was translated in 1990. *“Not having heard something is not as good as having heard it; having heard it is not as good as having seen it; having seen it is not as good as knowing it; knowing it is not as good as putting it into practice”* (Popik, 2012).

I like to build meaningful relationships with my students and promise to go the extra mile

in helping my students succeed. I encourage an open, honest, and respectful relationship and will accept anyone as they are. I have made a commitment to work as hard as is necessary, and spend as much time with students, to make them successful, both academically and emotionally.

To conclude, my goal as an instructor is to instill in each student, a passion for learning, and provide an educational environment that is encouraging and positive. I hope to provide the skills and tools necessary for success and foster the individual talents of each student, while at the same time, helping each student to fulfill their dreams and be successful in whatever they pursue.

Development of a Syllabus Template

To an instructor, the syllabus is an invaluable tool to give to the students. It is the facilitator's roadmap to follow. For the student, it gives him or her all the information for them to be successful in a course. It lets students know exactly what assignments, quizzes, tests, and any other information that could affect their outcome and grade. The one thing that needs to happen at the college is to build rigor (i.e., making our curriculum comparable to our higher education counterparts) into our program. Sometimes people view a community college as a glorified high school. If at a college, we want to show our partnership with a higher education institution, we need to step up the requirements in our courses to meet the needs of articulating students to another institution.

At SLCC, we have been told to make our syllabuses more than just an outline of what we will be teaching. The college wants it to be a document to provide information about general education classes, articulation, college and class rules, and much more. Appendix B contains

SLCC's requirements for developing a syllabus.

I feel that a very important part is the section dealing with Office Hours. We need to have office hours that fit our students' schedule, and then keep them. We should be encouraging our students to come to our office, if nothing more to visit and advise them. Students have Academic Advisors, but it is very helpful to come and visit with the instructors who are involved in developing and teaching the courses. I also feel that this is a great opportunity for an instructor to teach students how to interview. I have had many students go out on interviews and not get the position because of how they came across during the interview. In this setting, you can have mock interviews and give pointers to help students be successful.

I personally feel the "BIG" Idea about a syllabus is it helps you know that you have given the student everything they need to know (e.g., the course objectives) and what your expectations are of them so that they cannot go to a Dean and say, "I was never told this or that." Being a coordinator for the Engineering Drafting & Design Technology Program at SLCC, I have seen this happen often. It is easier to work with a student when he or she knows they did not live up to the contract or syllabus. This way students' feel that you are on their side and want to see them succeed.

Something that I do during the semester is to modify the curriculum and syllabus when new and important changes occur in industry. As teachers know, all classes are not the same and students' progress at different rates. My philosophy is that when a student is enrolled in my class, if they can do the work in only half the class period, I am not giving them enough rigor. I have never had a student say no when I modify and add additional work for them to do in the course to help in their understanding of the material.

I would also like to say a little about content. I change my required drawings every semester. If I am working on a project for a company, or working with investors on a new product, I will put similar assignments in my syllabus. They achieve the same objectives, but are current and not outdated. The syllabus is a work in progress, constantly changing!

In order to develop a well outlined syllabus, you need to have a solid understanding of the course content along with different teaching strategies, needs and objectives. Since we live in a global society, it is very important to understand different cultures and how people with different learning abilities learn.

The first thing considered when writing the course syllabus was Bloom's Taxonomy. The revised model (see Figure 11), describes the six categories. It is important for educators to use this model as they develop new instructional material and appropriate course objectives. In CTE, the goal was to develop curricula at the applied level. Furthermore, when developing objectives, this project strived to use "action words" (see Figure 12) when designing the objectives.

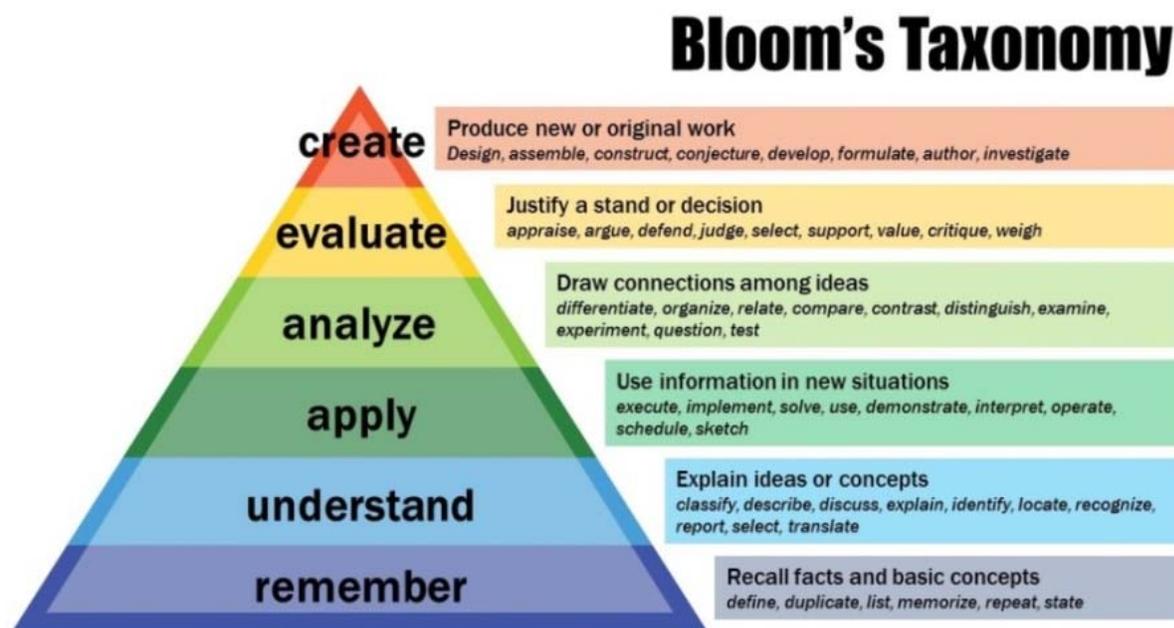


Figure 11. Bloom's taxonomy (Armstrong, n.d.).

Action Words for Bloom's Taxonomy					
Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose create
describe	interpret	illustrate	classify	evaluate	plan
label	paraphrase	modify	contrast	order	combine
list	summarize	use	distinguish	appraise	formulate
name	classify	calculate	infer	judge	invent
state	compare	change	separate	support	hypothesize
match	differentiate	choose	explain	compare	substitute
recognize	discuss	demonstrate	select	decide	write
select	distinguish	discover	categorize	discriminate	compile
examine	extend	experiment	connect	recommend	construct
locate	predict	relate	differentiate	summarize	develop
memorize	associate	show	discriminate	assess	generalize
quote	contrast	sketch	divide	choose	integrate
recall	convert	complete	order	convince	modify
reproduce	demonstrate	construct	point out	defend	organize
tabulate	estimate	dramatize	prioritize	estimate	prepare
tell	express	interpret	subdivide	find errors	produce
copy	identify	manipulate	survey	grade	rearrange
discover	indicate	paint	advertise	measure	rewrite
duplicate	infer	prepare	appraise	predict	role-play
enumerate	relate	produce	break down	rank	adapt
listen	restate	report	calculate	score	anticipate
observe	select	teach	conclude	select	arrange
omit	translate	act	correlate	test	assemble
read	ask	administer	criticize	argue	choose
recite	cite	articulate	deduce	conclude	collaborate
record	discover	chart	devise	consider	collect
repeat	generalize	collect	diagram	critique	devise
retell	give examples	compute	dissect	debate	express
visualize	group	determine	estimate	distinguish	facilitate
	illustrate	develop	evaluate	editorialize	imagine
	judge	employ	experiment	justify	infer
	observe	establish	focus	persuade	intervene
	order	examine	illustrate	rate	justify
	report	explain	organize	weigh	make manage
	represent	interview	outline		negotiate
	research	judge	plan		originate
	review	list	question		propose
	rewrite	operate	test		reorganize
	show	practice			report
	trace	predict			revise
	transform	record			schematize
		schedule			simulate
		simulate			solve
		transfer			speculate
		write			structure
					support
					test
					validate

Figure 12. Action words for Bloom's taxonomy (Center for University Teaching, Learning, and Assessment (2015)).

In addition, the syllabi developed in this course, followed the advice of Choudhury (2014), who noted the following:

In order to design an effective syllabus, the course designer has to take various factors into consideration. Need analysis of that particular group of students for whom the syllabus is framed should be made. Teaching methodology should be carefully tailored to suit the needs of the students. (p. 154)

There are many components critical to developing a good syllabus. SLCC has developed guidelines for developing a syllabus. In this project, the following items were included:

- Name of learning institution.
- The department.
- Course name
- Semester
- Instructor name, e-mail, office number, and phone number.
- A vision, mission, and values statements.
- Consultation Hours
- Required Course Materials
- Textbook
- Course Description
- Course Focus
- Prerequisites
- Course Learning Outcomes
- Learning Outcome from Course Curriculum Outline
- Syllabus
- Attendance Policy
- Disability Act
- Incomplete grade and withdraw information
- Electronic Devices
- Classroom Recordings
- Missed Due Dates
- Student Code of Conduct
- Emergency Evacuation Procedures
- Grading Scale
- Weekly Schedule
- General Education ePortfolio
- Transfer / Articulation Information
- General Education Statement
- College – Wide Learning Outcomes

Implementation of the New Template in EDDT 1040

Developing the new syllabus for this course was aided by the fact that at SLCC, all instructors were told in January 2016 to update their syllabi and were told many of the things which should be included in it. For a list of school requirements (see Appendix B). We can add others, but these are required. This was an attempt to get everybody sharing the same information, and eliminating many student complaints.

Now that I have this in place, all I have to do is change my course description, course focus, revised objectives based on the industry survey, and a course outline. The one thing that I did not add into fall 2016 semester syllabus were the qualities employers want. I would talk about them, but since then, I feel it is important to list them. This also shows me that a syllabus is a piece of work in progress. We should be constantly changing and updating the syllabus to make it relevant and meaningful for ourselves and our students. It also helped me place more responsibility on the students. If there were any questions about assignments or policies, I know that it was covered and if I come up with something new, it will be added in for the next semester.

The big thing that actually happened was my students paid more attention to the syllabus. When I would pass them out a syllabus that consisted of only two pages and very little information it was not anything special. With it being six pages now with pertinent information, they seem to pay more attention to it (see Appendix C)

With this document in place, I can now modify any of my syllabuses and they will take on the same format and contain relevant information. I also left off my office hours. I made this a part of our discussion. I wanted all my students to feel they had a part in the schedule of my

office hours, and perhaps would actually use them if I had their input, instead of me telling them when they would be.

Another thing that this new syllabus made possible for me was to talk about SLCC's VISION, MISSION, and the VALUES, that will be incorporated into our class each semester.

Part of my project was to develop a syllabus and try it out in a class. I did this during my EDDT 1040 (Intro to AutoCAD) class during the 2016 Spring Semester. The semester was a great success and found that my students had fewer questions during the class and had a better overall attitude.

As I explained that the syllabus was a contract that they were entering into during the class the students sat up and paid more attention. In fact, I asked at the end of the class, how many still had their original copy and many did have it. Students were encouraged to keep track of their scores and to be more responsible; many did, which was good to see.

An interesting thing happened. I told my students that I was there for them and it was totally up to them what they got out of the class. The students who finished with their work and had some extra time, asked for extra work so they could become more proficient in their skills. I attribute this to a more professional syllabus. By not adding the qualities into my original syllabus, we wrote in the qualities as we talked about them.

One major thing also happened. I had fewer students struggling to finish their work at the end of the class. Having a well laid out plan for every day assignments made it possible to keep up in the class if a student had to be absent for a day.

Giving my students the opportunity to talk to local industry leaders gave them encouragement which showed up in their work and attitudes. Having a well-defined syllabus also

made it easier for me. I would leave a lot of time to go and meet with engineers and designers or go to WSU and meet with their professors to work on this curriculum. While I was gone, the students pitched in and helped each other. No one was ever left alone during a class without being able to get help from somebody.

Summary

Coming up with our Course Curriculum Outline or (CCO) (see Appendix D), has been a challenge. Over the years, instructors would create the student learning outcomes (SLO's) relying solely on their own opinions. When I say students transferring and having problems with receiving credit for some or many of their classes, I felt that as a facilitator, it was my responsibility to get more people involved in developing and implementing a “well” defined curriculum. This is what this project is all about.

I found that many of the objectives were fine, but my content to teach needed a little changing. The other huge part was attitudes and abilities. I would tell my students some things they should be doing, but it did not really have a large impact. During this last semester, I have had some local engineers come and actually teach sections of my curriculum for me. During this time, he or she will reinforce certain qualities outlined in my survey.

The big thing that we have done in these past few months, in the EDMT Department at SLCC, was to come up with how we will develop our curriculum. It is a bottom up development (see Figure 1). Each course will build upon previous courses, and each degree will articulate to the next higher one. This way the pathway from SAT (School of Applied Technology) to a 1-year certificate, to an AAS, to and AS, and then onto a BS at a university is a very smooth

transition. We are making all our courses relevant and adding the rigor into the content to see if our students really understand the objectives being taught.

Another big thing that I have built into my curriculum this semester is more communication with industry. I am working with a few of the companies interviewed and many of the assignments came from them. This way they evaluate and review with the students their strengths and weaknesses; it also gets their name out into industry. I have also been able to have more team learning opportunities, this way students' work together and help teach each other.

I did not face any challenges in my new curriculum development because I had my administration at SLCC behind me. After they had seen my survey and the results, along with my willingness to make the necessary changes in the EDDT program, they supported me in everything I needed, along with funding.

CHAPTER IV

HIGHER EDUCATION ARTICULATION

Introduction

The purpose of this project was to create documents (e.g., curriculum with revised syllabi) in the area of design and drafting that could be used to articulate between SLCC and with two other Utah universities that is WSU and Utah State University (USU).

Admission into a major program at a transfer institution depends upon receiving the institution's requirements for that major. Some major programs are restricted and require special application as well as a competitive grade point average. At SLCC, students work with an academic advisor who helps in developing a viable articulation plan to a university, which a student wishes to transfer to.

Background Information

Currently at SLCC, we have an articulation agreement with WSU and have begun a dialog with USU. When I heard back from students who transferred to WSU, they had problems with receiving credit for some of their courses taken at SLCC, I got concerned. In trying to fix this problem, I found that WSU had changed their curriculum without informing SLCC.

In doing my research, I found an article on vocation rehabilitation (VR), which is important to me because of the large number of students who are sponsored by VR at SLCC. Many of these students have experience and providing them with credit for what they have already done is a challenge.

In the article it stated, “Higher education has been repeatedly linked to higher employment rates and earnings for adults in the United States.... As people with disabilities in general, they continue to be plagued by sustained high rates of unemployment; it is not surprising that postsecondary education has become an area of interest and study” (Grigal, Migliore, & Hart, 2014, p. 190). What I have seen with my VR students is that they have a real purpose in being in class. They want something better for themselves. Many times they understand the mechanics of how things work because they are a little older and are more committed. The problem I have is how you give VR students credit for their previous accomplishments.

In the review of literature, a very important article related to this study was found entitled “The Community College Route to the Bachelor’s Degree.” The first sentence is a very true one. It states, “It is well established that students who begin post-secondary education at a community college are less likely to earn a bachelor’s degree than otherwise similar undergraduates who begin at a 4-year school, but there is less consensus over the mechanisms generating this disparity” (Monaghan & Attewell, 2014, p. 1). I have had the opportunity to visit with many graduates from the college in the EDDT program, along with many from other programs of study. What I have found is the average student has spent 3-4 years receiving an AS or ASS degree, and they do not have the funding to move on. They have taken over the required credits, but most of them do not transfer to a university. This is a very sad that we are letting this happen. I ask a question the first day of class in the semester, to see what my students’ expectations are. The question is, “What do you expect to get out of this course, and do you plan on furthering your education after you earn a degree?”

Clark (1960, as cited in Monaghan & Attewell, 2014) stated, “...many students lowered

their educational expectations during their years at community college. Those who began with hopes of completing a BA or higher credential experienced academic setbacks and were influenced by faculty and peers, such that over time many decided that it was more realistic to aspire to a credential short of a BA” (p. 2). This attitude has been around for a long time, but it is now challenged by a new thought by Alexander, Bozick, and Entwisle (2008, as cited in Monaghan & Attewell 2014) said, “On average, community college students increased their degree expectations as they spend more time there, in a process Alexander termed ‘heating up’ (p. 3). I like the term, “heating up”, instead of cooling down, as far as degree expectations.

Many students use the Community College as a stepping stone to receive a 4-year degree. There were many statistics given about this situation. Some of the interesting findings related to this situation include, lower income for college students, lower math levels taken in high school, higher percentage of students have not taken the SAT, and a much higher percentage having aspirations of receiving less than a BA.

Knowing this makes it even more important for me, at least, to provide them with the best curriculum and pathways to be able to transfer to a 4-year degree institution. The article goes on to say,

Digging deeper into the transcript data, we find that many transfers from community college “lose credits” when they transfer, some course credits that they accumulated at their community college are not accepted by their post-transfer 4-year college. (That information was coded by BPS staff using the transcripts from the two institutions. These transcript credits did *not* count remedial courses taken in community college, which are usually non-credit bearing.) In fact, about 14% of transfer students in this study essentially began anew after transferring. Their new institution accepted fewer than 10% of their community college credits. At the other extreme, only 58% of community college transfers were able to bring over 90% or more of their college credits to the 4-year institution (authors’ calculations from National Center for Education Statistics [NCES], 2011, 2012). The remaining 28% of transfers lost between 10% and 89% of their credits. (Monaghan & Attewell, 2014, p. 14)

There are some states like New Jersey, who have mandated that all for-credit courses earned in a state community college, must count toward BA Graduation. I feel that this could happen between SLCC and WSU and also USU, all we need to do is work together in developing curriculum and processes.

In an article titled “Common Purpose and Different Approaches to Support College-Going in Five Southwestern Districts,” Bosworth, Convertino, and Hurwitz (2014) discussed a study that was done in five different school districts and it showed that an average 93% of the high school juniors in 17 local high schools had interest in attending college.

This exploratory study was motivated by a survey showing that on average 93% of high school juniors in 17 very diverse local high schools had interest in attending college (Hurwitz et al., 2012). Given that college aspirations were similar, despite school size, ethnic composition, student social economic status (SES), or school district, we wondered if all schools were providing similar college-linking services and supports and if those efforts could reasonably be called part of the school culture. (Bosworth et al., 2014, p. 18)

If in Utah, we had this interest in our high schools, and a well-defined articulation in place, our graduation rates would improve.

Articulation Agreement Development

In working towards the articulation agreements between SLCC, WSU, and USU, has proven to be very interesting. The first step that I did was to meet with each higher education institution and see what is presently in place. This part has taken much of my time because there has been a lot of changing without articulating with counterparts and keeping current. The BIG Idea I came away with is that each institutions advisory group needs to have a member from each learning institution to keep current.

I have met on many occasions with faculty members from the Design Engineering Technology (DET) department at WSU. We have compared our curriculum and syllabus' of different courses and have come up with a list of courses that will articulate. The big problem we have now is that there is a planned change in the DET program at WSU. Currently, it has a large portion of architecture in it which has eliminated a lot of classes that were previously part of the program. As long as our course descriptions' align, then it will be a very easy process for this articulation.

I have also been working with Steve Williams who teaches drafting at USU. We have gone over his proposed course curriculum and found that we are very close to being in line and getting an official document signed. I have contacted USU's registers office to go over the process. With the present approvals I was told that when everything gets through the Curriculum Committee, it will be a done deal. I have included an official form, "Program-Specific Articulation Agreement" (see Appendix E), that I went over with SLCC's Curriculum and Articulation Office. This is the form that the transferring institution, fills out when a student wants to transfer to another institution. This has been difficult in the past because of all the changes that have taken place. I have also included another form, "SLCC Articulation & Transfer Guide Worksheet" (see Appendix F). This is the form SLCC uses to create an articulation with courses and the institutions involved.

In the past I have left all this paper work up to the student, academic advisor and articulation office to take care of. This last semester I have taken an active part in helping with this process. It has made me more aware of the importance of having a well-defined articulation program in place.

Figure 13 shows an example of how similar drafting courses at each institution are compared for articulation. A review of these three course descriptions would show how similar they are in their content and that they would probably be accepted for articulation. This format will be used to compare drafting courses for articulation at the other universities.

Articulation Agreement Implementation

During this project, it was found that implementing articulations agreements is a very easy process. It does require collaboration between different learning institutions. I found that if

<p>SLCC EDDT 1040 – Introduction to Computer-Aided Drafting and Design</p> <p>An introductory course that provides basic skills using 2-D and 3-D software for drawing applications. The course includes an introduction to STEM, the design process, sketching and documentation, measuring, geometric construction and constraints, orthographic projection, section drawings, auxiliary views, fasteners, dimensioning and tolerancing. Students are encouraged to work in teams and develop problem-solving skills. <input type="checkbox"/></p>
<p>USU TEE 1200 – Computer-Aided Drafting and Design</p> <p>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. <input type="checkbox"/></p>
<p>Weber DET 1010 - Introduction to Engineering & Technical Design</p> <p>An introductory course to explore engineering and technical design solutions using critical thinking in Science, Technology, Engineering and Mathematics (STEM). Learning modules include; The Engineering design Process & Professions, Sketching & Documentation, Design Measuring, Introduction to CAD & Geometric Constraints, Design Visualization, Orthographic Projection & Multi-View Drawings, Fasteners, Assembly Drawings, Dimensioning, Tolerancing, Final Team Design Projects, and Final Review & Assessment. <input type="checkbox"/></p>

Figure 13. Comparing course descriptions for articulation.

you keep the same course number (e.g., EDDT 1040) it is much easier, if not; as long as the course description and objectives are aligned it is very easy. Before this project, I was led to believe that there was one department in charge of signing and approving all articulation agreements. During this process, I found that department faculty of the Technology and Engineering Education (TEE) could sign the document and approve the articulation for their courses.

Recommendations

In the process of wanting to help the students be successful in their chosen avenues of learning, I have found that it is up to me as a program facilitator to push and develop articulation agreements between transferring institutions. Part of this process is to be in frequent contact with other school facilitators in your area. It would be very helpful if you could be on their advisory committees along with one of them on yours. This way you can coordinate changes on a regular basis and document the changes. “Do it, Do it right, Do it right now!”

CHAPTER V

CONCLUSIONS

Purpose

The materials developed in this project included a drafting survey to find the needs of local industry, the development of a revised syllabi template, and a process to develop articulation agreements with WSU and USU were completed. The materials produced in this project in the drafting industry are invaluable to me and my colleagues who work in the EDDT at SLCC.

In this project, I found that it is important for educators to work together and to be good team members. When we get aligned, no one individual has the right to change something without presenting it to the group and then all voting on it, before taking appropriate action. One person does not have all the answers. I for one do not want to be solely responsible for deciding what should be taught without the input of others, after seeing how the “BIG” picture works. It is also a great to have the comradery with others to talk about ideas and how to make them work.

Another thing that I found was how the system really works. In the past I have left the majority of the advising to our academic advisors, I have really learned these past few months that they are only as good as we make them. I cannot expect the advisors to do all the work for my program without interaction with them. Since we are the ones who work with industry and other educators to come up with the program, who better is there to teach and help advise, than us. In fact, I have now made it a point to meet regularly with our academic advisor to review and teach about our program. I feel that this will help enrollments greatly.

I have had an idea reinforced to me in doing this project; the more my students feel I am working for them, the harder they will work for me. When you have guest lectures come into your class and they tell your students that they are fortunate to have an instructor like they do, because he or she is interested in them and their success.

Another finding I found is that as you implement the qualities an employer wants in an employee; it is a lot easier to teach them to your students. The old saying, “Do as I do, not as I say” comes to my mind as I teach these qualities or skills. If we are not showing by example these qualities, we are failing our students.

I have also found how articulation really works. Since we are a “global society” and in need of a “global curriculum” (as discussed in the article, “*A Global Curriculum? Understanding Teaching and Learning in the United States, Taiwan, India, and Mexico*” by Sparapani et al., 2014), it is very important for us to have a very high level program that meets the needs of all.

A big idea for me to learn more about are the cultural needs of foreign students and of our vocational rehab students, we need to provide all our students with those things they need to be successful.

I have also found that my Master’s Degree has been a great help to me in this endeavor. Before I started this degree, I had never created a PowerPoint or even used Excel. I had never taken an online class or typed a well-documented paper. I just got by. I have learned how to use countless programs and make myself a much better facilitator. If I had not pursued this Master’s Degree, I would not have been able to collect the valuable information I did to revise and improve my curriculum.

I have also found that my attitude about teaching has increased. It has always been good,

but it is great now! Being able to take more ownership has increased my workload, but at the same time increased my love for what I am doing. Shown below is a summary of each phase of the project.

Phase I – Survey

The survey was perhaps the most important part of my project. It gave me the information I needed to develop my curriculum, then my syllabus, and then work on the articulation between courses.

There were a lot of versions I went through before the final one was developed. My first was very long and asked a lot of pertinent information, but would have taken a long time to fill out. The first idea was to send them by mail or e-mail. It was sent to some of my PAC members and they told me that I would not get very many responses back. This is why I modified it to the latest version.

I then decided to do a person to person interview. I wanted more than yes or no answers to my questions. This proved to be very beneficial and helpful in learning more about local industries in the Salt Lake area.

The main recommendation I would give is to make sure your survey asks the specific questions that you are looking for answers to. Perhaps I could have developed a yes or a no questionnaire where I covered a lot of ideas. This would have given me a lot of shallow answers to a lot of questions, but no depth.

By doing a person-to-person interview, you can cover a lot of topics and get a lot of pertinent feedback. While I was doing the interviews, I wish I would have explained more about

how SLCC can help them. I was more focused on collecting the specific data I was after. Perhaps, prepared a document that explained the mission and goals of SLCC and how we can help them would have been more professional. Another idea to keep in mind is to be aware of the time they are giving to you during their workday. Do not take advantage of them.

Phase II – Syllabus Development

The syllabus was the fun part for me. For years I would answer the same questions over and over that students had in my classes. The newly devised syllabus has proven to reduce student questions and concerns. It has helped students take an ownership in my classes.

My objectives were better written and I was able to implement employee qualities into my teaching. I have not added these qualities at the present to my syllabus, but I feel it is important and I will for the next semester.

Perhaps, the most important part for me was to realize that it truly was a legal document. In the past, I would cover the information very fast, but now I make sure all the students understand everything contained in it.

Phase III – Articulation

This is the crowning part of the project. Being able to align courses with other institutions to make it possible for students to transfer their course work and receive credit to another institution. I found this process very easy with many people along the way, wanting to help. Especially right now with enrollments being down, we need to work together as learning institutions to help our students receive the best education, wherever they want to go.

This is very rewarding because it gives us an opportunity to rub shoulders with other professional educators in our field and get and share ideas. Being able to provide a clear pathway for all SLCC's students to other institutions is one of my goals.

Another reason this is important, is that it lets me at SLCC, discuss programs at USU, and WSU as I go through my syllabus the first day of class. It also helps us be active advisors for our students in giving them the direction they need in furthering their education.

I feel that it has given my students a well-defined curriculum to help prepare them for the world of work. It also has helped local industries by providing them with some support through learning opportunities along with a growing number of well-prepared employees' in the future.

Perhaps the most important outcome of this project was to get curriculum in line with where it should be. Being able to provide a clear pathway for students to follow and transfer to different institutions to meet their goals is now available.

We now have a working partnership with industry and they now have a view of what we can do for them and in return, they do for us.

Conclusion

It has been a great opportunity to learn more about what makes a great program in any level of teaching. Many educators develop programs with just their own ideas, which I had done for many years. My purpose in pursuing this Master's degree was to learn how to create a great program which satisfies the needs of all concerned. I was able to see and use examples of great curriculums and syllabuses from all my classes at USU.

The vast amount of knowledge that is available to us all is fantastic. What I have learned

has helped me, as an educator, become more aware of what my role is.

Some of the main ideas that I came away with were: (1) we need to keep on track every day and finish the students program of study in a timely manner so they will not get burned out. (2) Developing relevant curriculum is an ongoing process and something that needs constant updating. (3) It is important to show the relationship between formal education, informal education, education for life, and education for earning a living. (4) It is important to understand Bloom's Taxonomy and how it applies to each of us as well as using action words when we design objectives. (5) Perhaps the most important idea was realizing that a syllabus is a legal contract between an instructor and the students and what is expected from each party. (6) Surveys are really hard to write and to keep bias out of.

REFERENCES

- Armstrong, P. (n.d.). *Bloom's taxonomy*. Retrieved from <https://cft.vanderbilt.edu/wp-content/uploads/sites/59/Bloomtaxonomy.jpg>
- Bosworth, K., Convertino, C., & Hurwitz, J. T. (2014). Common purpose and different approaches to support college-going in five southwestern districts. *American Secondary Education*, 43(1), 18, 4-24.
- Center for University Teaching, Learning, and Assessment. (2015). *Action words for Bloom's taxonomy*. Pensacola, FL: Author. Retrieved from <http://uwf.edu/offices/cutla/services-for/assessment/blooms-taxonomy-introduction/>
- Choudhury, M. (2014). Designing of a syllabus. *New Man International Journal of Multidisciplinary Studies*, 154, 153-158.
- Fink, A., (2017). *How to conduct surveys: A step-by-step guide* (6th ed.). Los Angeles, CA: Sage.
- Grigal, M., Migliore, A., & Hart, D. (2014). A state comparison of vocational rehabilitation support of youth with intellectual disabilities' participation in postsecondary education. *Journal of Vocational Rehabilitation*, 40, 190, 185-194.
- Hampton, C., & Vilela, M. (2016). *Section 13. Conducting surveys*. Retrieved from <http://etb.ku.edu>
- Hurwitz, J. T., Bosworth, K., Rios-Aguilar, C., Deil-Amen, R., Hendricks, J. R., & Rubenstein-Avila, E. (2012, April). *Students' perceptions of college-going cultures and the mi-match with school demographics*. Poster presented at the American Educational Research Association Annual Meeting, Vancouver, BC.
- Monaghan, D. B., & Attewell, P. (2014). The community college route to the bachelor's degree. *Educational Evaluation and Policy Analysis* (published online before print). Retrieved from <http://epa.sagepub.com/content/early/2014/02/28/0162373714521865>
- National Center for Education Statistics. (2011). *2004/2—9 Beginning postsecondary students longitudinal study restricted-use data file* (NCES No. 2011244). Washington, DC: Institute of Education Sciences, Department of Education.
- National Center for Education Statistics. (2012). *2004/2009 Beginning postsecondary students longitudinal study restricted-use transcript data files and documentation* (NCES No. 2012243). Washington DC: Institute of Education Sciences, Department of Education.

- Popik, B. (2012, December 19). "Tell me and I forget; teach me and I may remember; involve me and I will learn." [Web blog comment]. Retrieved from http://www.barrypopik.com/index.php/new_york_city/entry/tell_me_and_i_forget_teach_me_and_i_may_remember_involve_me_and_i_will_learn/
- Roberts, M. (2015). *Curriculum development: An overview (figure 1)*. Retrieved from http://oak.ucc.nau.edu/mr/cte592/module_1/curriculum_development_an_overview.html
- Smith, P. L., & Ragan, T. J. (n.d.). *Instructional design* (2nd ed.). Norman, OK: The University of Oklahoma.
- Sparapani, E. F., & Perez, D.C., Gould, J., Hillman, S., & Clark, L. (2014). *A global curriculum? Understanding teaching and learning in the United States, Taiwan, India, and Mexico*. 2, 4, 1-15. Los Angeles, CA: Sage. doi: 10.1177/2158244014536406.SAGE
- Wentzell, D. (2006). *Guide to curriculum development: Purposes, practices, procedures*. Hartford, CT: Connecticut State Department of Education. Retrieved from <http://www.sde.ct.gov/sde/cwp/view.asp?a=2618&q=321162>
- Wyse, S. (2012, June 29). *The 4 main reasons to conduct surveys*. [Web log post] Snap Surveys. Retrieved from <http://www.snapsurveys.com/blog/author/swyse/>

APPENDICES

Appendix A

Survey Questions: EDDT 1040

Survey Questions

1. Please, identify the industry most commonly associated with your company?
2. How many people work in the drafting and design team at your company?
3. Please, identify the primary software used for drafting and design at your company.
4. Please list any other software programs used by your drafting and design team.
5. Does your company intend to change your current software to meet the future needs of your department?
6. Describe your industry's general design workflow.
7. What is the primary skill lacking from your most recently hired employee?
8. Which of the following statements is the most identifiable to you and your company?
 - A) I would prefer my new hires to know as much as possible about my industry and workflows at the expense of education about software tools.
 - B) I would prefer my new hires to know as much as possible about software tools at the expense of education about my industry and workflows.

Appendix B

SLCC Required Syllabus Statements: EDDT 1040

REQUIRED SYLLABUS STATEMENTS (updated 2016-03-08)**Title IX**

20 U.S.C.A. Section 1681 (a): TITLE IX

“No person in the United States shall, on the basis of sex, be excluded from participation in, be denied benefit of, or be subjected to discrimination under any education program or activity receiving federal funds.”

Examples of violations (but not limited to):

- ▶ Sexual advances, requests for sexual favors and sexually motivated physical conduct
- ▶ Overt or subtle pressure for sexual activity
- ▶ Sexually offensive verbalization including remarks, “teasing”, slurs, and innuendo
- ▶ Repeated inappropriate jokes or comments about sex or gender specific traits
- ▶ Conduct that is demeaning or derisive and occurs substantially because of one’s gender
- ▶ Sexual assault
- ▶ Sexual Violence
- ▶ Gender based disparate treatment

Violations can occur in any college environment, such as (but not limited to):

- | | |
|------------------|--------------------|
| ▶ Field Trips | ▶ Classrooms |
| ▶ Student Clubs | ▶ Athletics |
| ▶ Transportation | ▶ On Campus Events |

If you have questions or concerns regarding your rights or responsibilities, or if you would like to file a Title IX complaint please contact:

Students: Dr. Marlin Clark, Dean of Students, 801-957-4776, STC 276 A (Redwood)

Employees or Community members: Ken Stonebrook, Title IX & Discrimination Manager, 801-957-5027, AAB 211G (Redwood)

Online Reporting Form: <http://www.slcc.edu/eo/title-ix/complaint.aspx>

Salt Lake Community College has a strong prohibition against RETALIATION! The college does not tolerate acts of retaliation against anyone for engaging in filing a complaint or participating in an investigation.

Student Code of Conduct:

Students are expected to follow all provisions of the Student Code of Conduct available here:

<http://www.slcc.edu/policies/docs/Student Code of Conduct.pdf>

ADA

Students with medical, psychological, learning or other disabilities desiring accommodations or services (such as: special test arrangements, note-taking, special equipment, etc.), under ADA must contact the Disability Resource Center. The DRC

determines eligibility for and authorizes the provision of these accommodations and services for the college. Please contact the DRC at:

South City Campus: 801-957-3258

All other campuses: 801-957-4659 / TTY: 801-957-4646

Email: drc@slcc.edu

When appropriate:

General Education Statement

This course fulfills the *(enter the General Education Designation(s) here* requirement for the General Education Program at Salt Lake Community College. It is designed not only to teach the information and skills required by the discipline, but also to develop vital workplace skills and to teach strategies and skills that can be used for life-long learning. General Education courses teach basic skills as well as broaden a student's knowledge of a wide range of subjects. Education is much more than the acquisition of facts; it is being able to use information in meaningful ways in order to enrich one's life.

While the subject of each course is important and useful, we become truly educated through making connections of such varied information with the different methods of organizing human experience that are practiced by different disciplines. Therefore, this course, when combined with other General Education courses, will enable you to develop broader perspectives and deeper understandings of your community and the world, as well as challenge previously held assumptions about the world and its inhabitants.

General Education ePortfolio Syllabus Statement

Each student in General Education courses at SLCC maintains a General Education ePortfolio. Instructors in every Gen Ed course will ask you to put at least one assignment from the course into your ePortfolio, and accompany it with reflective writing. It is a requirement in this class for you to add to your ePortfolio, and this syllabus details the assignments and reflections you are to include. Your ePortfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. When you finish your time at SLCC, your ePortfolio will then be a multi-media showcase of your educational experience. For detailed information visit <http://www.slcc.edu/gened/eportfolio> or <http://eportresource.weebly.com>

After you have picked an ePortfolio platform, go to the corresponding help site to watch the tutorials and look at the examples so you can get started on your own:

<http://slcceportfolio.weebly.com>

<http://slcceportfolio.wix.com/slcceportfolio>

<http://slcchelpsite.jimdo.com>

<https://slccwordpresshelpsite.wordpress.com>

<https://sites.google.com/site/slcchelpsite/>

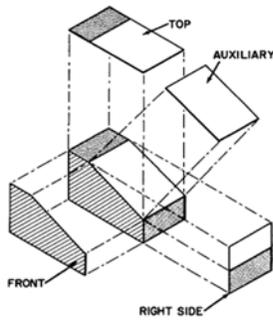
If you would like to start your ePortfolio in a computer lab with a person there to help you, please visit an ePortfolio Lab on the Taylorsville-Redwood, Jordan or South City Campus during business hours, and staff will help you without an appointment. For lab hours and locations please look at the following site:

<http://eportresource.weebly.com/lab-information.html>

Finally, questions regarding the ePortfolio can be directed to Emily.Dibble@slcc.edu.

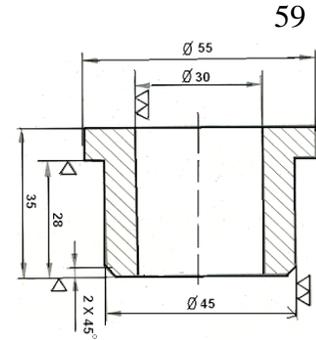
Appendix C

Developed Syllabus: EDDT 1040



Syllabus

Salt Lake Community College
 Engineering Drafting & Manufacturing
 Technology Dept.
 Course: EDDT 1040
 FALL Semester 2016



Instructor: Michael K. Stenquist
Office: ATC – 107 – D

E-Mail: michael.stenquist@slcc.edu
Phone: 435-881-1531

Vision

Salt lake Community College will be a model for inclusive and transformative education, strengthening the communities we serve through the success of our students.

Mission

Salt Lake Community College is your community college. We engage and support students in educational pathways leading to successful transfer and meaningful employment.

Values

*Collaboration * Community * Inclusivity
 Learning * Innovation * Integrity * Trust*

Consultation Hours: Monday - Tuesday - Wednesday -

Required Course Materials: USB Storage Drive.

Textbook: Handouts will be provided.

Website: Must have a computer capable of using appropriate course applications (e.g. Canvas) and Microsoft Office programs (e.g. Microsoft Word and Excel).

Course Description: An introductory course that provides basic skills using 2-D and 3-D software for drawing application. The course includes an introduction to STEM, the design process, sketching and documentation, measuring, geometric construction and constraints, orthographic projection, section drawings, auxiliary views, fasteners, dimensioning and tolerancing. Students are encouraged to work in teams and develop problem-solving skills.

Course Focus: Basic computer knowledge is helpful but no previous CAD or drafting experience is necessary. The major objective of the course is to provide the student with the training and practice needed to produce drawings using the current version of AutoCad, as well as fundamental drafting skills as they apply to the assignments. Each assignment will require you students to do some sketching to help them visualize what they are doing. During the class students will be introduced to sketching, geometric construction, Multiview drawing, section

views, auxiliary views, and threads along with call outs. Dimensioning is a critical part and will be weighed very heavily on each assignment. Students are encouraged to ask questions and collaborate with each other. We will do many drawings together as a class at the first, and then only a few as new subjects are introduced. Students will also be given a list of the required drawings for the course and room to keep track of their scores and due dates.

Prerequisites: None

Course Learning Outcomes: In order to fulfill the goals of the College-wide Learning Outcomes, the following course learning outcomes have been established for this course. Upon completion of this course a person who has completed the course should be able to demonstrate a general understanding of the following essential learning outcomes.

Learning Outcomes from Course Curriculum Outline: Basic skills using AutoCAD for drawing applications are taught. The course includes: draw and modify commands, geometric construction, dimensions, templates, blocks and libraries, hatching, layers, scales, and plotting.

1. Proficiency with AutoCAD's user interface including: Screen Access, Menus, Toolbars, Dialog Boxes, Command Structure, Windows Applications for Editing, Customized Profiles, Button Assignments, Drafting Settings. Also drawing scales and factors.
2. Entry-level expertise in basic drawing, modification, and reproduction commands. Use of AutoCAD functions for ease and efficiency in geometric construction, orthographic and auxiliary projection including: polygons, ellipses, tangencies, splines, and alignments.
3. Utilization of drawing aids: snap grid, object snap tools, Ortho, Polar tracking, Object tracking, coordinate and polar input, Cartesian coordinate system in the creation of precision drawings.
4. Application of correct dimensioning standards and styles, including:
 - a. Quick Dimensioning.
 - b. ANSI standards for different types of dimensioning.
 - c. Ordinate dimensions from a 0,0 datum.
 - d. Architectural / structural styles and format.
 - e. Metric dimensions and scales.
 - f. Mechanical dimensions with tolerances, different precisions, and text added.
 - g. Changing and creating dimension styles, scales, tolerances, units, and format.
5. Creating blocks and block libraries, modifying existing blocks, attributes and using blocks from the Design Center.
6. Utilization of hatching for representation of materials in both architectural and mechanical drawings, appropriate styles and scaling.

SYLLABUS: This syllabus represents and “agreement” between you the student and the instructor. It is designed to insure course integrity and fairness as well as provide students with a clear understanding of course expectations. The instructor and students are expected to use the syllabus and schedule as a guide for the semester. Any deviation from the syllabus or schedule will be discussed and agreed upon by the instructor and students.

ATTENDANCE: Attendance at one of the first two class meetings is **MANDATORY!** If you

do NOT attend at least one of the first two lectures, **YOU RISK BEING DROPPED from the course by the end of the day on September 1.**

Americans with Disabilities Act: Students with medical, psychological, learning or other disabilities desiring accommodations or services under ADA, should contact the Disability Resource Center (DRC). The DRC determines eligibility for and authorizes the provision of these accommodations and services for the college. Please contact the DRC at the student Center, Suite 244, Redwood Campus, 4600 South Redwood Road, 84123. Phone: (801) 957-4659, TTY: 957-4646, Fax: 957-4947 or by drc@slcc.edu.

Incomplete Grade and Withdraw from Class: A grade of “I” (Incomplete) is the instructor’s option and is not given except only in the most extenuating of circumstances for which there is verifiable written documentation. In order to receive an incomplete, nearly all course work must be completed (e.g. ~75%) with a passing grade. Last day to drop this class *with refund* is September 16, last day to withdraw (*without refund*) is October 30. **It is the responsibility of the student to drop / withdraw from this class, not the instructor.**

Academic Dishonesty: Absolutely **NOT** tolerated and includes all forms of cheating and plagiarism as outlined in the Student Code. Cheating will be dealt with as harshly as allowed by the college on *the First Instance*, which includes your being failed from the class.

Electronic Devices: Cell phones, pagers are to be **turned off** during class. Computers can be used for note-taking and course-related purposes **ONLY** but should not be used during class for working on other tasks (e.g. answer emails, Facebook, other classes etc.) You will be asked to leave if your electronic device disrupts the class in anyway. **Cell phones MUST be turned Completely OFF during exams.**

Classroom Recordings: Students may not record or publish information from the class without written authorization from the instructor. If used without authorization you have violated Privacy /Intellectual Property Rights.

Missed Due Dates: To be determined by Instructor.

Student Code of Conduct: The student is expected to follow the SLCC Student Code of Conduct found at <http://www.slcc.edu/policies/docs/StudentCodeofConduct.pdf> .

Emergency Evacuation Procedures: **We will leave the building immediately in case of an emergence.** We will follow school guidelines at: <http://www.slcc.edu/emergency-prepare/emergency-procedures.aspx> .

Tentative Grading Scale:

TOTAL POINTS:	PERCENT:	GRADE:
465 - 500	93 - 100	A
450 – 465	90 – 93	A-
435 – 450	87 – 90	B+

415 – 435	83 – 87	B
400 – 415	80 – 83	B-
385 – 400	77 – 80	C+
365 – 385	73 – 77	C
350 - 365	70 - 73	C-
335 - 350	67 - 70	D+
315 - 335	63 - 67	D
300 - 315	60 - 63	D-
0 - 300	Below 60	E

WEEKLY SCHEDULE

Weekly Schedule– DET 3100 – Spring Semester 2016

DATE	Reading & Homework Assignments	Due Date
Week 1 Jan 11-15	Read Technical Sketching and Shape Description Base Plate Adjusting Arm Stop Block Read Geometric Construction Geometric Construction Handout Shear Plate Geneva CAM Guide Block	Jan 20
Week 2 Jan 18 – 22 Jan 18 MLK Day	Read Multiview Projection Chapter Multiview Projection Handout (naming surfaces) Blade Holder Rod Support	Jan 27
Week 3 Jan 25 – 29	Read Dimensioning Chapter Dovetail Slide (dimension) Dovetail Finger (dimension) Safety Key (dimension) Ratchet Wheel Tool Holder (dimension) Index Feed (dimension) Gear Arm	Feb 3
Week 4 Feb 1 - 5	Form Roll Lever Intro To 3-D Modeling Keyhole Saw Handle Chuck Jaw (dimension) Switch Bracket (dimension)	Feb 10
Week 5 Feb 8 – 12	Read Section View Chapter Shifter Block (dimension) Lever Hub (dimension)	Feb 17

	Adjustment Block (dimension) Bearing (dimension) Special Bearing (dimension) Truck Wheel (dimension)	
Week 6 Feb 15 – 19 Feb 15 Pres Day	17 th No Assignments – Make Up Day Read Threads & Fasteners Chapter	Feb 24
Week 7 Feb 22 – 26	Read Auxiliary Views Chapter Holder Block (dimension) Clamp (dimension) Push-Off Plate (dimension) Do Thread Assignment Brush Holder (dimension)	March 2
Week 8 Feb 29 – Mar 4	Work on Drawings for Final 1- Buick Rear Transmission Gasket 2- Roller Rest Bracket (dimension) 3- Vibrator Arm (dimension) 4- Stuffing Box (dimension) 5- Angle Plate (dimension)	March 7

General Education ePortfolio:

Each student in General Education courses at SLCC maintains a General Education ePortfolio. Instructors in every Gen Ed course will ask you to put at least one assignment from the course into your ePortfolio, and accompany it with reflective writing. It is a requirement in the class for you to add to your ePortfolio (insert the title of the signature assignment(s) for the course here), as well as a reflection. This syllabus details the assignment(s) and reflection(s) you are to include. Your ePortfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. When you finish your time at SLCC, your ePortfolio will then be a multi-media showcase of your educational experience. For detailed information visit <http://www.slcc.edu/gened/eportfolio>. Make sure to check out the “Info for Students” page.

Transfer / Articulation Information:

The degree also provides two years for transfer into the Mechanical Engineering Technology Bachelor of Science at Weber State University.

Students who earn an AAS degree in Engineering Design / Drafting Technology have the option to transfer into the Technology Management Bachelor Degree at Utah Valley University. UVU will accept up to 45 technical credits towards this degree.

Admission into a major program at a transfer institution depends upon the receiving institution’s requirements for that major. Some major programs are restricted and require special application

as well as a competitive GPA. See an Academic Advisor at both SLCC and the intended receiving institution for specific articulation information.

General Education Statement:

This course fulfills the Life Science (LS) requirement for the General Education Program at Salt Lake Community College. It is designed not only to teach the information and skills required by the discipline, but also to develop vital workplace skills and to teach strategies and skills that can be used for life-long learning. General Education courses teach basic skills as well as broaden a student's knowledge of a wide range of subjects. Education is much more than the acquisition of facts; it is being able to use information in meaningful ways in order to enrich one's life.

While the subject of each course is important and useful we become truly educated through making connections of such varied information with the different methods of organizing human experience that are practiced by different disciplines. Therefore, this course, when combined with other General Education courses, will enable you to develop broader perspectives and deeper understandings of your community and the world, as well as challenge previously held assumptions about the world and its inhabitants.

College-Wide Learning Outcomes:

The Core Themes of SLCC's Mission focuses on Access and Success, Transfer Education, Workforce Education and Community Engagement. As such, all courses and programs address one or more of the below College-Wide Learning Outcomes. Upon Successful completion of any program at SLCC, students should:

- Acquire substantive knowledge in the discipline of their choice sufficient for further study, and / or demonstrate competencies required by employers to be hired and succeed in the workplace.
- Communicate effectively.
- Develop quantitative literacies necessary for their chosen field of study.
- Think Critically.
- Develop the knowledge and skills to be civically engaged, and / or to work with others in a professional and constructive manner.

Appendix D

SLCC Course Curriculum Outline: EDDT 1040

Salt Lake Community College Course Curriculum Outline

<p>Final Approval Date (date approved by Faculty Senate & Provost): 07/15/2016</p> <p>School: SM = Science, Mathematics, and Engineering Division Code: NS Department Code: EDDT</p> <p>Action: Select Action If this is a change, what is being changed?</p> <p>Rationale for Action: reflect college-wide student learning outcomes and updated curriculum forms</p> <p>Faculty Contact: Michael Stenquist Date Submitted: 07/15/2016</p> <p>Semester of Implementation: Fall Year of Implementation: Select One</p>
--

Course Basics:

Course Prefix: **EDDT**

Course #: **1040**

Abbreviated Course Title: **Introduction to AutoCAD**

Full Course Title: Introduction to AutoCAD

Course Description: Prereq: NONE - Basic skills using AutoCAD for drawing applications are taught. The course includes: draw and modify commands, geometric construction, dimensions, templates, blocks and libraries, hatching, layers, scales, and plotting.

Course Student Learning Outcomes (SLOs):	Related College-Wide Student Learning Outcome(s)
<p>Basic skills using AutoCad for drawing applications are taught. The course includes: draw and modify commands, geometric construction, dimensions, templates, blocks and libraries, hatching, layers, scales, and plotting. .</p> <p>1. Proficiency with AutoCAD's user interface including: Screen Access, Menus, Toolbars, Dialog Boxes, command structure, Windows applications for editing, customized profiles, button assignments,</p>	<p>1.</p>

drafting settings. Also drawing scales and factors.	
2. Entry-level expertise in basic drawing, modification, and reproduction commands. Use of AutoCAD functions for ease and efficiency in geometric construction, orthographic and auxiliary projection including: polygons, ellipses, tangencies, splines, and alignments.	1.
3. Utilization of drawing aids: snap grid, Object snap tools, Ortho, Polar tracking, Object tracking, coordinate and polar input, Cartesian coordinate system in the creation of precision drawings.	1.
4. Application of correct dimensioning standards and styles, including: <ul style="list-style-type: none"> a. Quick dimensioning. b. ANSI standards for different types of dimensioning c. Ordinate dimensions from a 0,0 datum d. Architectural/structural styles and format e. Metric dimensions and scales f. Mechanical dimensions with tolerances, different precisions, and text added. g. Changing and creating dimension styles, scales, tolerances, units, and format. 	1.
5. Creating Blocks and Block libraries, modifying existing blocks, attributes and using blocks from the Design Center.	1.
6. Utilization of hatching for representation of materials in both architectural and mechanical drawings, appropriate styles and scaling.	1.

Prerequisite(s): NONE

Corequisite(s):

Cross-listing(s):

Equivalent Course(s):

Credit Hours: 3 to

Billable Hours: 5 to

Lecture Hours: 2 to

Lab Hours: 3 to

Other Hours: to
Total Contact Hours: 5 to

Repeat Code: Select One
Repeat Limit:

Course Details:

Semester(s) Offered: All

GenEd Designation(s): (if applicable) (if applicable) *if selected, fill out attachment A.
Study Abroad Designation: No * if yes, fill out attachment B.
Service Learning Designation: No *if yes, apply through Thayne Center.

CTE course: V = Vocational (CTE) course
Course Level: UG = Undergraduate (if applicable) (if applicable)
Is this course only offered for CEUs? No

Default Grading Mode: S = Standard Letter
Other Grading Mode(s): (if applicable) (if applicable) (if applicable) (if applicable)

Schedule Type(s): K = Lecture/Lab (if applicable) (if applicable) Other (Please Specify)
Instructional Method(s): 1W = Face-to-Face Classroom (if applicable) (if applicable)
(if applicable)

Registration Restrictions:

Is this a transfer course? Select Yes or No
Articulation & Transfer Information:

Course Fees:

Course fee(s): Yes
Amount(s): \$5.00
Rationale:

** NOTE: Approval of this course does not automatically ensure approval of the course fees. Course fees are reviewed each November by the Executive Cabinet.

Impact:

Impact on hosting department: NONE

Impact on other programs/departments: NONE

Special Instructions (content, pedagogy, assessment strategies, etc.):

1. The student will create and utilize a drawing template and personal profile including; unit settings, text styles, layers with assigned properties, dimension styles,

paper/layout space and model space setups, viewports, and demonstrate understanding of when these specific setups should be used in different applications.

2. The student will demonstrate proficiency in the use of AutoCAD drawing, modification, and reproduction commands without help as well as appropriate application of these functions for efficiency in geometric construction, and view projection.
3. The student will demonstrate knowledge and correct application of drawing aids and produce precision drawings.
4. The student must demonstrate knowledge and appropriate application of the different standards and formats for dimensioning and produce drawings utilizing each.
5. The student will demonstrate the ability to utilize, create, and modify Blocks and attach block attributes.
6. The student will demonstrate the ability to utilize hatching as well as correct styles and applications.

Representative Syllabus (include as a separate document):

Please include a representative syllabus for the course. An actual syllabus used by a faculty member teaching this course is strongly preferred. Save the file using the filename "CCO XXXX ##### Syllabus.doc" where xxxx ##### is the course prefix and number.

NOTE: Save this Course Curriculum Outline using the filename "CCO XXXX #####.doc"

Appendix E

Program-Specific Articulation Agreement:
Salt Lake Community College (transfer institution)

Program-Specific Articulation Agreement

Salt Lake Community College • (transfer institution)

The School of *****, *****, Division at Salt Lake Community College (SLCC) and the College of *****, Department of ***** at ***** agree to the articulation of transfer credit as outlined in the attached program-specific articulation agreement.

Terms of the agreement are as follows:

- Prior to transfer, students complete one of the following:
 - Associate of Applied Science degree in *****
 - Associate of Science degree with pre-major in *****
- Students must meet program-specific admission and graduation criteria as outlined
- Students may seek advisement at both SLCC and ***** to ensure proper sequencing of courses and efficient time to degree completion.
- This agreement will be reviewed annually. Renewal will be contingent on the outcome of these reviews.
- This agreement will remain in effect unless terminated in writing by either institution.

(Name)
Associate Dean, Division of *****
Salt Lake Community College

(Name)
Dept. Head, *****

Date

Date

(Name)
Dean, School of *****
Salt Lake Community College

(Name)
Dean, College of *****

Appendix F

SLCC Articulation & Transfer Guide and Worksheet for New Course: EDDT 1040



**SLCC Articulation &
Transfer Guide
Worksheet
NEW COURSE**

Academic Year:

Date Submitted:

[A] **Submitting Institution:** Salt Lake Community College
Academic Department: EDDT
Contact Person(s): Michael K. Stenquist – Assistant Professor of EDDT -or-
 Rachel Lewis; Asst Director Curriculum, (801) 957-4563

APPROVED BY:
Signature:

[B] **Course Information**

Prefix & Number: EDDT 1040
Credits: 3

Title: Perspectives in Communication (HU)

Purpose of course:	_____	General Education for Humanities
	_____	Program Requirement
	_____	Program Elective

Date:

Reviewing Institution: _____
Academic Department: _____

Course articulation decision:

Accepted as equivalent

to: _____ Cr: _____

_____ Acceptable for major:

Yes/No Major: _____

_____ Articulates as:

_____ Major requirements for

_____ Major elective for

_____ Minor requirement for

_____ Minor elective

for _____ Accepted as general elective

credit

Not equivalent to any course at receiving institution

Name

(Print):

Title:

Department: _____

Institution: _____

_____ E-

Mail: _____ Phone: _____

Please return to: Rachel Divine Lewis, Curriculum
Coordinator
Salt Lake
Community
College PO Box
30808

SLCC Distribution (Internal Use Only)

- Original SLCC Curriculum Office
- Copy to SLCC Chair & Program
- Coordinator Copy to SLCC
- Academic Advising

