Executive Summary-Design Engineering Technology

Program History

The Drafting Program began in 1959 as a technician program offered by Weber State College. In 1962 the program was changed to an Industrial Drafting program and in 1970 was called Engineering Graphics and was offered as an AAS degree. The name was changed to Engineering/Computer Aided Graphics and Design Technology in 1978. The AAS degree was modified and called Design Graphics Technology in 1985 and continued until 2001. A new BS degree was developed along with modifications to the AAS degree in 2001 and was called Computer & Design Graphics Technology (CDGT). Just prior to the First ABET visit in 2005 the program name was changed to Design Graphics Engineering Technology (DGET) because the name CDGT had caused a lot of confusion with the Computer Science and Art Graphics Design programs. The program name was changed to Design Engineering Technology (DET) officially for the 2012-2013 academic year.

Design Engineering Technology (Engineering Technology Department) - Mission Statement

To provide students in the disciplines of Design Engineering Technology, Electronics Engineering Technology, Manufacturing Engineering Technology, and Mechanical Engineering Technology with an education that emphasizes a solid theoretical background supplemented by practical experiences. This education enables students to acquire career-specific competencies and leadership skills, prepare for advanced education in their chosen fields of study and lifelong learning. Emphasis is given to the importance of students becoming and remaining competent in their chosen career, the need for continual improvement and application of new technologies, and the need to become active contributing members of society with an understanding of professional and ethical responsibilities. To advance knowledge in the respective disciplines through scholarly activities including instructional improvement, applied research and transfer of technology. To serve the students of the College of Applied Science and Technology and the University in addition to the business and industrial communities of Utah and the Intermountain region.

Program Educational Objectives

Graduates will demonstrate the ability to create mechanical and architectural designsusing a variety of computer aided design tools. (related to outcomes a, b, d).

Graduates will demonstrate their knowledge using oral, written, and graphical communications and have a desire for lifelong learning, keeping current within the discipline and be responsible citizens able to contribute as active members of society. (reference outcomes c, d, f, g, k)

Graduates will have the abilities and skills to work in a variety of different industries and businesses including manufacturing, mechanical, electrical, architectural, and government. (reference outcomes e, g)

Graduates will demonstrate a commitment to quality, ethics, service and continuous improvement in personal and professional situations (reference outcomes h, i, j, k).

Process for the Establishment and Revision of the Student Outcomes

Program Student Outcomes were originally based on ABET "a" thorough "k" outcomes, and have been modified slightly to include program specific information where beneficial. The Outcomes are linked to the Program Educational Objectives in our continuous improvement plan, and reviewed annually by the Program's Advisory Committee as part of the continuous improvement plan.

a.   an appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines
b.   an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology
c.   an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
d.   an ability to apply creativity in the design of systems, components, or processes appropriate to program educational objectives
e.   an ability to function effectively on teams
f.   an ability to identify, analyze and solve technical problems
g.   an ability to communicate effectively
h.   a recognition of the need for, and an ability to engage in lifelong learning
i.   an ability to understand professional, ethical and social responsibilities
j.   a respect for diversity and a knowledge of contemporary professional, societal and global issues
k.   a commitment to quality, timeliness, and continuous improvement

COURSE	Credit hours	ABET PROGRAM OUTCOMES ("X" indicates the course where this outcome is taught)									
		a	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**
DET 1010 Intro Engineering/Tech Des	3	X		X			X					
DET 1040 Intro Residential Arch	3	X			X							
DET 1160 Geometric Dimens/Toler 3D	3	X			X			X		X		
DET 1350 Residential Architectural Des	3	X			X							
DET 2000 Commercial Architectural/BIM	3	X			X		X	X				
DET 2460 Prod Des Fund 3D CAD	3	X	X		X		X	X				
DET 2650 Prod Design and Development	3	X			X	X	X					
DET 2660 Structural Design and Detailing	3	X			X		X					
DET 3000 Green Building Methods	3	X			X							
DET 3100 Tool Design	3	X		X	X		X					
DET 3300 Applied Kinematic Analysis	3	X			X		X					
DET 3400 Rendering Basics Photoshop	3	X			X			X				
DET 3470 Intro to CATIA V5	3	X		X	X		X					X
DET 4350 Virtual Design and Constr Apps	3	X			X		X	X				X

	Credit hours	a	b	c	d	e	f	g	h	i	j	k
DET 4400 Animation Basics	3	X			X			X				
DET 4470 Advanced CATIA V5	3	X		X	X		X					X
DET 4500 Hydraulic and Pneumatic Appl	3	X			X		X					
DET 4600 Senior Project I	2	X	X	X	X	X	X	X	X	X	X	X
DET 4610 Senior Project II	2	X	X	X	X	X	X	X	X	X	X	X

	Credit hours	**ABET PROGRAM OUTCOMES** ("X" indicates the course where this outcome is taught)										
COURSE		a	b	c	d	e	f	g	h	i	j	k
MFET 1210 Machining Principles	3	X					X	X				
MFET 2410 Quality Assurance	3	X	X									
MFET 2300 Statics/Strengths of Materials	5		X				X					
MFET 2360 Processes & Materials	3	X						X				
MET 3400 Machine Design	3		X				X					
MFET 3550 Manufacturing Supervision	3	X	X					X	X	X	X	
MFET 4610 Senior Project Planning/Est	3	X	X					X				
Lower Division Elective	2											
Upper Division Elective	6											
(The following are support courses)												
MATH QL1080 Pre - Calculus	5	X	X				X					
ENGL 2010 Intermediate College Writing	3							X				
COMM HU 1020 Principles Pub Speaking	3							X			X	
PHYS PS/SI 2010 General Physics + Lab	5	X	X									
ART CA 1030 Art for the Non-Art Majors	3										X	
COMPUTER & INFOR. LITERACY	4	X					X					
SOCIAL SCIENCE/DIVERSITY	6										X	
AMERICAN INSTITUTIONS	3										X	
HUMANITES/DIVERSITY	3										X	
LIFE SCIENCE/DIVERSITY	4									X		
SUMMARY OF COURSE/OUTCOMES	125	27	10	6	18	3	18	14	3	5	8	5

CAPSTONE OR INTEGRATED EXPERIENCES

The Design Engineering (DET) senior project provides students with a significant capstone experience during their final year in the program. It also allows students to demonstrate how well they have mastered the technical skills of the discipline. By working in a team environment, students also have the opportunity to demonstrate their mastery of communication, human relations and management skills.

The senior project is designed to help students achieve theoretical knowledge and practical skills. In addition, the concepts of human relations, communications, and fundamental project management skills are taught by creating a learning environment as close to the "real world" of work as academic situations allow. Students are able to create a powerful portfolio that demonstrates their abilities to potential employers. As part of their senior project, students are required to:

- Demonstrate appropriate mastery of knowledge, skills and modern tools that they acquire through course work in the DET discipline, as they identify, analyze and solve the technical problems associated with their project.

- Apply the current knowledge they have, as well as seek to adapt new applications of technology they may discover in the course of considering alternative solutions to problems.

- Apply creativity in the design of systems, components, and processes necessary to successfully complete their senior project.

- Function effectively as a senior project team including showing respect for differing opinions and a willingness to compromise as situations call for it.

- Demonstrate effective communication among team members during review presentations and in all written documentation.

- Conduct research to answer questions beyond their current knowledge.

- Promote ethical practices within their team and understand the potential impact the project may have on its users.

- Have a commitment to quality, timeliness and continuous improvement as their team progresses through the various phases of the project.