

Engineering Drafting and Design Technologies Department

1. Program Description

The Engineering Drafting and Design Technologies Department (EDDT) at Utah State University Eastern has the role of teaching not only drafting but also engineering trade and technical support courses for other programs on the campus. The department's primary role is to prepare their students to work in an industrial occupation. At the present time, the only degree offered by the department is a one-year certificate of completion that enables students to enter the work force with entry level skills after one year of course work.

The program is now located in the West Instructional Building. This location provides additional space for computer labs, as well as much needed office space for faculty. The program offers both conventional board drafting and computer aided drafting. The faculty is keenly interested in providing state of the art training. The program is outfitted with state-of-the-art equipment for all of its courses.

2. Program offerings

Courses offered as part of the certificate and degree programs reflect the needs of those programs. Specific courses reflect results of accreditation teams and industry requests. They are expressly related to department objectives.

All courses in the drafting program have course outlines on file in the Division Chair's office. Courses are reviewed for demonstrated need; content (meeting objectives); teaching techniques, e.g., hands on or classroom use, and evaluation methods including cognitive skills, psychomotor skills, outcomes assessment, and use of teacher judgement.

The drafting department offers two courses that can be used to fill the computer component of general education. These courses include EDDT 1040 CAD 1 and EDDT 1500 Introduction to GIS. It should be noted that many of the courses offered in the drafting program are dual-listed in the Trade and Technical area.

There are no special admission standard or conditions for students entering the drafting classes.

Curricula offered in the drafting/engineering department include the following:

EDDT 1010 Technical Drafting – 3 credit hours

Lecture and drafting problems in orthographic projections, auxiliary views, sections, the standards of threads and fasteners, and the general practices for beginning engineering

drawing: lettering, geometric construction, sketching, multi view drawings, pictorials, dimensioning theory and practice, sectional views, and auxiliary views.

EDDT 1040 CAD Level 1 – 3 credit hours

Will fill a Computer Literacy requirement. A course in the fundamentals of computer-aided drafting (CAD). This course will cover the interactive use of computers to carry out the tasks of design and drafting.

EDDT 1070 CAD Level 2 – 3 credit hours

Intro to 3-D Isometric oblique and axonometric drawing; revolutions, gear and cam work and other drafting work used in various branches of engineering. Industrial applications in machine drawings involving threads, fits, keys, working drawings and specifications. Technical thinking will be emphasized in the course work.

EDDT 1100 Residential Drafting and Design – 3 credit hours

Introduction to the basic principles of efficient house planning. Includes the preparation of floor plans, plot plan, elevations, details, and sections. Drawings will be CAD designed.

EDDT 2240 Surveying – 3 credit hours

A course in the fundamentals of surveying, including note keeping, leveling, property boundaries, cut and fills, slope staking, and plotting coordinates.

EDDT 2650 Mechanical Blueprint Reading – 2 credit hours

And introduction to blueprints, machine drawings, hydraulic drawings, electrical drawings, pipe-system drawings, and sketching where the student will identify and draw portions of the preceding.

EDDT 2977 Cooperative Education – 3-6 credit hours

Pre-engineering Work Experience. This course provides on the job experience for students majoring in pre-engineering. Positions as surveyor aids, engineer aids, etc., may be available. The student meets with instructor/coordinator and employer at the beginning and periodically during the course to determine and evaluate objectives, hours to be worked and credit agreement. Prerequisite: Instructor's permission.

EDDT 2988 Special Problems – 1-5 credit hours

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

3. Degrees and/or Certificates

The USU Eastern Drafting Department offers a one-year certificate of completion in Drafting Technology.

Utah State University Eastern
 Certificate of Completion in General Technology
Engineering, Drafting, and Design CC

Last Name:	First Name:	A#:
Advisor:	Origination Date:	Date of Last Revision:

Required General Education Courses (9 credit hours)	Credit Hours	Complete	Semester/Year Enrolled
<input type="checkbox"/> BUSN 2200 - Business Communications	3	<input type="checkbox"/>	
<input type="checkbox"/> BUSN 1050 – Business Mathematics -or- ELET 1110	3	<input type="checkbox"/>	
GE Credit hours:	6		

Required EDDT Courses (24 Credits Required)	Credit Hours	Competency I	Competency II	Competency III	Competency IV
<input type="checkbox"/> EDDT 1110 – Product Design for Additive	3	X	X	X	X
<input type="checkbox"/> EDDT 1010 – Technical Drafting	3		X	X	X
<input type="checkbox"/> EDDT 1040 – CAD Level I: Intro To CAD	3	X	X	X	X
<input type="checkbox"/> EDDT 1070 – CAD Level II: Advanced CAD	3	X	X	X	X
<input type="checkbox"/> EDDT 1100 – Residential Architectural Drafting	3	X	X	X	X
<input type="checkbox"/> EDDT 1200 – 3D Modeling	3	X	X	X	X
<input type="checkbox"/> EDDT 2620 – 3D Modeling Advanced	3	X	X	X	X
Electives:					
<input type="checkbox"/> EDDT 2240 – Surveying	3	X	X	X	X
<input type="checkbox"/> EDDT 1700 – Additive Manufacturing I	3	X	X	X	X
<input type="checkbox"/> EDDT 2700 – Additive Manufacturing II	3	X	X	X	X
Required Credit hours:	24				
TOTAL MINIMUM CREDIT HOURS	30				

Competency I – Students will have a comprehensive overview of Computer Aided Drafting Software.

Competency II – Students will foster an ability to think multi-dimensionally and abstractly through the design process.

Competency III – Students will be able to explain and demonstrate geometric mechanics in their drawing processes.

Competency IV – Students will be able to solve complex tasks and problems utilizing the design process and create viable solutions for their communities.

4. Program consistency with Institutional Mission & Goals

Student evaluations, internal (school) evaluations, Utah State Office of Education Accreditation evaluation, and industry demands confirm the department's role in maintaining consistency with the college's mission and goals.

5. Interaction with Other Programs on Campus

The Drafting Department faculty serve on various college committees as requested. In addition to this, departmental courses are offered that support other departments.

Machine Tool Technology	EDDT 1040 CAD Level 1: Intro to CAD EDDT 1200 3D Modeling (Solidworks) EDDT 2650 Blueprint Reading
Welding	EDDT 2650 Blueprint Reading
Additive Manufacturing	EDDT 1200 3D Modeling (Solidworks)
Drones	EDDT 1200 3D Modeling (Solidworks) EDDT 2240 Surveying
Automated Manufacturing	EDDT 1200 3D Modeling (Solidworks)

6. Drafting Department Advisory Committee

The department has employed the assistance of an advisory committee. The Engineering faculty has felt to believe that with the broadness of the many area supported by the engineering program, that an advisory committee would be beneficial. Subsequently, this report reflects a recent accreditation direction to organize as well as utilize an advisory committee.

7. Faculty

The drafting program instructor, Kimberly Horsley, holds an Associate of Science with an emphasis in Drafting Technology (2001). She is the Founder, Owner, Operator of Custom Home Solutions (2007).

8. Department Goals

- Further develop a plan to attract students and build enrollment
- Develop a plan to visit more high schools and improve recruitment
- Design departmental brochure to promote the drafting program
- Continually upgrade competency-based curriculum to help better train the students for industry
- Develop a CAD needs survey to be sent out to local industry

9. Methods of Teaching within the Department

The department uses various successful teaching methods. All course syllabi have been evaluated with special attention on outcomes assessment. Computer workstations were upgraded to provide a more state of the art work environment. The program integrates theory and practice to help students understand what they are doing as they develop skills. The department is equipped with the requisite audiovisual equipment appropriate for trade and technical instruction. Course work is structured so that students can have a great experience while learning this amazing field of industry.

10. Instructor Evaluation

Faculty are evaluated according to school policy by students and faculty. Faculty are required to submit an annual report which states improvements made in their respective programs and list self-improvements as well as community involvement. Additional evaluations are made at special classes and workshops to ensure quality of both teaching and course content. The division chair conducts an annual personal evaluation of the faculty member including an appraisal of teaching load.

11. Students

Students enrolling in this program are as diverse as the reasons for which they enroll. Almost all trade and technical programs require course work in CAD. The department has both traditional and non-traditional students enrolled in its program. In spite of recent difficulty in finding localized employment, many of the department graduates are successful in finding and maintaining employment.

Students have been placed with these companies:

- Morgantown
- UP&L
- Intermountain Electronics
- Kee Engineering
- Jones and DeMille Engineering
- Mine Systems
- Merit 3D
- Dustless Technologies

This program has a high number of students who accept employment prior to meeting graduation requirements, thus contributing to low graduation rates.

12. Program Support

The Library Learning Center creates an area the students benefit from the design tools available to them, i.e. 3-D printer, computers with different drafting software.

13. Physical Facilities and Equipment

The program is fortunate to be housed in a facility specifically designed for drafting. Access to a projection monitor has greatly enhanced CAD demonstrations. The newly updated broadcasting system has increased the ability to bring our courses to other institutions within the State.

Equipment/space status

Have: (16) Computer Stations
Laser Jet Printer
Plotter
(3) Resin 3D Printers
FDM 3D Printer
CO2 Laser Cutting Machine

14. Professional Development Funds

Professional development funds are adequate. Resources for faculty development opportunities are available through the Academic Provost office by application. Division funding for travel to conventions and workshops is also available.

15. Committee Response

Strengths:

- Number of computer stations
- AutoCAD, SolidWorks, Inventor, ArchiCAD, and Revit
- Improving enrollment
- Provides students with marketable skills