

Engineering Graphics and Design Technology

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Faculty:

Professor

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Advisory Committees:

Mechanical Drafting: Mike Thompson, Flowserve; Dan Olsen, Jason Associates Corporation.

Structural Drafting: Terry Beighley, Intermountain Bridge Detailers; David McGowan, Tectonix Steel, Inc.

Architectural Drafting: Kevin Madson, KMA & Associates; Paul Magleby, Paul Magleby Construction Inc.

Electrical Drafting: Keith Hegerhorst, Hegerhorst Power Engineering.

Civil Drafting: Alan York, Provo City; Clyde Naylor, Utah County; Matt Brown, M.W. Brown Engineering; Brant Tuttle, Northern Engineering.

School of Technology and Computing

Interim Dean: Ernest Carey

Office: CS 720
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CAREER OPPORTUNITIES

The Engineering Graphics and Design Technology program principally prepares students for drafting (mechanical, architectural, structural, civil, and / electronic) and surveying careers. Drafting jobs are available with architects, cities, counties, states, the federal government, engineering and surveying companies, mines, research and development companies, and the mechanical, structural steel, architectural development, and electronics, construction, and fire protection industries. In addition, because of the broad nature of the Engineering Graphics and Design Technology program, graduates are prepared to succeed in most technological fields. For example, they can work as manufacturing, industrial engineering, and construction technicians. They can also work in functional areas of purchasing, estimating, bidding, plant management, quality control, expediting, and sales.

JOB DESCRIPTION – ENGINEERING GRAPHICS AND DESIGN TECHNOLOGY

Engineering Graphics Technicians (formerly Drafters/Designers) translate ideas from design layouts, specifications, rough sketches, and calculations of engineers & architects into working drawings, maps, plans, and illustrations which are used in making products. They prepare 3D computer models and 2D drawings using Computer Aided Drafting, Design, and 3D modeling systems. They perform design and drafting work in mechanical, electrical/electronic, structural, architectural, civil, piping, and technical illustration fields. They make mathematical calculations related to the above fields using algebra, trigonometry, plane and solid geometry, applied mechanics, strength of materials and basic physics.

The Engineering Graphics Technician's job requires working closely with both professional and nonprofessional people. They also do liaison work between the shop or field and the engineering office. It is essential they be neat in appearance and develop professional work habits.

JOB DESCRIPTION – LAND SURVEYING

Engineering Graphics Technicians (formerly Drafters/Designers) translate ideas from design layouts, specifications, rough sketches, and calculations of engineers & architects into working drawings, maps,

plans, and illustrations which are used in making products. They prepare 3D computer models and 2D drawings using Computer Aided Drafting, Design, and 3D modeling systems. They perform design and drafting work in mechanical, electrical/electronic, structural, architectural, civil, piping, and technical illustration fields. They make mathematical calculations related to the above fields using algebra, trigonometry, plane and solid geometry, applied mechanics, strength of materials and basic physics.

Surveyors also work closely with the public so it is imperative that they develop good human relations skills and professional work habits.

PROGRAMS

Students in the Engineering Graphics and Design Technology program may earn an Associate in Applied Science Degree, an Associate in Science Degree with a drafting pre-major or a Bachelor of Science in Technology Management Degree in Drafting Technology.

Reminder: an overall grade point average of 2.0 (C) or above is required for graduation.

AAS in

Drafting Technology 63 Credits

General Education Requirements: 16 Credits

ENGLISH 2.0

- ENGL 1010 Introduction to Writing (3.0)
- ENGL 1060 Career Writing for Technology (3.0)
- ENGL 106A Career Writing for Technology--A (2.0)
- MGMT 2200 Business Communications (3.0)

MATHEMATICS

- EGDT 1600 Technical Math--Algebra 3.0
- or MATH 1050 College Algebra (4.0)
- EGDT 1610 Technical Math--Geometry/Trig 3.0
- or MATH 1060 Trigonometry (3.0)

HUMANITIES/FINE ARTS/FOREIGN LANGUAGE 3.0

- PHIL 2050 Ethics and Values (highly recommended) (3.0)
- Any approved Humanities, Fine Arts, or Foreign Language Distribution Course

SOCIAL AND BEHAVIORAL SCIENCE 2.0

- MGMT 3000 Organizational Behavior (3.0)
- Any approved Behavioral Science, Social, or Political Science

BIOLOGY OR PHYSICAL SCIENCE

- EGDT 1810 Principles of Technology 2.0

PHYSICAL EDUCATION/HEALTH/SAFETY OR ENVIRONMENT 1.0

- Any approved Physical Education, Health, Safety or Environment Course

Discipline Core Requirements: 39 Credits

- EGDT 1010 Electrical-Electronic Drafting 3.0
- EGDT 1040 Computer Aided Drafting--AutoCAD 3.0
- EGDT 1070 3 Dimensional Computer Modeling 3.0
- EGDT 1080 AutoLisp 2.0
- EGDT 1100 Architectural Drafting 3.0
- EGDT 1200 Mechanical Drafting 3.0
- EGDT 1300 Structural Drafting 3.0
- EGDT 1400 Surveying 4.0
- EGDT 2020 Descriptive Geometry 3.0
- EGDT 2040 Piping Drafting 2.0
- EGDT 2050 Plate Layout 2.0
- EGDT 2600 Statics 3.0
- EGDT 2610 Strength of Materials 3.0
- EGDT 2850 Cooperative Correlated Instruction/Orientation 0.5

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• EGDT 2860	Cooperative Correlated Instruction/SkillsUSA	0.5
• EGDT 2870	Portfolio and Career Preparation	1.0
Elective Requirements:		8 Credits
Choose three courses from the following list for a minimum of 8 credits:		
• EGDT 1060	MicroStation (2.0)	
• EGDT 2010	Advanced Electrical--CAD (2.0)	
• EGDT 2100	Advanced Architectural--CAD (3.0)	
• EGDT 2200	Advanced Mechanical--CAD (3.0)	
• EGDT 2300	Advanced Structural--CAD (3.0)	
• EGDT 2310	Structural Steel Modeling (3.0)	
• EGDT 2400	Surveying Applications (4.0)	
• EGDT 2710	Special Problems--Mechanical (2.0)	
• EGDT 2720	Special Problems--Surveying (2.0)	
• EGDT 2730	Special Problems--Civil Drafting (2.0)	
• EGDT 2740	Special Problems--Architectural (2.0)	
• EGDT 2750	Special Problems--Architectural Rendering (2.0)	
• EGDT 2760	Special Problems--Structural (2.0)	
• EGDT 2780	Special Problems--Electrical (2.0)	
• EGDT 281R	Cooperative Work Experience (1.0)	

Graduation Requirements:

- 1 Completion of a minimum of 63 semester credits.
- 2 Overall grade point average of 2.0 (C) or above. (Departments may require a higher GPA.)
- 3 Residency hours-- minimum of 20 credit hours through course attendance at UVSC.
- 4 Completion of GE and specified departmental requirements, including a portfolio and exit interview.

AS Pre Major in

Drafting Technology **61 CREDITS**

General Education Requirements: 35 Credits

• ENGL 1010	Introduction to Writing	3.0
• ENGL 2010	Intermediate Writing--Humanities/Social Sciences	3.0
or ENGL 2020	Intermediate Writing--Science and Technology (3.0)	

Complete one of the following: 3.0

• MATH 1030	Quantitative Reasoning (3.0)	
• MATH 1040	Introduction to Statistics (3.0)	
• MATH 1050	College Algebra (4.0)	

Complete one of the following: 3.0

• HIST 2700	US History to 1877 (3.0)	
and HIST 2710	US History since 1877 (3.0)	
• HIST 1700	American Civilization (3.0)	
• HIST 1740	US Economic History (3.0)	
• POLS 1000	American Heritage (3.0)	
• POLS 1100	American National Government (3.0)	

Complete the following:

• PHIL 2050	Ethics and Values	3.0
• HLTH 1100	Personal Health and Wellness	2.0
or PES 1097	Fitness for Life (2.0)	

Distribution Courses

• Biology	3.0
• Physical Science	3.0
• Additional Biology or Physical Science	3.0
• Humanities Distribution	3.0
• Fine Arts Distribution	3.0
• Social/Behavioral Science	3.0

Discipline Core Requirements: 16 Credits

• EGDT or related courses (1000 level or higher)	16.0
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Elective Requirements: 10 Credits

• Electives (1000 level or higher)	10.0
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Graduation Requirements:

- 1 Completion of a minimum of 61 semester credits.
- 2 Overall grade point average of 2.0 (C) or above. (Departments may require a higher GPA.)
- 3 Residency hours-- minimum of 20 credit hours through course attendance at UVSC.
- 4 Completion of GE and specified departmental requirements.

BS in Technology

Management **124 CREDITS**

The following Technical Area is available (see the Technology Management section of this catalog for complete degree requirement listings.)

Specialization in

Drafting Technology **45 Credits**

Emphasis Requirements: 45 Credits

Complete the following:

• EGDT 1010	Electrical-Electronic Drafting	3.0
• EGDT 1040	Computer Aided Drafting--AutoCAD	3.0
• EGDT 1070	3 Dimensional Computer Modeling	3.0
• EGDT 1080	AutoLisp	2.0

• EGDT 1100	Architectural Drafting	3.0
• EGDT 1200	Mechanical Drafting	3.0
• EGDT 1300	Structural Drafting	3.0
• EGDT 1400	Surveying	4.0
• EGDT 2020	Descriptive Geometry	3.0
• EGDT 2040	Piping Drafting	2.0
• EGDT 2050	Plate Layout	2.0
• EGDT 2600	Statics	3.0
• EGDT 2610	Strength of Materials	3.0
Complete 8 credits from the following:		8.0
• EGDT 1060	MicroStation (2.0)	
• EGDT 2010	Advanced Electrical--CAD (2.0)	
• EGDT 2100	Advanced Architectural--CAD (3.0)	
• EGDT 2200	Advanced Mechanical--CAD (3.0)	
• EGDT 2300	Advanced Structural--CAD (3.0)	
• EGDT 2310	Structural Steel Modeling (3.0)	
• EGDT 2400	Surveying Applications (4.0)	

Due to the technical nature of the material in the following courses, additional reading and math instruction may be required. More information will be given during advisement.

COOPERATIVE EDUCATION

Cooperative Education is highly recommended as an elective in these majors. Two credits may be applied towards graduation.

See Course Descriptions section of the catalog for detailed course information. This department manages the following course prefixes:

- ECT, Electronic and Computer Technology
- EGDT, Engineering Graphics and Design Technology
- TCT, Telecommunications Technology