

# ENGINEERING DESIGN GRAPHICS MECHANICAL SPECIALTY, ASSOCIATE OF APPLIED SCIENCE



## Program Information

All successful projects start with a good plan. For architects, engineering designers, CAD drafters, and builders, that plan comes in the form of working drawings produced by technically talented and well-trained individuals. If you have a desire to express your knowledge through computer-aided design software, San Jacinto College can give you the skills you need to make your way into this exciting field. This degree allows you to pursue careers that strike a satisfying balance between creativity, technical proficiency, and attention to detail. You can make yourself an indispensable asset in a variety of fields, such as architecture, manufacturing, engineering, construction, and the oil and gas industry, with a degree in engineering design graphics.

Central campus offers Engineering Design Graphics foundation courses: DFTG 1305 Introduction to Technical Drawing, DFTG 1409 Basic Computer-Aided Drafting, and DFTG 2317 Descriptive Geometry. Classes will be held in Building 45, the new Petrochemical, Energy, & Technology building. Students can check the online Schedule of Classes for days and times.

The Engineering Design Graphics (EDG) program at San Jacinto College:

- Trains students to translate the ideas of designers, engineers, and architects from rough sketches, design layouts, specifications, and calculations into working drawings, maps, plans, illustrations, and 3D models;
- Offers students the skills needed to prepare technical drawings and/or 3D models using Computer Aided Drafting (CAD), design, and 3D modeling software; and
- Offers degree plans in three areas:
  - a. Architectural/Civil/Structural
  - b. Mechanical
  - c. Petro/Industrial

## Career Opportunities

Growth in Houston's diversified job markets has created employment openings for drafters. Career opportunities for drafters are available in:

- Architecture;
- Engineering: Electrical, Instrumentation, Structural, Civil;
- Manufacturing;
- Oil, Energy, and Petrochemical; and
- Public Works.

## Earning Potential

Mechanical drafter: \$61,332<sup>1</sup> per year

<sup>1</sup> Source: [texaswages.com](http://texaswages.com) (<http://texaswages.com>), median salary Gulf Coast region, 2019

For more information, students may contact North campus, 281-998-6150, x7765; and South campus, 281-998-6150, x3587.

## Campuses

Central Campus  
North Campus  
South Campus

## Information

Engineering Design Graphics (EDG) is a technical field where engineering data is communicated through drawings and three-dimensional models. Drafters provide support to designers, architects, and all types of engineers, preparing documentation and creating finished drawings for production in the engineering, construction, or manufacturing industries. Drafters translate the ideas of engineers and architects from rough sketches, design layouts, specifications, and calculations into working drawings, maps, plans, illustrations, and 3D models that are used in producing marketable products. They prepare drawings and/or 3D models using computer-aided drafting, design, and 3D modeling software in the fields of mechanical, petrochemical, architectural, civil, and structural.

The EDG department provides several certificate levels and Associate of Applied Science (AAS) degree options. Working with local industry, courses have been clustered into specialty disciplines that provide concentration in specific areas of study. They include: Architectural/Civil/Structural, Mechanical, and Petro/Industrial.

## Plan of Study

Central, North, and South campuses

3DFT-M

First Term		Credits
DFTG 1305	Introduction to Technical Drawing	3
DFTG 1409	Basic Computer-Aided Drafting	4
Language, Philosophy, and Culture (Humanities) or Creative Arts (Fine Arts)		3
ENGL 1301	Composition I	3
<b>Credits</b>		<b>13</b>
Second Term		Credits
DFTG 1433	Mechanical Drafting	4
DFTG 1445	Parametric Modeling and Design	4
DFTG 2317	Descriptive Geometry	3
DFTG 2440	Solid Modeling/Design	4
<b>Credits</b>		<b>15</b>

**Summer Year One Term**

Speech		3
<b>Credits</b>		<b>3</b>

**Third Term**

DFTG 2402	Machine Drafting	4
DFTG 2406	Machine Design	4
DFTG 2450	Geometric Dimensioning and Tolerancing	4
MATH 1332 or MATH 1314	Contemporary Mathematics (Quantitative Reasoning) (or higher) or College Algebra	3
<b>Credits</b>		<b>15</b>

**Fourth Term**

DFTG 2435	Advanced Technologies in Mechanical Design and Drafting	4
DFTG 2458	Advanced Machine Design	4
DFTG 2386 or DFTG 2338	Internship-Drafting and Design Technology/ Technician <sup>1</sup> or Final Project - Advanced Drafting	3
Social and Behavioral Sciences or Government/Political Science or American History		3
<b>Credits</b>		<b>14</b>
<b>Total Credits</b>		<b>60</b>

**Capstone Experience:**<sup>1</sup> DFTG 2386 Internship-Drafting and Design Technology/Technician or DFTG 2338 Final Project - Advanced Drafting

<sup>1</sup> The course selected to satisfy the Capstone Experience (DFTG 2386 Internship-Drafting and Design Technology/Technician or DFTG 2338 Final Project - Advanced Drafting) can only be taken during or after the term in which the last required Engineering Design Graphics courses are completed.

Courses may be applied to earn the certificate of technology, then the level 2 certificate, and finally the Associate of Applied Science (AAS) degree when the courses are in the same specialty discipline.

Courses **do not** have to be taken in this order unless a course has a prerequisite.

For more detailed information on this program, contact the Department Chair or faculty.