

# ENGINEERING DESIGN GRAPHICS GENERAL, 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 LyondellBasell Center for 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; and
- Offers students the skills needed to prepare technical drawings and/or 3D models using Computer Aided Drafting (CAD), design, and 3D modeling software.

Students must select from one of the four areas:

- Architectural/Civil/Structural,
- General,

- Mechanical, and
- Petrochemical.

## 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

Drafter: \$60,6381 per year<sup>1</sup>

<sup>1</sup> Source: texaswages.com, median salary Gulf Coast region, 2021

For more information, students may contact North campus, 281-998-6350, x7765; Central campus, 281-476-1836; and South campus, 281-998-6350, 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 engineering.

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, General, Mechanical, and Petro/Industrial.

Students enrolling into San Jacinto College programs with external learning experiences (i.e., clinical, practicum, externship, cooperative, etc.) will be required to comply with the immunization requirements and policies of the clinical/external learning sites to engage in all clinical/external learning experiences. Vaccination requirements at clinical/external learning sites are implemented pursuant to the independent authority of such facilities and are not mandated by San Jacinto College. Failure to meet the immunization requirements mandated by clinical/external learning sites may limit a student's ability to complete the program and/or may delay the student's graduation date. San Jacinto College does not process exemptions, and students should address

potential vaccination exemptions directly with the clinical/external learning site.

<b>First Term</b>		<b>Credits</b>
DFTG 1305	Introduction to Technical Drawing	3
DFTG 1409	Basic Computer-Aided Drafting	4
ENGL 1301	Composition I	3
Language, Philosophy and Culture (Humanities) or Creative Arts (Fine Arts)		3
<b>Credits</b>		<b>13</b>
<b>Second Term</b>		
DFTG 1417	Architectural Drafting-Residential	4
DFTG 1445	Parametric Modeling and Design	4
DFTG 2423	Pipe Drafting	4
<b>Credits</b>		<b>12</b>
<b>Summer Year One Term</b>		
Social and Behavioral Sciences		3
Select one of the following:		3
SPCH 1311	Introduction to Speech Communication	
SPCH 1315	Public Speaking	
SPCH 1318	Interpersonal Communication	
<b>Credits</b>		<b>6</b>
<b>Third Term</b>		
DFTG 2407	Electrical Drafting	4
Select one course from the Electives list. (p. )		4
DFTG 2317	Descriptive Geometry	3
MATH 1332	Contemporary Mathematics (Quantitative or MATH 1314 Reasoning)	3
or College Algebra		
<b>Credits</b>		<b>14</b>
<b>Fourth Term</b>		
Select one course from the Electives list not previously selected. (p. )		4
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Select one course from the Electives list not previously selected. (p. )		4
DFTG 2386	Internship-Drafting and Design Technology/	3
or DFTG 2338	Technician <sup>1</sup>	
or Final Project - Advanced Drafting		
<b>Credits</b>		<b>15</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.

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

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

## Electives

<b>Code</b>	<b>Title</b>	<b>Credits</b>
ARCE 1415	Structural Steel Detailing	4
ARCE 1421	Architectural Illustration	4
ARCE 1452	Structural Drafting	4
DFTG 1430	Civil Drafting I	4
DFTG 1433	Mechanical Drafting	4
DFTG 2402	Machine Drafting	4
DFTG 2406	Machine Design	4
DFTG 2408	Instrumentation Drafting	4
DFTG 2421	Topographic Drafting	4
DFTG 2428	Architectural Drafting-Commercial	4
DFTG 2431	Advanced Technologies in Architectural Design and Drafting	4
DFTG 2435	Advanced Technologies in Mechanical Design and Drafting	4
DFTG 2440	Solid Modeling/Design	4
DFTG 2445	Advanced Pipe Drafting	4
DFTG 2450	Geometric Dimensioning and Tolerancing	4
DFTG 2457	Advanced Technologies in Pipe Design and Drafting	4
DFTG 2458	Advanced Machine Design	4