

ENGINEERING DESIGN GRAPHICS MECHANICAL SPECIALTY, LEVEL 2 CERTIFICATE



- 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 four areas:
 - a. Architectural/Civil/Structural
 - b. General
 - c. Mechanical
 - d. 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: \$71,109¹ per year

¹ Source: texaswages.com (<http://texaswages.com>), median salary Gulf Coast region, 2023

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

San Jacinto College offers four Level 2 Certificates, including: Architectural/Civil/Structural, General, Mechanical, and Petro/Industrial. The Level 2 Certificate is comprised of 45 semester credit hours (SCH) of Engineering Design Graphics (EDG) technical coursework, three (3) SCH of mathematics, and three (3) SCH of Speech for a total of 51 SCH. This is a fast-track award for those wishing to concentrate their studies in EDG and enter the job market as soon as possible.

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.

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 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;

Plan of Study

5DFT-M

| First Term | | Credits |
|------------------------------|---|-----------|
| DFTG 1305 | Introduction to Technical Drawing | 3 |
| DFTG 1409 | Basic Computer-Aided Drafting | 4 |
| Select one of the following: | | 3 |
| SPCH 1311 | Introduction to Speech Communication | |
| SPCH 1315 | Public Speaking | |
| SPCH 1318 | Interpersonal Communication | |
| SPCH 1321 | Business and Professional Speech | |
| Credits | | 10 |
| 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 |
| Credits | | 15 |
| Third Term | | Credits |
| 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 College Algebra | 3 |
| Credits | | 15 |
| Fourth Term | | Credits |
| 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 ² or Final Project - Advanced Drafting | 3 |
| Credits | | 11 |
| Total Credits | | 51 |

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

¹ 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.