

# TDCJ DRAFTING TECHNOLOGY

---

- TDCJ Drafting Technology AAS (<https://coursecatalog.tvcc.edu/tdcj-handbook/programs/drafting-technology/drafting-technology-aas/>)
- TDCJ Drafting Technology Certificate (<https://coursecatalog.tvcc.edu/tdcj-handbook/programs/drafting-technology/drafting-technology-certificate/>)

## **DFTG-1240. Introduction to Computer Aided Drafting. (2 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. Topics include CAD equipment, software selection and interface; setting up a CAD workstation; upgrading a computer to run advanced CAD software; storage devices; storing, retrieving, back-up and sharing databases; file servers and local area networks (LANs); and transferring drawing files over the Internet.

## **DFTG-1309. Basic Computer Aided Drafting. (3 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot/print to scale.

## **DFTG-1333. Mechanical Drafting. (3 Credits)**

(3-2-4) This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection and pictorial drawings. Lab fee.

## **DFTG-1417. Architectural Drafting, Residential. (4 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. Architectural drafting procedures, practices, terms, and symbols. Preparation of detailed working drawings for residential structure. Emphasis on light frame construction methods. Lab fee.

## **DFTG-1457. Specialized Intermediate Computer Aided Draft. (4 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. A continuation of practices and techniques used in Specialized Basic Computer-Aided Drafting. Emphasizes advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, interfacing two-dimensional (2D) and/or three-dimensional (3D) environments and extracting data.

## **DFTG-2438. Final Project, Advanced Drafting. (4 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. A drafting course in which students participate in a comprehensive project from conception to conclusion.

**DFTG-2440. Solid Modeling/Design. (4 Credits)**

This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work.

**POFT-1321. Business Math. (3 Credits)**

(3-3-0) This course is taken for academic credit. Students will earn an A, B, C, D, F, or W. Fundamentals of business mathematics including analytical and critical thinking skills.

**WHAT DRAFTERS DO**

Drafters use software to convert the designs of architects and engineers into technical drawings. Most workers specialize in architectural, civil, electrical, or mechanical drafting and use technical drawings to design everything from microchips to skyscrapers.

**DUTIES**

Drafters typically do the following:

- Design plans using computer-aided design (CAD) software
- Work from rough sketches and specifications created by engineers and architects
- Design products with engineering and manufacturing techniques
- Add details to architectural plans from their knowledge of building techniques
- Specify dimensions, materials, and procedures for new products
- Work under the supervision of engineers or architects

Some drafters are referred to as *CAD operators*. Using CAD systems, drafters create and store technical drawings digitally. These drawings contain information on building a structure or machine, the dimensions of the project, and what materials are needed to complete the project.

Drafters work with CAD to create schematics that can be viewed, printed, or programmed directly into building information modeling (BIM) systems. These systems allow drafters, architects, construction managers, and engineers to create and collaborate on physical buildings and machines' digital models. Through three-dimensional rendering, BIM software allows designers and engineers to see how different elements in their projects work together.

The following are examples of types of drafters:

**Architectural drafters** draw structural features and details for buildings and other construction projects. These workers may specialize in a type of building, such as residential or commercial. They may also specialize by the materials used, such as steel, wood, or reinforced concrete.

**Civil drafters** prepare topographical maps used in construction and civil engineering projects, such as highways, bridges, and dams.

**Electrical drafters** prepare wiring diagrams that construction workers use to install and repair electrical equipment and wiring in power plants, electrical distribution systems, and residential and commercial buildings.

**Electronics drafters** produce wiring diagrams, assembly diagrams for circuit boards, and layout drawings used in manufacturing and installing and repairing electronic devices and components.

**Mechanical drafters** prepare layouts that show the details for various machinery and mechanical tools and devices, such as medical equipment. These layouts indicate dimensions, fastening methods, and other requirements for assembly. Mechanical drafters sometimes create production molds.

## SUMMARY

- Drafters
- 2020 Median Pay: \$57,960 per year, \$27.87 per hour
- Typical Entry-Level Education: Associate's degree
- Work Experience in a Related Occupation: None
- On-the-job Training: None
- Number of Jobs, 2020: 191,800
- Job Outlook, 2020-30: -2% (Decline)
- Employment Change, 2020-30: -3.600

## WORK ENVIRONMENT

Although drafters spend much of their time working on computers in an office, some may visit jobsites to collaborate with architects and engineers. Most drafters work full time.

## HOW TO BECOME A DRAFTER

Drafters typically complete education after high school, often through a community college or technical school program. Some programs lead to an associate of applied science in drafting or a related degree. Others result in a certificate or diploma.

## PAY

The median annual wage for drafters was \$57,960 in May 2020.

## JOB OUTLOOK

Employment of drafters is projected to have a 2% decline from 2020 to 2030. Increased construction activity is projected to drive demand for drafters, but this is expected to be tempered as engineers and architects increasingly perform some tasks previously done by drafters.

## STATE & AREA DATA

Explore resources for employment and wages by state and area for drafters.

## **SIMILAR OCCUPATIONS**

Compare the job duties, education, job growth, and pay of drafters with similar occupations.

## **MORE INFORMATION, INCLUDING LINKS TO O\*NET**

Learn more about drafters by visiting additional resources, including O\*NET, a source of workers and occupations' key characteristics.

## **SUGGESTED CITATION:**

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Drafters,

on the Internet at <https://www.bls.gov/ooh/architecture-and-engineering/drafters.htm> (visited March 23, 2021).

Some careers in this field will require a bachelor's degree.

- TVCC's AA degrees are fully transferable to public universities in Texas. See an academic advisor for more information on this transfer opportunity.
- Many of TVCC's AAS degrees lead to an online Bachelor of Applied Arts and Sciences (BAAS) degree with participating universities. See an academic advisor for more information on this transfer opportunity.