



Drafting and Design Technology/Technician, General CIP Code 15.1301

Introduction – Program of Study

Drafters prepare technical drawings and plans, which are used to build everything from manufactured products such as toys, toasters, industrial machinery, and spacecraft to structures such as houses, office buildings, and oil and gas pipelines. In the past, drafters sat at drawing boards and used pencils, pens, compasses, protractors, triangles, and other drafting devices to prepare a drawing by hand. Today, most drafters use Computer Aided Design and Drafting (CADD) systems to prepare drawings.

With CADD systems, drafters can create and store drawings electronically so they can be viewed, printed, or programmed directly into automated manufacturing systems. CADD systems also permit drafters to quickly prepare variations of a design. Although drafters use CADD extensively, it is only a tool. Drafters still need knowledge of traditional drafting techniques, in addition to CADD skills. Despite the nearly universal use of CADD systems, manual drafting and sketching are used in certain applications.

Architectural and civil drafters provide detailed drawings of a diverse range of architectural and structural aspects of bridges, highways, and buildings. Electrical and electronics drafters are responsible for the preparation of wiring diagrams, circuit board assembly diagrams and other drawings associated with the manufacture or repair of electrical products. Mechanical drafters provide drawings of mechanical devices, such as furniture, automobile bodies, furnaces, machinery, and manufacturing equipment.

Drafters usually work in comfortable offices. They may sit at adjustable drawing boards or drafting tables when doing manual drawings, although most drafters work at computer terminals. Because they spend long periods in front of computers doing detailed work, drafters may be susceptible to eyestrain, back discomfort, and hand and wrist problems. Many drafters work a standard 40 hour week.

Employers prefer applicants who have completed postsecondary school training in drafting, which is offered by technical institutes, community colleges, and various four year colleges and universities. Many four year colleges do not offer training in drafting, but they do offer classes in engineering, architecture, and mathematics that are useful for obtaining a job as a drafter. Technical training obtained in the Armed Forces can be applied in civilian drafting jobs. Some additional training may be necessary, depending on the technical area or military specialty.

Employers are interested in applicants with sharp drafting and mechanical drawing skills; keen knowledge of drafting standards, mathematics, science, and engineering technology; and, a solid background in CADD techniques. High school courses in mathematics, science, computer technology, design, computer graphics, and drafting are useful for people considering a drafting career.

Assumptions of this Program of Study

High quality programs should meet the following standards:

1. Promote positive working relationships.
2. Implement a curriculum that fosters all areas of skill development
3. Use appropriate and effective teaching approaches.
4. Provide ongoing assessments of student progress.
5. Employ and support qualified teaching staff.
6. Establish and maintain relationships and use resources of the community.
7. Provide a safe and healthy learning environment.
8. Implement strong program organization and supervision policies that result in high quality teaching and learning.
9. Integrate academic skills and aptitudes necessary for postsecondary education, gainful employment and a foundation of lifelong learning.

CIP Code

15.1301 Drafting and Design Technology/Technician, General

This is an instructional program that generally prepares individuals to apply technical knowledge and skills as each relates to gathering and translating of data or specifications including basic aspects of planning, preparing and interpreting mechanical, architectural, chemical, structural, civil, pneumatic, marine, electrical/electronic, topographical and other drawings and sketches used in various engineering fields. Instruction is designed to provide experiences in drawing and CADD; the use of reproduction materials, equipment and processes; the preparation of reports and data sheets for writing specifications; the development of plan and process charts indicating dimensions, tolerances, fasteners, joint requirements and other engineering data; the development of models; and drafting multiple view assembly and subassembly drawings as required for manufacture, construction and repair of mechanisms.

For more information, contact:

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