



## **Electrical, Electronic and Communications Engineering Technology/Technician CIP Code 15.0303**

### **Introduction – Program of Study**

Engineering technicians use the principles and theories of science, engineering, and mathematics to solve technical problems in research and development, manufacturing, sales, construction, inspection, and maintenance. Their work is more narrowly focused and application oriented than that of scientists and engineers. Many engineering technicians assist engineers and scientists, in their area of expertise. Others work in quality control, inspecting products and processes, conducting tests, or collecting data. In manufacturing, they may assist in product design, development, or production.

Engineering technicians who work in research and development build or set up equipment, prepare and conduct experiments, collect data, calculate or record results, and help engineers or scientists in other ways, such as making prototype versions of newly designed equipment. They also assist in design work, often using computer aided design and drafting (CADD) equipment. Many engineering technicians specialize in various disciplines, such as electrical engineering, electromechanical, or electrical and electronics drafting fields.

Electromechanical engineering technicians combine knowledge of mechanical engineering technology with knowledge of electrical and electronic circuits to design, develop, test, and manufacture electronic and computer controlled mechanical systems. Robotics technicians assist in building, installing or testing robotic equipment or related automated systems.

Many engineering technicians enter the occupation with an associate degree in engineering technology. Training is available at technical institutes, community colleges, extension divisions of colleges and universities, public and private vocational technical schools, and in the Armed Forces. Because the type and quality of training programs vary considerably, prospective students should carefully investigate training programs before enrolling.

Although it may be possible to qualify for certain engineering technician jobs without formal training, many employers prefer to hire an individual with a two year associate degree in engineering technology.

Career and technical education schools, another source of technical training, include postsecondary public institutions that serve local students and emphasize training needed by local employers. They require a high school diploma or its equivalent for admission.

Other training in technical areas may be obtained in the Armed Forces. Many military technical training programs are highly regarded by employers. However, skills acquired in a military program are often narrowly focused and may be of limited applicability in civilian industry, which often requires a more diverse training. Therefore, some additional training may be needed, depending on the acquired skills and the nature of the job.

### **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**

#### **15.0303 Electrical, Electronic and Communications Engineering Technology/Technician**

This is an instructional program that prepares individuals to apply basic electronic principles and technical skills to the production, calibration, estimation, testing, assembling, installation and maintenance of electronic equipment. Emphasis is on passive components and solid state devices; digital circuits; optoelectronic devices; operational amplifiers; audio amplifiers; oscillators; power supplies; and AM, FM and PCM modulators. Knowledge is acquired through theoretical instruction, experimentation and hands on activities. Instruction will develop basic levels of knowledge, understanding and associated skills essential for entry level employment in communications, industrial electronics, digital processing, robotics, avionics, biomedical technology and other electronics occupations.

#### **For more information, contact:**

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