



# ENGINEERING TECHNOLOGY Manufacturing Engineering Technology

**M**anufacturing 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 practically oriented than that of scientists and engineers. Many engineering technicians assist engineers and scientists, especially in research and development. Others work in quality control – inspecting products and processes, conducting tests or collecting data. In manufacturing, they may assist in product design and development, process design or production.

Manufacturing engineering technicians study the efficient use of personnel, materials and machines in factories, stores, repair shops and offices. They prepare layouts of machinery and equipment, plan the flow of work, make statistical

studies and analyze production costs. They may work with computer numerically controlled systems in industries like plastics and metalworking.

Manufacturing engineering technicians help engineers design, develop, test and manufacture industrial machinery, mechanical parts and other equipment. They make sketches and rough layouts, record data, make computations, analyze results and write reports. When planning production, mechanical engineering technicians prepare layouts and drawings of the assembly process and of parts to be manufactured. They estimate labor costs, equipment life and plant space. Some test and inspect machines and equipment in manufacturing departments or work with engineers to eliminate production problems.

## Job Outlook

Overall employment of engineering technicians is expected to grow seven percent between 2006 and 2016, about as fast as the average for all occupations. Competitive pressures will force companies to improve and update manufacturing facilities and product designs, resulting in more jobs for engineering technicians. Growth of engineering technician employment in some design functions may be dampened by increasing globalization of the development process. However, much of the work of engineering technicians requires on-site presence, so demand for engineering technicians within the U.S. should continue to grow-particularly in the environmental, civil, and industrial specialties. Because engineering technicians work closely with engineers, employment of engineering technicians is often influenced by the same local and national economic conditions that affect engineers. As a result, the employment outlook varies with industry and specialization.

## Earnings

Median annual earnings in May 2006 of engineering technicians by specialty are shown in the following tabulation. Aerospace engineering and operations technicians \$53,300. Electrical and electronic engineering technicians 50,660. Industrial engineering technicians 46,810. Mechanical engineering technicians 45,850. Electro-mechanical technicians 44,720. Civil engineering technicians 40,560. Environmental engineering technicians 40,560.

## Related Careers

- Automation engineering technology
- Electronic engineering technology
- Welding technology

# Manufacturing Engineering Technology Careers

## Educational Opportunities in Manufacturing Engineering Technology at LCCC

### *Certificate of Proficiency in Manufacturing Engineering Technology – Computer Aided Design Operator*

This program provides students with the knowledge and cognitive skills necessary for the competent performance as an entry-level CAD operator. This program may be completed in one year, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the certificate of proficiency in manufacturing engineering technology – computer aided design operator program complete courses in computer-aided design, math, technology, computer-aided machining, English and quality assurance.

### *Certificate of Proficiency in Manufacturing Engineering Technology – Computer Aided Machining Operator*

This program provides students with the knowledge, skills and competencies in programming, set-up and operating CNC machines in a manufacturing setting. This program may be completed in one year, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the certificate of proficiency in manufacturing engineering technology – computer aided machining operator program complete courses in computer-aided design, math, technology, computer-aided machining, English and quality assurance.

### *Certificate of Proficiency in Manufacturing Engineering Technology – Quality Control*

This program provides students with the knowledge and cognitive skills required to work as quality-control inspectors. Graduates may assist quality engineers in basic engineering and statistical process control charting. This program may be completed in one year, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the certificate of proficiency in manufacturing engineering technology – quality control program complete courses in computer-aided design, math, quality assurance, technology and English.

### *Associate of Applied Science in Manufacturing Engineering Technology – Computer Aided Machining*

This program prepares students with the knowledge, skills and hands-on experience needed to program, set up and operate computer numerically controlled (CNC) machines, specifically the Machining and Turning Center. This program may be completed in two years, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the associate of applied science in manufacturing engineering technology – computer aided machining program complete courses in computer-aided design, English, math, technology, computer-aided machining, quality assurance, physics and electronics.

### *Associate of Applied Science in Manufacturing Engineering Technology – Mechanical Design*

This program provides students with the knowledge and cognitive skills necessary for the competent performance as an entry-level mechanical drafter/designer or computer-aided design operator. This program may be completed in two years, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the associate of applied science in manufacturing engineering technology – mechanical design program complete courses in computer-aided design, math, technology, computer-aided machining, engineering mechanics, English, physics, electronics and quality assurance.

### *Associate of Applied Science in Manufacturing Engineering Technology – Quality Assurance*

This program provides students with the knowledge and cognitive skills necessary for the computer proficiencies as an entry-level quality technician. This program may be completed in two years, if taken on a full-time basis. Many students choose to study on a part-time basis. Students in the associate of applied science in manufacturing engineering technology – quality assurance program complete courses in computer-aided design, math, quality assurance, technology, English, physics, computer-aided machining and electronics.

## Other Educational Opportunities in Engineering Technology at LCCC

- Certificate of proficiency in electronic engineering technology – computer maintenance and networking
- Associate of applied science in automation engineering technology – maintenance/repair
- Associate of applied science in automation engineering technology – systems specialist
- Associate of applied science in electronic engineering technology – applied electronics
- Associate of applied science in electronic engineering technology – computer maintenance and networking
- Associate of applied science in welding technology

## Educational Opportunities through LCCC's University Partnership

### **University of Akron**

#### *Bachelor of Science in Automated Manufacturing Engineering Technology*

Many manufacturing companies in Ohio and nationwide are providing career opportunities for highly trained professionals in the field of production supervision and management, quality assurance, production control, manufacturing, and plant engineering — all positions filled by graduates of The University of Akron's bachelor of science in automated manufacturing engineering technology program. Companies want and need technically qualified people to help them compete at the highest possible levels of quality and productivity in today's extremely competitive world marketplace.

## About Lorain County Community College

Lorain County Community College is one of Ohio's leading colleges delivering distance learning education via the Internet. The College has expanded its delivery of its programs and services through the opening of the Learning Center at St. Joseph Community Center in Lorain, the LCCC Wellington Center, Lorain County Growth Partnership in downtown Elyria and the Midpoint Campus Center in Brunswick. Partnerships with Lorain County's K-12 school districts have also led to important developments for the community. More than 1300 high school students participate in the Post Secondary Enrollment Options program by enrolling in LCCC classes, making LCCC the state's largest community college provider of PSEO. More than 35 percent of Lorain County's top high school graduates choose to attend LCCC.

LCCC is one of Ohio's fastest growing colleges because of the variety of learning opportunities it provides. Students can choose from more than 80 educational programs. Students can complete the first half — and sometimes more — of a bachelor's degree. The University Partnership brings eight universities to the LCCC campus offering 37 bachelor's and master's degree programs. With the University Partnership at LCCC, the College partners with the state's finest universities to bring the best in bachelor's and master's degree programs right to the LCCC campus. Students can earn degrees that get them jobs immediately. Students can upgrade, retrain and improve current life skills. Students can learn in the classroom, at home and over the Internet.

LCCC offers a complete college experience. We understand that there's more to college life than attending classes. We offer many of the programs, sports, and activities available at large four-year universities and colleges. But, students will not have to stand in line behind juniors and seniors in the classroom, on the playing field, or in leadership positions. Students can immediately act in a play, sing in a musical group, serve as editor for the college newspaper, plan social activities, compete on the playing field, or set policy as a student government member.

In addition to providing a great education for those who enter college with aspirations of a degree, LCCC helps those who have changed their career goals, who want to broaden their horizons, and who want to return to work. LCCC provides learning and training for those who want to move up but find they need new or improved skills for the kind of professional opportunities they seek.

LCCC faculty is recognized locally and nationally for their work as professors and in other areas. They all have advanced degrees and real-world experience and understand their primary responsibility at LCCC is to teach classes. Classes are small. Individual attention is plentiful.

An LCCC education, prepares students for real jobs and real futures. To find out more, call (800) 995-LCCC or visit LCCC's Connections Center, the Learning Center at St. Joseph Community Center in Lorain, the LCCC Learning Center in Wellington, the Lorain County Growth Partnership in downtown Elyria or the Midpoint Campus Center in Brunswick for all of your enrollment service needs, including admissions, registration, advising and counseling.



**Lorain County  
Community College**



**The University  
Partnership**

*of Lorain County Community College*

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