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The Lima News

THE JOB CENTER

MANUFACTURING ENGINEERING TECHNOLOGY

Colin Clute, a 2008 graduate of West Liberty-Salem High School and Ohio Hi Point's Engineering Tech Prep program is working in the manufacturing lab at Rhodes State College. Colin States that being in a Tech Prep program in high school really gave him a leg up on college. "The college credits I earned at Ohio Hi Point allowed my college schedule to be a little more flexible." He also states that by earning those college credits in high school he was able to save money on tuition and made him eligible for the Tech Prep scholarship. Colin's career pathway includes receiving his Bachelor's degree in Electro-Mechanical Engineering through the Miami University program at Rhodes State College.

Where does one start? The field identified as manufacturing engineering technology consists of many different areas. What's not in a name then? Depending on availability of jobs, a manufacturing technician may be called any of the following engineering technicians: mechatronic or electromechanical, mechanical, or computer-control operators and design technicians. A short description of each follows.

Mechatronic or Electromechanical Engineering Technicians combine fundamental principles of mechanical engineering technology with knowledge of electrical and electronic circuits to design, develop, test, and manufacture electrical and computer-controlled mechanical systems. These technicians learn to troubleshoot, operate and improve all manner of robotics and automated equipment. You will find them employed in virtually all advanced manufacturing facilities.

Mechanical Engineering Technicians help engineers to design, develop, test, and manufacture industrial machinery, consumer products, and other equipment. They may assist in product tests—by setting up instrumentation for auto crash tests, for example. They may 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 or work with engineers to eliminate production problems.

Computer-Control Programmers and Operators use computer numerically controlled (CNC) machines to cut and shape precision products, such as automobile parts, machine parts, and compressors. Computer-control programmers and operators have excellent job opportunities as can be seen by the number of positions posted each week in the classifieds jobs section of the newspaper. Due to the limited number of people entering training programs, employers are expected to continue to have difficulty finding workers with the necessary skills and knowledge. High school or vocational school courses in mathematics (trigonometry and algebra), blueprint reading, computer programming, metalworking, and drafting are recommended. Classroom instruction includes math, physics, programming, blueprint reading, CAD software, safety, and shop practices. Skilled computer-control programmers and operators need an understanding of the machining process, including the complex physics that occur at the cutting point. Thus, most training programs teach CNC operators and programmers to perform operations on manual machines prior to operating CNC machines. A growing number of computer-control programmers and operators receive most of their formal training from community or technical colleges.

Design Engineering Technicians use various Computer-Aided-Design (CAD) software packages to document and describe equipment, parts, products, houses, interiors and even landscapes to those building, buying or selling the products. These technicians create detailed drawings, assembly drawings, bill-of-materials and solid models of objects and machines. These jobs allow a person to utilize their creativity and technical expertise in both engineering and non-engineering fields.

JOBS IN THIS FIELD

Job titles	Salary range*
Median annual earnings of manufacturing engineering technicians by specialty is shown in the following tabulation.	
Mechanical engineering technicians	$48,000
Mechatronics/Electro-Mechanical Technicians	$46,310
CNC Operating technicians	$37,850
Design Engineering Technicians	$36,850

*Salaries may vary depending on region and experience.
Sources: Data is pulled from U.S. Department of Labor's Bureau of Labor Statistics

SKILLS REQUIRED

Engineering Technologists must have application-oriented scientific and mathematical backgrounds as well as creative minds. Most engineering technologies are requiring the use of computers to some degree.

WHERE/HOW TO GET TRAINING

Schooling

Engineering technicians are usually trained in two years. In some cases it is best for students to enroll in career center tech prep programs to get a head start in their profession. Engineering technology associate degree programs are found in many technical and community colleges. Many associate degree programs are offering internship opportunities as part of the college experience. There are many opportunities for associate degree graduates to enroll in 2+2 programs at colleges and universities with engineering technology bachelor degrees. Students with the mathematics aptitude can move onto traditional engineering degrees after two-year degrees. High school students interested in pursuing a career in engineering technology should take as many science and math classes as possible.

Financial Aid

Grants, scholarships, loans, and work/study programs are available for college students. For most of this aid, high school seniors must submit a Free Application for Federal Student Aid, which is available from high school guidance offices and higher education financial aid offices.

For more information on federal financial aid programs, or to apply electronically, visit the U.S. Department of Education's Web site at http://www.ed.gov.

For more information on federal financial aid programs, call (800) 4FEDAID

FUTURE JOB OPPORTUNITIES

The West Central Ohio Manufacturing Consortium (WCOMC) represents manufacturers in 5 counties of this region. Its purpose is to promote advanced manufacturing and create a prepared pool of qualified employees in the region.

Currently, members include Ada Stampings, Ametek Westchester Plastics, Aircraft Dynamics, CAPT, Crown Equipment, Dana Corp., Diamond Machine, Hirzel Canning, Iams, Minster Machine, Gasdorf, PCS, P&G, Husky Lima Refinery, ProTec Coating, General Dynamics, Heat Treating Technologies, International Paper, Miller Precision, MetoKote, Randall Bearings, Rudolph Foods, U. S. Plastic, WC Wood and American Trim.

Students interested in a career in manufacturing may enter the WCOMC's pathways program, where credentials would be available to WCOMC members through the consortium's website. Whenever a member is hiring, the student's records would be among the first to be reviewed for consideration for employment.

WCOMC members have repeatedly stated that there is high demand for persons with advanced training and credentials in manufacturing. For more information on how you can become part of the WCOMC pathways program, and enhance your link with these manufacturers, phone 419-

RESOURCES - HOW TO FIND OUT MORE

ONLINE:

- www.asee.org (American Society for Engineering Education)
- www.abet.org (Accreditation Bureau of Engineering Technology)
- www.nait.org (National Association of Industrial Technology)
- www.ohiotechcareers.org (Ohio Tech Careers Eng & Industrial Tech Programs)

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