ADVANCED MANUFACTURING

Occupational Outlook

What Manufacturing Production Technicians Do

Manufacturing Production Technicians perform a variety of tasks in their daily job. Some common tasks include inspecting finished products for quality and adherence to customer specifications, setting up and operating production equipment in accordance with good manufacturing practices and standard operating procedures and calibrating or adjusting equipment to ensure quality production using tools such as calipers, micrometers, height gauges, ring gauges and protractors.

Education

Post-secondary certificates are common for this field. Some students continue on to obtain their Associate's degree and a few continue on to receive their Bachelor's degree.

Pay

The median annual wage for manufacturing production technicians was $61,269 in 2015. Entry-level wages are often lower than the median.

Skills

- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions.
- Active Listening – Giving full attention to what other people are saying, taking the time to understand the points being made, asking questions as appropriate and not interrupting at inappropriate times.
- Equipment Maintenance – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Work Activities

- Making Decisions and Solving Problems
- Controlling Machines and Processes
- Obtaining Information
- Communicating with Supervisors, Peers or Subordinates
- Monitor Processes, Materials or Surroundings

Source: onetonline.org

INDUSTRIAL DESIGN MANUFACTURING

INDUSTRIAL TECHNOLOGY: MANUFACTURING TECHNOLOGY CERTIFICATE

36 credits

This certificate program prepares individuals to enter the manufacturing workforce by teaching basic skills needed in the use of lathes and milling machines, while also providing the educational background for those students who want to continue into a second year of study in Industrial Technology: Manufacturing or Industrial Design.

ADVANCED MANUFACTURING

CERTIFIED PRODUCTION TECHNICIAN

WorkKeys Assessments: AM (level 4); LI (level 4): RI (level 4)

Local manufacturers, educational institutions and Ulster County Office of Employment and Training have partnered together to create a pipeline of skilled workers to meet the hiring needs of manufacturing employers and to prepare local job seekers with the skills needed to get self-sufficient jobs in manufacturing. This program consists of four individual certificate modules listed below. Students will register for both the WorkKeys Assessment and the Certified Production Technician. Suggested prerequisites: 9th grade math and 10th grade English.

DCB 1846-05	**WorkKeys**		**Open enrollment**		**FREE**
DCB 1786-09	**T/R**	**3/7–4/13**	**1–4pm**	**KSU**	**$1,299**
DCB 1786-10		**Starts 6/27**		**KSU**	**$1,299**
MFG101		**Call for start date**		**KSU**	**$1,328**

Class time above does not include assessments. Students will schedule assessments with proctor. Course price includes four assessments. Any additional assessments that students need will be $65 ea.

CERTIFIED PRODUCTION TECHNICIAN

DCB 1846-05	**ONLINE**	**WorkKeys**	**Open enrollment**	**FREE**
DCB 2099-01	**ONLINE**		**Open enrollment**	**$1,299**

SAFETY CERTIFICATE

Students are provided with an introduction to the manufacturing world and safe work practices in industrial environments. Students are introduced to manufacturing specializations such as mechatronics, precision machining and welding and continue on to discuss fire safety, pressurized gases, electrical hazards, and safe machine usage. Students will also become acquainted with OSHA policy.

MANUFACTURING PROCESSES & PRODUCTION CERTIFICATE

Students learn about the varying types of production and about the materials used in production. They will become familiar with the types of processes used in manufacturing including machining, casting and assembly.

QUALITY PRACTICES & MEASUREMENT CERTIFICATE

Students are given an introduction to controlling and improving quality in a manufacturing setting. They explore ways in which manufacturers utilize data to improve quality and introduces students to lean manufacturing techniques. The course includes sections on precision measurements, tools, and blueprint reading.

MAINTENANCE AWARENESS CERTIFICATE

Students are given a basic understanding of tools and equipment used in manufacturing. The course includes an overview of equipment for welding, electrical, pneumatic, and hydraulic systems, bearings and couplings, and belt and chain drives. Students are also provided with knowledge of how to improve productivity through predictive and preventive maintenance.

CERTIFIED PRODUCTION TECHNICIAN HANDS-ON ADD-ONS

Students who successfully complete the Certified Production Technician program have the option of applying to go on with Machining and Production I, CNC Machining and Mastercam®.
For more information on these courses, contact Barbara Reer at 845-802-7171.

MACHINING & PRODUCTION I

Hands-on study of machine shop practices is provided in this course, together with care of precision instruments, maintenance of lathes and milling machines, operation of lathe controls, filing, deburring, polishing, use of digital readout, use of micrometer, dial indicators, and pitch micrometers.

CNC OPERATOR II

This course provides students with entry level CNC machine operating skills. Course includes an introduction to CNC machining including shop safety, blueprint reading, precision measurements and CNC operation.

MASTERCAM®

Learn the software used by professionals in the manufacturing industry in this 30-hour course. Mastercam® is a computer-aided design (CAD) program. The software helps CNC programmers create mechanical drawings and machine parts using 3-D wire frame models.

ADVANCED MANUFACTURING

MECHATRONICS FUNDAMENTALS – PART I & II

WorkKeys Assessments: AM (level 5); LI (level 4): RI (level 4)

This four-course credential program is intended for students with some manufacturing skills or applicable military skills and prepares graduates for entry-level positions in local manufacturing companies that utilize automated, computer controlled production systems. Program ends with the ACT National Career Readiness Credential assessment.

DCB 2073-03 **See individual course schedules below.** **$1,226**

MECHATRONICS FUNDAMENTALS - PART I

MATHEMATICS FOR MANUFACTURING

Strengthen mathematic skills needed for the set-up and operation of machine tools and computer numerical control (CNC) programming. Mathematical operations including fractions, exponents, basic algebra and trigonometry will be reviewed. Prerequisite: Basic Mathematics. **Instructor: R. Eckmann**

DCB 2064-02	**T**	**1/31–3/7**	**6:30–8:30pm**	**KSU**	**$199**

INTRODUCTION TO BLUEPRINT READING

Participants will learn to identify the essential details and interpret the dimensions and tolerances found on engineering drawings. Actual blueprints for hands-on study will be available. This hands-on program will enable participants to accurately and effectively use blueprints to obtain the information they need to do their jobs. Course is geared for machine operators, quality control inspectors, shop supervisors, metalworking manufacturing personnel, engineering managers, and other manufacturing persons interested in learning to read manufacturing prints or updating their knowledge in this area. **Instructor: R. Engle**

DCB 1259-07	**R**	**2/9–3/16**	**6:30–8:30pm**	**KSU**	**$249**

ELECTRICAL THEORY I BASICS

Learn electrical theory basics for a variety of professional fields including the manufacturing field. Course will cover basic electrical distribution, identifying and selecting electrical equipment, sizing wires and overcurrent protection, an introduction to the National Electrical Code, installing wires and conduit, theory of series and parallel circuits and measuring voltage and current. This course includes a lab component.

Instructor: J. Novak

DCB 1947-30	**T/R**	**3/21–4/4**	**6-9pm**	**KSU**	**$149**

MECHATRONICS FUNDAMENTALS - PART II

PROGRAMMABLE LOGIC CONTROLLERS (PLC) - I

This course contains an overview of Allen Bradley controller architecture, hardware, programming, ladder logic and troubleshooting. The course includes a hands-on lab component. Course is appropriate for engineering students who are looking to gain knowledge in this area as well as for engineers looking for professional development hours. This course includes a lab component. **Instructor: D. Lord**

Suggested Prerequisite: Electrical Theory (see above)

Approved for 24 PDHs • Equipment: Laptop (suggested but not required)

DCB 1024-09	**M**	**3/20–4/24**	**5–9pm**	**KSU**	**$599**

MECHATRONICS ASSESSMENT

ACT NATIONAL CAREER READINESS CREDENTIAL ASSESSMENT

Certifying essential work skills is important in today's competitive world. This portable credential measures skills that employers feel are essential to success in the workplace. Students will register for both the WorkKeys Assessment and the National Career Readiness Credential.

DCB 1846-05			**Open enrollment**		**Free**
DCB 1849-05	**R**	**4/27**	**5:30–8:30pm**	**KSU**	**$30**