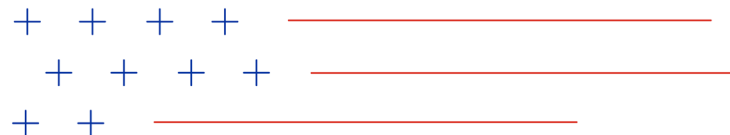


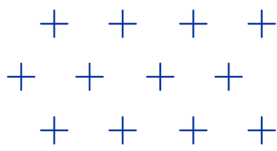
Manufacturing Operations Training Program

— ★ ★ ★ —
HEROES MAKE AMERICA

— ★ ★ ★ —
MILITARY TO MANUFACTURING



Training Site Specifics



Fort Riley, KS

9 weeks | Full-Time, Mon-Fri

Cohort Dates: See application for details

Partner: Washburn Tech

Funding: WIOA workforce grants, GI Bill, very limited scholarships are available on a case-by-case basis.

Housing: Limited barracks available

- ✓ Career Readiness Instruction
- ✓ Placement Support
- ✓ Facility Tours

Virtual

9 weeks | Full-Time, Mon-Fri

Cohort Dates: See application for details

Partner: Washburn Tech

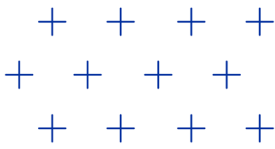
Funding: GI Bill, very limited scholarships are available on a case-by-case basis.

- ✓ Access To Manufacturing Leaders Through Virtual Career Fairs & Employer Spotlights
- ✓ Career Readiness Instruction
- ✓ Placement Support

As of April 2026



Course Curriculum



The purpose of the Certified Production Technician (CPT) ® 4.0 certification program is to recognize through certification, individuals who demonstrate mastery of the foundational, core competencies of advanced manufacturing production at the entry-level to front-line supervisor.

MSSC's CPT 4.0 & CPT+ certifications cover 4 modules in the following skill areas:

Safety

- Introduction to Advanced Manufacturing
- Industry 4.0 and IIoT
- Safety Responsibilities
- Practicing Safety in the Workplace
- Types of PPE
- Hazardous Materials Standard
- Hazardous Material Handling and Storage
- Machine Safety
- Equipment Safety
- Material Handling and Robot Safety

Quality Practices & Measurement

- Introduction to Quality
- Dimensional Measurement
- Measurement Conversion
- Introduction to Print Quality
- Multiview Drawings
- Blueprint Dimensions and Notes
- Manufacturing Drawings and Scales
- Welding Symbols
- Tolerancing
- Caliper Measurement

Manufacturing Process & Production

- Principles of Manufacturing Automation
- Industry 4.0 Technologies
- Advanced Manufacturing Materials
- Advanced Manufacturing Processes
- Mechanical Power
- Basic Mechanical Elements
- Power Efficiency
- Hand Tools
- Band Saw Operation
- Introduction to Drill Press

Maintenance Awareness

- Total Productive Maintenance (TPM)
- Mechanical Power Transmission
- Gear Drives
- Belt Drives
- Chain Drives
- Oil Lubrication
- Grease Lubrication
- Introduction to Fluid Power
- Pneumatic Power
- Basic Cylinder Circuits

Additional Module: Green Production

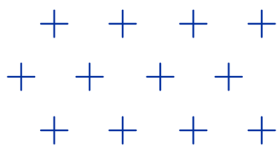
Certification in the use of equipment, technologies, and processes that will improve the environmental performance of manufacturing companies.

★ CERTIFICATIONS

- Certified Production Technician**
- OSHA 30**
- 14 College Credits**



Course Curriculum



Safety

This course introduces students to modern safety practices within the context of advanced manufacturing and Industry 4.0. It begins with an overview of emerging technologies, including nanotechnology, additive manufacturing (3D printing), and the Industrial Internet of Things (IIoT), providing a foundation for understanding how innovation impacts workplace safety. The course then transitions into core safety principles essential for manufacturing environments. Students will examine workplace safety practices, including the proper selection and use of personal protective equipment (PPE), identification and handling of hazardous materials, and the regulatory standards governing safe storage and usage.

Additional topics include machine and equipment safety, with emphasis on automated systems and robotics, as well as strategies for maintaining safe work areas. Key areas such as fire safety, electrical safety, and emergency preparedness and response are also addressed to ensure comprehensive risk awareness. The course concludes with a focus on effective communication and teamwork, equipping students with the skills necessary to promote a culture of safety and collaboration in the workplace.

Quality

This course, based on the MSSC Quality 4.0 module, provides a comprehensive introduction to modern quality practices and precision measurement techniques used in the manufacturing industry. Students will begin with an overview of foundational quality systems, including widely adopted methodologies such as Six Sigma, to understand how organizations maintain consistency and continuous improvement in production processes.

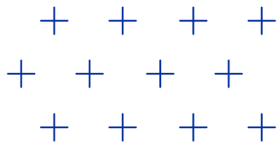
Building on this foundation, the course transitions into essential measurement skills, starting with basic dimensional measurement using machinist's rules. Students will develop the ability to accurately measure and interpret dimensions while also learning to convert between the metric system and the U.S. Customary system—an essential skill in today's global manufacturing environment. With these measurement fundamentals established, students will advance to blueprint reading. This portion of the course focuses on interpreting technical drawings in detail, including understanding title blocks, notes, scales, and tolerances. Emphasis is placed on connecting drawing specifications to real-world parts, ensuring students can accurately compare design intent with physical outcomes.

Students will then apply their knowledge using precision measurement instruments such as calipers, micrometers, and dial indicators to obtain highly accurate measurements. The course also highlights the critical role of inspection and corrective action in maintaining product quality. Learners will explore how to monitor and control production processes through the use of control charts and other quality tracking tools.

By the end of this course, students will have developed the practical skills and foundational knowledge necessary to support quality assurance and measurement processes within modern manufacturing environments.



Course Curriculum



Manufacturing Processes and Production

This course, based on the MSSC *Processes and Production 4.0* module, offers a comprehensive exploration of modern manufacturing systems within the context of Industry 4.0. Students will examine how emerging technologies are transforming production environments, with a focus on automation, data integration, and smart manufacturing systems. Key topics include the evolution of automation and the growing role of the Industrial Internet of Things (IIoT) in optimizing efficiency, connectivity, and decision-making on the factory floor. The course also introduces advanced materials used in contemporary manufacturing, including alloys, composites, and nanomaterials. Students will investigate how these materials influence production capabilities and require specialized processes such as heat treating and additive manufacturing (3D printing).

To build a strong technical foundation, the course begins with essential principles of physics, including force, mass, weight, and energy, and their application to simple machines such as levers and wheels. Students will explore how these principles extend from basic hand tools to more complex equipment used in manufacturing environments. As the course progresses, students will gain practical knowledge of industrial machinery, including operator-controlled equipment such as band saws and drill presses, as well as advanced systems that utilize Human Machine Interfaces (HMI), such as Computer Numerical Control (CNC) machines. Emphasis is placed on machine setup, operation, troubleshooting, and maintenance strategies to minimize downtime and maintain productivity.

The course concludes with an introduction to Lean Manufacturing principles, focusing on process optimization, waste reduction, and effective material and inventory management. By the end of the course, students will understand how to integrate modern technologies, materials, and processes to support efficient, high-quality production in a competitive manufacturing environment.

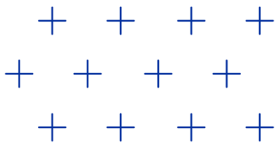
Maintenance Awareness

This course, based on the MSSC *Manufacturing Awareness 4.0* module, introduces students to the foundational systems and technologies that support modern manufacturing operations. Emphasis is placed on understanding how mechanical, fluid, and electrical systems work together to maintain efficient, reliable production in an increasingly automated environment. Students will begin by exploring automated maintenance management systems (CMMS), which are used to schedule, track, and document maintenance activities. This knowledge provides a critical foundation for ensuring equipment reliability and minimizing downtime in manufacturing settings.

The course then examines essential mechanical components involved in power transmission, including pillow block bearings and flexible couplings, and how they are installed and maintained. Students will study the operation and application of common drive systems—gear, belt, and chain drives—learning to evaluate their advantages and limitations and select the appropriate system for specific manufacturing tasks.



Course Curriculum



Maintenance Awareness (cont.)

In addition to mechanical systems, the course introduces fluid power technologies, including pneumatics and hydraulics. Students will learn how these systems generate and control both linear and rotational motion, and how they are applied in a wide range of industrial processes.

A significant portion of the course is dedicated to electrical and electronic fundamentals. Students will develop an understanding of basic electrical concepts such as voltage, current, and resistance, followed by the analysis and operation of simple circuits. The course also covers control logic systems, including the six common types of control logic circuits, and introduces ladder diagrams as a method for visualizing and designing control processes. Students will further explore the use of relays and their role in circuit control.

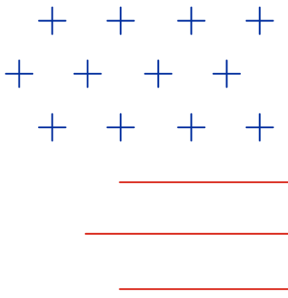
Building on this foundation, the course concludes with an introduction to automation technologies, including limit switches, sensors, and programmable logic controllers (PLCs). Students will gain insight into how electronic systems are integrated into automated manufacturing processes to improve precision, efficiency, and control. By the end of the course, students will have a broad understanding of the core systems that drive modern manufacturing and the technical awareness needed to support advanced, technology-driven production environments.

OSHA 30

OSHA 30-hour training benefits supervisors and workers with safety roles, including those in construction, manufacturing, factory operations, health care and more. Our OSHA 30 courses promote safe and healthful work environments by training workers to identify, predict and avoid hazards in the workplace.



Program Contact Information



Have questions, or need additional information?

Email us at heroes@nam.org

Ready to apply, scan the QR code below

