



Mechatronic Systems Certification Program (MSCP) – Level I

Cuyahoga Community College's training program focuses on the first of three MSCP levels:

**Certified Mechatronic
Systems Assistant**





About Mechatronics

Mechatronics combines mechanical and electrical engineering with computer science. A mechatronic system picks up process signals and analyzes them to generate signals that create forces, motions and actions. Mechatronic systems can be as simple as a motorized garage door or as complex as an auto assembly line.

Program Overview

This certification shows your employer that your skills meet the highest industry standards. Certified individuals possess hands-on competence in addition to advanced technical knowledge. MSCP Level 1 emphasizes the efficient operation and troubleshooting of complex mechatronic systems.



This vendor-neutral certification program utilizes training methodology and curriculum outlined by Siemens, a world leader in industrial automation.

It will provide an advantage in the job market by facilitating transition into a variety of production, technician and engineering jobs in the U.S. and around the world.

System-Focused Instructional Approach

Students confront a complete system and learn about its various parts by examining their own role within it. From there, they explore each of the system's individual components and discover how they interrelate. Finally, using their knowledge of energy and information flow within the system, students learn how to pinpoint where and why malfunctions might occur within each component.

Highlights

- Strengthen technical automation skills through hands-on training.
- Gain knowledge to sit for a comprehensive industry skills certification.
- 256 hours of instruction from industry professionals.
- Flexible schedule allows employees to train two half-days per week.
- Delivered in two 16-week sessions.

Admission Requirements

- 18 years or older
- High school diploma or GED
- Screening exam to confirm prerequisite skills/experience

Curriculum

- **Module 1:** Electrical Components
- **Module 2:** Mechanical Components and Electrical Drives
- **Module 3:** (Electro)Pneumatic and Hydraulic Control Circuits
- **Module 4:** Digital Fundamentals and PLCs

Program consists of two consecutive 16-week sessions (August – December; January – May). Classes take place twice a week from 8 a.m. to noon. Maximum enrollment is 10 students per session.

Students who successfully complete the course can sit for the online MSCP Level I Certification Exam at a Tri-C® Testing Center.



Cost includes all books, handouts and one exam attempt (Siemens allows three attempts).

Contact for pricing.



Career Profile

A Certified Mechatronic Systems Assistant (CMSA) functions as a machine operator, engineer or repair technician in a complex manufacturing or production environment. They are responsible for the reliable and efficient operation of equipment, with minimal downtime.

CMSAs understand the full system. They view its components or devices in terms of their role within the system and work to keep it running at maximum capacity. They can identify where malfunctions are occurring and either correct them or communicate with high-level experts who can carry out the required repairs.

Students who successfully achieve certification can:

- Read and understand technical documents, reports and outlines specific to a system and its subsystems.
- Understand and explain principal operations of mechatronic subsystems in a complex system.
- Understand and explain how subsystems work together.
- Localize malfunctions, identify their causes/sources, correct them by repairing/replacing defective components, or document them for resolution by appropriate experts.
- Recognize impending malfunctions and correct them (or seek expert assistance) in order to keep the production line functioning and prevent production loss.
- Perform routine preventive maintenance.
- Work effectively as a team member, coordinating activities with upstream/downstream operations.
- Understand and implement safety regulations required for system operation.



www.tri-c.edu/smscp

