

# Accelerated Mechatronic Systems Assistant (Level 1)

## General Information

Course Code STA-SMSCP-AMS1  
 Length Hybrid: 80 hours virtual/80 hours in person over 20 weekdays  
 CEUs 130 hours or 13.0 CEUs

## Audience

New hire, entry level, newly assigned manufacturing production associates and operators. Students wanting to enhance their educational program with industry certification. Individuals preparing for opportunities in advanced manufacturing and automated production environments.

## Prerequisites

- Mechanical Aptitude
- Basic Math Skills

## Profile

This course is designed to on-ramp and upskill those new to the manufacturing production environment or growing in their industrial automation role. It will prepare participants to take the Siemens Mechatronics Level 1 exam on the last day of the program.

The Siemens Certified Mechatronic Systems Operator credential documents that an individual can recognize and understand the functions of a complex system and its subsystems. They view the components or devices in terms of their roles within the system and contribute to keeping the system running at optimum capacity. Mechatronic Systems Assistants will be capable of identifying where malfunctions are occurring, complete simple adjustments, replacements, or fixes, and be able to communicate with and support experts who can carry out more complex repair or maintenance activities.

This is a hybrid program consisting of 80 hours of facilitated online interactive content to build knowledge and understanding paired with an immersive 80 hours of instructor-led hands-on exercises, activities, and certification exam preparation.

## Objectives

*Upon completion of this course, the student shall be able to:*

- Evaluate and understand the operations of a complex system and the interrelationships between system, subsystems, and components.
- Analyze and understand the role and function of electrical, mechanical, fluid power, and control systems in a complex system.
- Interpret and apply information from technical documents, data sheets, and other resources.
- Locate, recognize, and describe possible causes and sources of malfunction.
- Identify and characterize potential or impending malfunctions.
- Contribute to operations as a team-member and collaborate with upstream and downstream operations.
- Understand and apply safety practices required for protection of people and equipment.
- Complete the Siemens Mechatronic Systems Assistant Level 1 Exam.

## Topics

1. Industrial Fundamentals
  - a. Safety
  - b. Quality
  - c. Manufacturing Production
  - d. Electrical Basics
  - e. Mechanical Systems
  - f. Pneumatic and Hydraulic Basics
  - g. Digital Logic and PLC Fundamentals
  - h. Intro to Robot Applications
  - i. Intro to Industry 4.0
  - j. Intro to Battery Technology
2. Hands-On Skill Development
  - a. Creation of Resources and Documentation
  - b. Electrical Subsystems and Components
  - c. Mechanical Subsystems and Components
  - d. Fluid Power Subsystems and Components
  - e. Role and Function of PLC Control
3. Systems Approach Foundation
  - a. Subsystems and Components
  - b. Troubleshooting Methodology
  - c. Production Operation
  - d. Maintenance Perspectives
  - e. Presentation and Communication
4. Preparation for Industry Certification Exam