



**South Central College
Program Design**

CERT 3603 Mechatronics Industrial Maintenance

Program Information

Instructional Level Certificate

Career Cluster Engineering, Manufacturing & Technology

Description

This certificate is designed to prepare learners to enter the Industrial Maintenance field in an entry-level position and to enhance the skills of those already employed in the field. This certificate will allow successful learners to be proficient in many different areas including plant safety, reading technical drawings, mechanical drives, bearings, lubrication, alignment, pneumatics, industrial electricity, motor controls, boilers and welding. This stackable certificate allows a pathway for learners to continue their education in Mechatronics.

Program Admission Dates (Fall and/or Spring)

Fall

Program Location (North Mankato and/or Faribault)

North Mankato and Faribault

Program Student Learning Outcomes

- 1 Work individually or in small teams to troubleshoot and repair mechatronics systems.
- 2 Successfully complete a nationally recognized Mechatronics assessment such as those available from SkillsUSA, NOCTI or AMTEC.
- 3 Build some portion of a Mechatronics system to the print specifications.
- 4 Demonstrate knowledge and professional skills necessary to retain employment in related program field.

Program Configurations

Fall Start

Credits

Technical Course	25
Total Credits	25

First Year Fall

Course #	Course Title	Credits	Function
CMAE 1514	Safety Awareness	2	Technical Course
CMAE 1518	Manufacturing Process and Production	2	Technical Course
CMAE 1522	Quality Practices	2	Technical Course
CMAE 1526	Maintenance Awareness	2	Technical Course
MECA 1122	Electricity - Devices and Circuits I	3	Technical Course
MECA 2120	Fluid Power 1	3	Technical Course

First Year Spring

Course #	Course Title	Credits	Function
MECA 1250	Mechatronics Systems Operations I	3	Technical Course
MECA 1223	Mechanical Systems 1	3	Technical Course
MECA 2240	Senior Project (Variable Credit)	2	Technical Course
MATH 1050	Mathematics for Technical Careers	3	Technical Course

Program Course List

Number	Title	Credits	Pre/Corequisites
CMAE 1514	Safety Awareness	2	None
CMAE 1518	Manufacturing Process and Production	2	None
CMAE 1522	Quality Practices	2	None
CMAE 1526	Maintenance Awareness	2	None
MATH 1050	Mathematics for Technical Careers	3	A score of at least 56 on the Arithmetic portion of the Accuplacer test.
MECA 1122	Electricity - Devices and Circuits I	3	None
MECA 1223	Mechanical Systems 1	3	
MECA 1250	Mechatronics Systems Operations I	3	MECA 1122 ELECTRICITY - DEVICES AND CIRCUITS I MECA 1125 ELECTRICITY - DEVICES AND CIRCUITS II or MECA 1120 ELECTRICITY - DEVICES AND CIRCUITS
MECA 2120	Fluid Power 1	3	None
MECA 2240	Senior Project	5	MECA 2150 - Mechatronics Systems Operations I or consent of Instructor