

Mechatronics Technology

Winona & Red Wing Campus

OVERVIEW

Mechanical systems, electrical devices, and industrial automation combine for a cutting edge career.

If you like working with your mind and your hands, the challenging field of mechatronics technology may be the career choice for you! Mechatronics technology is the cutting edge discipline of building, troubleshooting, and maintaining the industry of tomorrow.

Mechatronics technicians work with industrial electricians, engineers, and technical support staff to ensure that production processes and equipment can be expanded and sustained in a wide range of industries.

At Southeast in Red Wing and Winona, Mechatronics Technology students will learn skills spanning electronics, mechanics, hydraulics, and motors. You will understand how to set up and maintain advanced programmable logic controllers, drives, human-machine interfaces, and actuators. Graduates with this credential work in settings such as manufacturing, automation, control systems, and agriculture, such as:

- installing industrial robots at leading manufacturing firms
- deploying automated milking parlors on dairy farms
- troubleshooting high-tech industrial mechanical operations

Whether studying electrical, mechanical, or instrumentation systems, the faculty will be able to draw a line from each lecture to what is taking place in today's most advanced industries.

MAJORS WITHIN

Mechatronics Technology, AAS	60 credits
Electromechanical Technology, Diploma	31 credits
Automation Foundations, Certificate	11 credits
Industrial Maintenance, Certificate	10 credits



Scan here to watch our in depth
video about Mechatronics Technology!

southeastmn.edu/mechatronics



PROGRAM HIGHLIGHTS

Taught by industry and academic professionals who can connect modern industrial processes with cutting-edge advances in the world of mechatronic

Lecture and lab coursework directly relate to what is taking place in today's most advanced industries

Capstone project will demonstrate your ability to integrate what you have learned in the program

CAREER OPPORTUNITIES

Automation Technicians
Industrial Engineering Technicians
Industrial Machinery Mechanics
Commercial & Industrial Maintenance Technicians

JOB PLACEMENT

TBD

PROGRAM OUTCOMES

1. Understanding AC/DC electrical circuits
2. Proficiency with pneumatic & hydraulic systems
3. Control and troubleshoot electrical motors
4. Installation and configuration of Variable Frequency Drives (VFD) and Human
5. Machine Interfaces (HMI)
6. Successful troubleshooting of electro-mechanical systems
7. Demonstration of multi-system integration via a program capstone project

Mechatronics Technology

Sample Program Plan

Please note that this is a sample program schedule. Your schedule may vary depending upon your needs, goals, and course availability.

Mechatronics Technology, AAS - WINONA

Course No.	Course Name	Credits
First Semester		
MECH 1000	Introduction to Mechatronics	1
MECH 1010	Problem Solving	3
MECH 1202	DC Electricity	2
MECH 1610	Basic Industrial Controls	3
GOAL 1	English/Comm Requirement	3
GOAL 4	Math Requirement	3
Semester total		15
Second Semester		
MECH 1204	AC Electricity	2
MECH 1212	Digital Electronics	1
MECH 1620	Programmable Controllers	3
MECH 1710	Fluid Power	2
MECH 1700	Mechanical Power Transmission	2
MECH 1720	Machining for Maintenance	3
WELD 1455	Trades Enhancement Welding	3
Semester total		16
Third Semester		
MECH 2020	Mechatronic Graphics and Design	2
MECH 2630	Advanced PLC Programming	3
MECH 2631	Motors & Drives	3
MECH 2640	Integrated Industrial Systems	3
GEN ED	Liberal Arts elective	3
Semester total		14
Fourth Semester		
MECH 2632	Process Control Systems	3
MECH 2730	Robotics	3
MECH 2800	Mechatronics Capstone	3
GOAL 6	Humanities Requirement	3
GOAL 5	Social Science Requirement	3
Semester total		15
Total Required Credits - 60		

Mechatronics Technology, AAS - RED WING

Course No.	Course Name	Credits
First Semester		
MECH 1000	Introduction to Mechatronics	1
MECH 1010	Problem Solving	3
MECH 1202	DC Electricity	2
MECH 1710	Fluid Power	2
MECH 1700	Mechanical Power Transmission	2
MECH 1610	Basic Industrial Controls	3
Goal 1-10	Liberal Arts and Sciences Requirement	3
Semester total		16
Second Semester		
MECH 1204	AC Electricity	2
MECH 1212	Digital Electronics	1
MECH 1620	Programmable Controllers	3
MECH 1720	Machining for Maintenance	3
MECH 2631	Motors & Drives	3
WELD 1455	Trades Enhancement Welding	3
Semester total		15
Third Semester		
MECH 2020	Mechatronic Graphics and Design	2
MECH 2630	Advanced PLC Programming	3
MECH 2640	Integrated Industrial Systems	3
GEN ED	Liberal Arts elective	3
GOAL 1	English/Communication Requirement	3
Semester total		14
Fourth Semester		
MECH 2632	Process Control Systems	3
MECH 2730	Robotics	3
MECH 2800	Mechatronics Capstone	3
GOAL 6	Humanities Requirement	3
GOAL 5	Social Science Requirement	3
Semester total		15
Total Required Credits - 60		

Electromechanical Technology, Diploma - WINONA

Course No.	Course Name	Credits
First Semester		
MECH 1000	Introduction to Mechatronics	1
MECH 1010	Problem Solving	3
MECH 1202	DC Electricity	2
MECH 1610	Basic Industrial Controls	3
Goal 1-10	Liberal Arts and Sciences Requirement	3
Goal 1	English/Communications Requirement	3
Semester total		15
Second Semester		
MECH 1204	AC Electricity	2
MECH 1212	Digital Electronics	1
MECH 1620	Programmable Controllers	3
MECH 1700	Mechanical Power Transmission	2
MECH 1710	Fluid Power	2
MECH 1720	Machining for Maintenance	3
WELD 1455	Trades Enhancement Welding	3
Semester total		16
Total Required Credits - 31		

Electromechanical Technology, Diploma - RED WING

Course No.	Course Name	Credits
First Semester		
MECH 1000	Introduction to Mechatronics	1
MECH 1010	Problem Solving	3
MECH 1202	DC Electricity	2
MECH 1710	Fluid Power	2
MECH 1700	Mechanical Power Transmission	2
MECH 1610	Basic Industrial Controls	3
Goal 1-10	Liberal Arts and Sciences Requirement	3
Semester total		16
Second Semester		
MECH 1204	AC Electricity	2
MECH 1212	Digital Electronics	1
MECH 1620	Programmable Controllers	3
MECH 1720	Machining for Maintenance	3
WELD 1455	Trades Enhancement Welding	3
GOAL 1	English/Communication Requirement	3
Semester total		15
Total Required Credits - 31		

Mechatronics Technology

Sample Program Plan

Please note that this is a sample program schedule. Your schedule may vary depending upon your needs, goals, and course availability.

Industrial Maintenance, Certificate RED WING and WINONA

Course No.	Course Name	Credits
MECH 1700	Mechanical Power Transmission	2
MECH 1710	Fluid Power	2
MECH 1720	Machining for Maintenance	3
WELD 1455	Trades Enhancement Welding	3
Total Required Credits - 10		

Automation Foundations, Certificate RED WING and WINONA

Course No.	Course Name	Credits
MECH 1202	DC Electricity	2
MECH 1204	AC Electricity	2
MECH 1212	Digital Electronics	1
MECH 1610	Basic Industrial Controls	3
MECH 1620	Programmable Controllers	3
Total Required Credits - 11		