MECHATRONICS - AAS DEGREE

Overview

See Department website and program contacts here (https://www.mhcc.edu/education-options/degrees-certificates/mechatronics/mechatronics-degree/index/)

The **Mechatronics (AAS) degree** is designed for students seeking careers in advanced manufacturing, automation, robotics, and industrial maintenance. The curriculum combines mechanical, electrical, and automated systems knowledge with hands-on technical training to prepare students for employment in modern industrial and manufacturing environments.

Coursework includes topics such as **robotics, programmable logic controllers (PLCs), control systems, electro-mechanical systems, statistical process control (SPC), manufacturing methods, safety, and industrial troubleshooting**. Students develop practical technical skills used to maintain, repair, and support automated production and industrial systems.

The Mechatronics program is workforce-focused and prepares students for careers involving industrial robots, automated equipment, manufacturing systems, and advanced industrial technologies. Students also develop problem-solving, teamwork, and professional skills that support success in technical workplace environments.

Students are encouraged to work with an advisor (https://www.mhcc.edu/student-resources/academic-advising/) to ensure appropriate course selection and program planning based on their educational background and career goals.

Refer to the tabs above for additional information about:

- **Education Plan** – provides a sample term-by-term sequence of courses
- **Career Info** – includes information on potential occupations, employment trends, and earnings

Program Learning Objectives

At the completion of this program, students should be able to:

- Demonstrate appropriate industrial safety practices in a manufacturing environment
- Participate effectively in a workplace environment
- Apply a systematic approach to troubleshooting problems
- Read and interpret industrial schematics
- Demonstrate intermediate level knowledge of hydraulic, pneumatic, mechanical, and electrical systems
- Demonstrate basic knowledge in automation control systems
- Operate and program basic industrial robots and programmable logic controllers
- Describe and perform basic welding and machining processes on ferrous metals
- Use hand and shop tools effectively to complete common maintenance tasks
- Identify and use appropriate test equipment

Education Plan

This sample Education Plan illustrates one possible course sequence. Students should consult an advisor (https://www.mhcc.edu/student-resources/academic-advising/) to create a personalized plan.

General education courses (such as math, writing, health, etc.) can be taken during any term, or before starting the program.

First Quarter		
Fall		**Credits**
MEC101	Introduction to Mechatronics	1
MEC110	Introduction to Manual Machine Tools	3
MEC112	Measurement Tools	3
MEC121	Mechanical Drives I	4
MEC131	AC/DC Electrical Systems	3
	Credits	**14**
Second Quarter		
Winter		
MEC122	Mechanical Drives II	4
MEC132	Electric Motors	4
MEC134	Electrical Fabrication	2
MEC141	Pneumatics I	3
	Credits	**13**
Third Quarter		
Spring		
MEC123	Mechanical Drives III	4
MEC142	Pneumatics II	2
MEC231	Introduction to Programmable Logic Controllers	4
MEC241	Introduction to Hydraulics	3
Human Relations requirement (https://catalog.mhcc.edu/degree-certificate-requirements/aas/#human)		3-4
	Credits	**16-17**
Fourth Quarter		
Summer		
MTH065	Beginning Algebra II (or higher, excluding MTH098)	4
Health and Physical Education requirement (https://catalog.mhcc.edu/degree-certificate-requirements/aas/#health)		3
WR101 or WR121Z	Workplace Communications I or Composition I	3-4
	Credits	**10-11**
Fifth Quarter		
Fall		
MEC133	Motor Controls	5
MEC160 or WLD116	Introduction to Maintenance Welding or General Welding I	2
MEC232	Intermediate Programmable Logic Controllers	5
MEC242	Advanced Hydraulics	4
	Credits	**16**

Sixth Quarter		
Winter		
MEC113	Industrial Safety	2
MEC243	Fluid Power Controls	4
MEC251	Robotics I	3
MEC270	Process Control	4
	Credits	**13**
Seventh Quarter		
Spring		
MEC250	Manufacturing Operations	1
MEC252	Robotics II - Vision Systems	3
MEC290	Mechatronics Capstone I	3
MEC291	Mechatronics Capstone II	3
CH150Z or CIS151 or ENGR248 or ET221	Preparatory Chemistry or Introduction to Networks or Engineering Graphics: Solidworks or Statics	4
	Credits	**14**
	Total Credits	**96-98**

Awarding Requirements

The following requirement(s) must be fulfilled to be awarded the AAS in Mechatronics degree:

- All core program courses (MEC) must be completed with a grade of "C" or higher.
- All core program courses (MEC) must be completed within five (5) years of starting the program.

Career Information

Explore potential careers related to this program, including typical job roles, employment trends, and projected growth. This information can help you better understand how your education may align with future career opportunities.