

MECHATRONICS - DEGREE

Associate of Applied Science Degree Program

Faculty Advisers

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Do you like mechanics, robotics, or production equipment? Do you like solving problems? Do you enjoy building or technical projects? Can you work well as a member of a team? Mechatronics might be for you.

Mechatronics deals with robotics, control systems, and electro-mechanical systems. A mechatronics engineer uses principles of these complex systems to design, maintain and/or repair a simpler, more cost effective, and reliable system.

Students who complete this program will be prepared to work in trades that use industrial robots, programmable logic controllers (PLCs), and other powered systems. Students will also learn about statistical process control (SPC), safety, manufacturing methods, and professionalism in the workplace.

All MEC courses must be completed with a "C" grade or better and must be completed within 5 years in order to be awarded the degree.

Program Outcomes

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

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	2
MEC121	Mechanical Drives I	4
MEC131	AC/DC Electrical Systems	3
Credits		13

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
CH151 or CIS151 or ENGR248 or ET221	Basic Chemistry or Introduction to Networks or Engineering Graphics: Solidworks or Statics	4
Credits		14

Total Credits 95-97