

Associate in Applied Science in Robotics

Program Overview

Upon completion of this degree, students will be able to install, maintain, and repair electrical and electronic equipment such as networked process controls, computer-controlled machinery, three-phase motors and variable frequency motor drives, robots, and servos. Students will also gain competency in hydraulics, pneumatics, and welding.

To Learn More About This Program

Contact Larry Holz at 269-687-5651 or lholtz@swmich.edu.

Degree Requirements

To earn this degree, students must have an overall GPA of 2.0 or higher, complete a minimum of 60 credit hours, and fulfill the course requirements of the program listed below. Students are permitted to complete a higher-level math course than shown below. Each general education course, prerequisite course, internship, and capstone course must be completed with a final grade of C or better.

Course Offerings

Students pursuing an Associate in Applied Science in Robotics may complete select courses for this program online. Courses within this program may also be offered on-site at our Dowagiac or Niles campus.

General Education Courses

COMMUNICATIONS

Course ID	Course	Credits
ENGL 103 or ENGL 103W	Freshman English 2 (or with workshop)	3 to 4 credits
SPEE 102 or SPEE 104	Fundamentals of Public Speaking or Intro to Human Communication	3 credits

MATHEMATICS

Course ID	Course	Credits
MATH 128	Contemporary Mathematics	4 credits

Total Program Credits: 60

Major-Specific Required Courses

Course ID	Course	Credits
EDUC 120	Educational Exploration and Planning	1 credit
CADD 103	Blueprint Reading/Engineering Graphics I	4 credits
ELEC 118	Fundamentals of Electricity 1	4 credits
ELEC 119	Fundamentals of Electricity 2	4 credits
ELEC 131	Digital Electronics	3 credits
ELEC 140	Motors and Motor Control Circuits	3 credits
ELEC 208	Electronic Communications	3 credits
ELEC 212	Microprocessors	4 credits
ELEC 218	Process Control Instrumentation 1	3 credits
ELEC 233	Programmable Logic Controllers	2 credits
ELEC 234	Advanced PLC and Motion Control	2 credits
ELEC 255	Internship	2 credits
INTE 126	Intro to Manufacturing Systems	3 credits
INTE 159	Hydraulics and Pneumatics	3 credits
INTE 227	Industrial Robotics	2 credits
INTE 229	Industrial Robotics Vision	1 credit
INTE 237	Industrial Robotic Welding	2 credits
INTE 245	Robot Integration and Automation	2 credits
WELD 159	Basic Welding	2 credits

Additional Notes About the A.A.S. in Robotics Program

- A prerequisite course may be needed prior to enrollment in some courses within this program. Specific prerequisite requirements are listed in the Course Description section in the Course Catalog. A summary of the prerequisites is listed below in the Example Course Sequence.
- This program as outlined does NOT meet MTA requirements. A student would need two different science courses (one with a lab component), two different social science courses, and two different humanities courses. If interested in the MTA, students should seek help from an advisor for course selection.
- Courses taken out of sequence may delay a student's ability to complete the program in a timely manner.
- Each student should submit a graduation application at least one full semester before they plan to graduate.
- This program is subject to change. Students should consult with their advisor for program updates.

Example Course Sequence

The following is a sample of a semester-by-semester approach to completing this program.

FIRST SEMESTER

Courses	Credits	Prerequisites (Minimum Grade of C Required)
EDUC 120 Educational Exploration and Planning	1 credit	ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or English test score (Level 2 or higher); concurrent enrollment in ENGL 115 allowed
ELEC 118 Fundamentals of Electricity 1	4 credits	None; concurrent enrollment in ELEC 119 preferred
ELEC 119 Fundamentals of Electricity 2	4 credits	ELEC 118 (concurrent enrollment allowed)
ELEC 140 Motors and Motor Control Circuits	3 credits	None

SECOND SEMESTER

Courses	Credits	Prerequisites (Minimum Grade of C Required)
ELEC 131 Digital Electronics	3 credits	ELEC 119
ELEC 218 Process Control Instrumentation 1	3 credits	ELEC 119
ELEC 233 Programmable Logic Controllers	2 credits	ELEC 119
INTE 159 Hydraulics and Pneumatics	3 credits	
INTE 227 Industrial Robotics	2 credits	None
WELD 159 Basic Welding	2 credits	None

THIRD SEMESTER

Courses	Credits	Prerequisites (Minimum Grade of C Required)
CADD 103 Blueprint Reading/Engineering Graphics I	4 credits	None
ELEC 234 Adv PLC and Motion Control	2 credits	ELEC 233
INTE 126 Intro to Manufacturing Systems	3 credits	None
INTE 229 Industrial Robotics Vision	1 credit	INTE 227
MATH 128 Contemporary Mathematics	4 credits	AUTO 113, CONS 113, or WELD 113, Math test score (Level 3 or higher), or concurrent enrollment in MATH 128C
SPEE 102 Fund. of Public Speaking or SPEE 104 Intro to Human Communication	3 credits	See Course Description for details

FOURTH SEMESTER

Courses	Credits	Prerequisites (Minimum Grade of C Required)
ELEC 208 Electronic Communications	3 credits	ELEC 119
ELEC 212 Microprocessors	4 credits	ELEC 131
ENGL 103 or ENGL 103W Freshman English 2 (or with workshop)	3 to 4 credits	ENGL 103W: English test score (Level 2 or higher) ENGL 103: ENGL 115 or English test score (Level 3); concurrent enrollment in ENGL 115 allowed
INTE 237 Industrial Robotic Welding	2 credits	INTE 227; WELD 159
INTE 245 Robot Integration and Automation	2 credits	INTE 159; INTE 227; ELEC 233
ELEC 255 Internship	2 credits	Completion of robotics certificate; recommendation of program advisor