

# **Certificate in Robotics**

## **Program Overview**

Upon completion of this certificate, students will gain an understanding of the role of service technicians and develop skills to install, maintain, and repair industrial control and electronic equipment used in offices, factories, homes, hospitals, aircraft, and other industries.

## **To Learn More About This Program**

Contact Larry Holz at 269-687-5651 or [lholtz@swmich.edu](mailto:lholtz@swmich.edu).

## **Certificate Requirements**

To earn this certificate, students must have an overall GPA of 2.0 or higher, fulfill the course requirements of the program listed below, and complete a minimum of 21 credit hours. Additionally, each general education course and prerequisite course must be completed with a minimum grade of C.

## **Course Offerings**

Courses within this program may also be offered on-site at our Dowagiac or Niles Campus.

**Certificate Courses**

Course ID	Course	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 218	Process Control Instrumentation 1	3 credits
ELEC 233	Programmable Logic Controllers	2 credits
INTE 159	Hydraulics and Pneumatics	3 credits
INTE 227	Industrial Robotics	2 credits
MATH 127	College Algebra	4 credits
WELD 159	Basic Welding	2 credits

**Total Program Credits: 30**

## Additional Notes About the Certificate 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.
- Courses taken out of sequence may delay a student's ability to complete the program in a timely manner. Please consult your advisor regularly.
- Each student should submit a graduation application at least one full semester before he/she plans 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)
ELEC 118 Fundamentals of Electricity 1	4 credits	MATH 101 or test score (concurrent enrolled allowed); ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed); concurrent enrollment in ELEC 119 required
ELEC 119 Fundamentals of Electricity 2	4 credits	MATH 101 or test score (concurrent enrolled allowed); ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed); ELEC 118 (concurrent enrollment allowed);
ELEC 140 Motors and Motor Control Circuits	3 credits	ELEC 118 and ELEC 119 (concurrent enrollment allowed); MATH 101 or test score (concurrent enrollment allowed); ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
MATH 127 College Algebra	4 credits	MATH 101 or test score

### SECOND SEMESTER

Courses	Credits	Prerequisites (Minimum Grade of C Required)
ELEC 131 Digital Electronics	3 credits	MATH 101 or test score; ELEC 118 and ELEC 119; ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
ELEC 218 Process Control Instrumentation 1	3 credits	ELEC 118; ELEC 119; MATH 101 or test score; ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
ELEC 233 Programmable Logic Controllers	2 credits	MATH 101 or test score; ELEC 118 and ELEC 119; ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
INTE 159 Hydraulics and Pneumatics	3 credits	MATH 101 or test score (concurrent enrollment allowed); ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
INTE 227 Industrial Robotics	2 credits	ENGL 115, ENGL 103W, ENGL 103, ENGL 104, or test scores (concurrent enrollment in ENGL 115 allowed)
WELD 159 Basic Welding	2 credits	None