

# Robotics

## Associate in Applied Science

**Career Pathway:** *Engineering, Manufacturing and Industrial Technology*

**Career Cluster:** *Manufacturing, Science, Technology, Engineering and Mathematics*

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The emerging discipline of Robotics integrates electrical, mechanical, and computer systems, robotics, and programmable logic controllers and provides the graduate with the knowledge and skills required in today's manufacturing environment.

Graduates of this program will possess the skills necessary 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, servos, hydraulics, pneumatics, and welding.

The emphasis is on diagnosing and maintaining complex integrated systems. Subject matter covers hydraulics, pneumatics, and welding, as well as networked controllers and interactive web-based asset management. Digital principles are presented in the context of programmable logic devices and microcontrollers.

For detailed information concerning occupational outlook and wage information, visit the O\*NET Online website at:

<http://online.onetcenter.org>

Some courses may not be transferrable. Students interested in pursuing a Bachelor's degree through four year institutions should contact their program advisor.

### Prerequisites

- ◆ Students will need to demonstrate proficiencies in mathematics, reading, and English based on SMC assessment tests, ACT or SAT scores, or by taking the recommended courses.
- ◆ Some of the courses in this curriculum have specific prerequisites and corequisites that may not be listed as part of the degree requirements. These are described in the course descriptions.
- ◆ ACE Testing, which grants students credit for demonstration of skills mastery, is also available at the Testing Center for a number of courses.

### General Education Requirements

The general education courses listed for this degree require a C (2.0) or better for graduation. See "General Education Requirements" for more information and full listing of all general education courses.

### Course Sequence

- ◆ Many of the courses in this curriculum must be taken in a prescribed sequence. The listing that follows is a suggested sequence of courses for full-time students.
- ◆ Students seeking to start this curriculum in the spring semester should consult the program advisor for the best selection of courses.

*(Continued on next page)*

<b>Course</b>		<b>Credits</b>	<b>Course</b>	<b>Credits</b>	
<b>Semester I</b>			<b>Semester IV</b>		
ELEC 118	Fundamentals of Electricity I	4	ELEC 208	Electronic Communications	3
ELEC 119	Fundamentals of Electricity II	4	ELEC 212	Microprocessors	4
ELEC 140	Motors and Motor Control Circuits	3	ENGL 103	Freshman English II	3
MATH 101	Introductory Algebra	4	INTE 245	Robot Integration and Automation	2
<b>Semester II</b>			<b>Internship</b>		
ELEC 131	Digital Electronics	3	ELEC 255	Internship	2
ELEC 218	Process Control Instrumentation I	3	<b>Total Program Credits</b>		
ELEC 233	Programmable Logic Controllers	2	<b>61</b>		
INTE 159	Hydraulics & Pneumatics	3			
INTE 227	Industrial Robotics	2			
WELD 159	Basic Welding	2			
<b>Semester III</b>					
CADD 101	Introduction to CAD/Auto CAD	4			
ELEC 234	Advanced PLC and Motion Control	2			
INTE 126	Introduction to Manufacturing Systems	3			
INTE 229	Industrial Robotics Vision	1			
MATH 127	College Algebra	4			
SPEE 102	Fundamentals of Public Speaking	3			