Industrial Automation and Robotics

Degree Type
Associate in Science

The Industrial Automation and Robotics Degree at Lakes Region Community College consists of 9 major core courses, 5 of which are the core courses of our Computer Information Systems program. Successful students will have the necessary skills to enter the workforce as a Manufacturing Production Technician, Robotics Technician, Process Control Technician, or an Automation Technician. Students will have acquired skills in networking, programming, fabrication, and electronics. Students will also gain the knowledge to design, implement, and troubleshoot automation and robotics in the industry.

Program Outcomes:

- Demonstrate the use of strong mathematical skills.
- Demonstrate a foundation of Computer Information Systems technical skills, knowledge and a basic understanding of computer applications.
- Demonstrate a basic understanding of computer networking operations.
- Demonstrate a basic understanding of various forms of programming languages and how to construct programming logic.
- Demonstrate basic fabrication skills including reading blueprints / engineering drawings, CAD / CAM design, machine tool operations, and CNC machining operations.
- Demonstrate a basic understanding of electricity, electronic components, and electronic circuits.
- Demonstrate skills understanding a variety of microcontrollers (including PLC's) and how to program them with real world logic.
- Demonstrate how to successfully apply automation and robotics to industrial applications including "Lights Out" manufacturing.

First Year

Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
ENGL100L	English Composition	4	0	4
MATH211L	College Algebra	4	0	4
CIS136L	Fundamentals of Information Technology	2	2	3
CIS248L	Introduction to Networks	2	2	3
INDL100L	College Essentials	1	0	1
	Sub-Total Credits	**13**	**4**	**15**

Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
MATH216L	Statistics	4	0	4
IARB116L	Fabrication Technologies	32	2	4
IARB126L	Introduction to Electronics	3	2	4
CIS140L	Introduction to Programming	3	2	4
	Sub-Total Credits	**42**	**6**	**16**

Second Year

Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
MATH235L	Pre-Calculus	4	0	4
CIS215L	Intermediate Programming	3	2	4
IARB236L	Introduction to Microcontrollers	3	2	4
	Science Elective (3 credits)	3	0	3
	Sub-Total Credits	**13**	**4**	**15**

Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
MATH270L	Calculus I	4	0	4
CIS275L	Object-Oriented Programming - C++	2	2	3
IARB276L	Industrial Robotics and Automation	3	2	4
	Social Science Elective	3	0	3
	Humanities/Fine Arts/Foreign Language Elective	3	0	3
	Sub-Total Credits	**15**	**4**	**17**
	Total Credits			**63**