

# Robotics Automated Systems Technology

## A.A.S./Diploma - Staples Campus

### Career Description

Robotic Automated Systems technicians are an integral part of modern manufacturing firms. Knowledge of robotic programming, flexible manufacturing, CAD systems, industrial communications and overall system integration is essential. Technologies such as new generation robot controllers, sensors, and electrical control systems have created a need for highly specialized training. Career opportunities abound for robotic technicians in the building, repairing, installing, maintaining, programming, along with problem solving in engineering and design of robotic automated systems.

### Program Description

Central Lakes College uses a curriculum of technical industry standards set forth by Robotics Industry Association (RIA) along with a strong industrial advisory board made up of industry leaders in the different manufacturing career areas. Our graduates are employed as field service engineering, installation, and engineering technicians, applications programmers and automated systems maintenance technicians. We are the largest robotics automated systems lab in the upper Midwest. Students are trained on the same robots, controllers, and programming languages used by automated manufacturing companies.

### Accreditation

Robotics Industry Association

### Transfer Opportunities

Bemidji State University, St. Cloud State University, North Dakota State University.

### Employment Opportunities

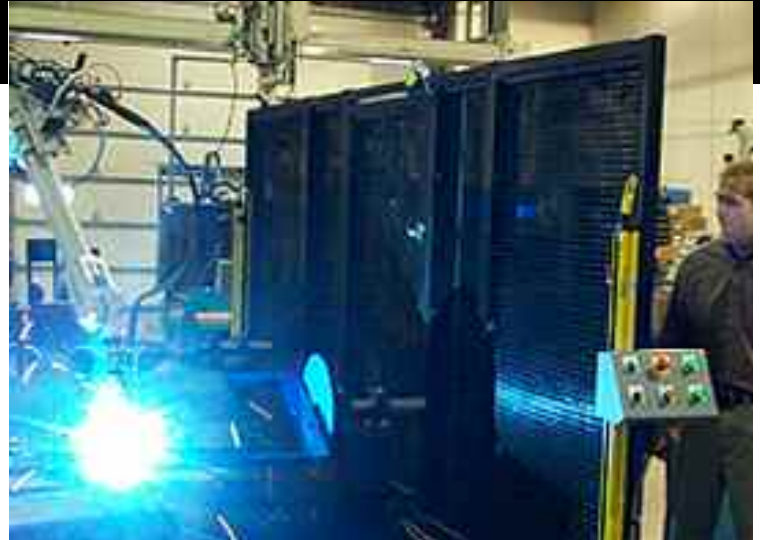
Graduates find abundant employment opportunities in automotive manufacturing, aerospace manufacturers, machine tool companies, welding and fabrication, packaging machinery manufacturers, robotic system integrators, nuclear power plants, and robotic manufacturers.

### Career Titles

Field Service Technician, Field Service Engineer, Applications Programmers, Electrical Controls Engineers, Automated Systems Technician, Automated Systems Machine Builders, Production Systems Technicians.

### Selected Employers of Recent Graduates

- 3-M
- Automated Concepts
- Brenton Engineering
- Douglas Machine
- Fanuc
- Hales
- Imation
- PAR Systems
- Robotics Automation
- Wolf Robotics
- ABB
- Automations
- Delkor
- Ellison Technologies
- Graphics Packaging
- Hegman Machine Tool
- Motoman
- PRI Robotics
- Tetra Pak



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# Robotics Automated Systems Technology

## A.A.S. Degree/Diploma - Staples Campus

### A.A.S. Curriculum

Course #	Course Title	Credits
<b>FIRST YEAR</b>		
<b>FALL SEMESTER</b>		
	General Education	4
RAST 1101	Industrial Electronics I	3
RAST 1104	Introduction to Robotics	2
RAST 1105	Blueprint Reading	2
RAST 1109	Computers in Industry	2
RAST 1111	Industrial Electronics Lab I	3
	<b>First Year Fall Semester Total</b>	<b>16</b>
<b>SPRING SEMESTER</b>		
RAST 1102*	Industrial Electronics II	3
RAST 1103*	Motors and Drives	3
RAST 1113*	Motors and Drives Lab	3
RAST 1206*	Programmable Logic Controllers I	3
RAST 1212*	Industrial Electronics Lab II	3
	General Education	6
	<b>First Year Spring Semester Total</b>	<b>21</b>
<b>SUMMER SESSION</b>		
RAST 2101*	Application Planning & Layout	2
	OR	
RAST 2165*	Fluid Power	2
RAST 2106*	Industrial Electronics III	2
RAST 2116*	Industrial Electronics Lab III	2
	<b>Summer Session Total</b>	<b>6</b>
<b>SECOND YEAR</b>		
<b>FALL SEMESTER</b>		
	General Education	4
RAST 2105*	Transducers	3
RAST 2151*	Applied Robotics Lab I	6
RAST 2165*	Fluid Power	2
	OR	
RAST 2101*	Application Planning & Layout	2
RAST 2355*	Programmable Logic Controllers II	2
	<b>Second Year Fall Semester Total</b>	<b>17</b>
<b>SPRING SEMESTER</b>		
RAST 2153*	Applied Robotics II	6
RAST 2154*	Robot Controller Maintenance	3
RAST 2395*	Advanced Robot Controller Programming	2
RAST 2390*	Robotics Internship	1-3
	OR	
RAST 2399*	Independent Study	1-3
	General Education	6
	<b>Second Year Spring Semester Total</b>	<b>18</b>
	<b>GRADUATION REQUIREMENT</b>	<b>78</b>

\*Denotes Prerequisites

### Diploma Curriculum

Course #	Course Title	Credits
<b>FIRST YEAR</b>		
<b>FALL SEMESTER</b>		
RAST 1101	Industrial Electronics I	3
RAST 1104	Introduction to Robotics	2
RAST 1105	Blueprint Reading	2
RAST 1109	Computers in Industry	2
RAST 1111	Industrial Electronics Lab I	3
RAST 1114	Math for Industrial Technology	3
	<b>First Year Fall Semester Total</b>	<b>15</b>
<b>SPRING SEMESTER</b>		
RAST 1102*	Industrial Electronics II	3
RAST 1103*	Motors and Drives	3
RAST 1113*	Motors and Drives Lab	3
RAST 1206*	Programmable Logic Controllers I	3
RAST 1212*	Industrial Electronics Lab II	3
	<b>First Year Spring Semester Total</b>	<b>15</b>
<b>SUMMER SESSION</b>		
RAST 2101*	Application Planning & Layout	2
	OR	
RAST 2165*	Fluid Power	2
RAST 2106*	Industrial Electronics III	2
RAST 2116*	Industrial Electronics Lab III	2
	<b>Summer Session Total</b>	<b>6</b>
<b>SECOND YEAR</b>		
<b>FALL SEMESTER</b>		
	General Education	3
RAST 2105*	Transducers	3
RAST 2151*	Applied Robotics Lab I	6
RAST 2165*	Fluid Power	2
	OR	
RAST 2101*	Application Planning & Layout	2
RAST 2355*	Programmable Logic Controllers II	2
	<b>Second Year Fall Semester Total</b>	<b>16</b>
<b>SPRING SEMESTER</b>		
RAST 2153*	Applied Robotics II	6
RAST 2154*	Robot Controller Maintenance	3
RAST 2395*	Advanced Robot Controller Programming	2
	General Education	3
	<b>Second Year Spring Semester Total</b>	<b>14</b>
	<b>GRADUATION REQUIREMENT</b>	<b>66</b>

\*Denotes Prerequisites