SUPPLY CHAIN AUTOMATION A.A.S.

60 Semester Credit Hours; Curriculum: 0290

The Supply Chain Automation degree is designed to prepare students for inspiring careers in industrial automation. Program teaches comprehensive set of skills including electronics, mechanical systems, welding, fluid power, industrial robotics, and programmable controllers. Students will learn to operate, setup, maintain, troubleshoot, and repair various high-tech equipment including automated production lines, robotic integration, and warehouse system automation.

***Note**: Refer to* IAI General Education Courses *page for guidelines on General Education course selection.*

Code	Title	Hours
General Education Requirements		
Area A — Communications		
EGL 101	Composition I	3
Select one of the following:		3
EGL 102	Composition II	
EGL 111	Introduction to Business and Technical Writing (recommended)	
EGL 212	Technical Writing Applications (recommended)	
SPE 103	Effective Speech	
Area B — Mathematics		
Select one course from Area B (MAT 114 recommended)		3-4
Area C — Science		
No course required (PHY 101 recommended)		0-3
Area D — Social and Behavioral Sciences		
Select one course from a social or behavioral science discipline		3
Area E — Humanities/Fine Arts		
Select one course from a humanities or fine arts discipline		3
Area F — Global Studies [1]		
Select one course that satisfies Global Studies requirement		0-3
Area G — U.S. Diversity Studies [2]		
Select one course that satisfies U.S. Diversity Studies requirement		0-3
Total Hours		**15**

1 *Students may take a Global Studies course that satisfies both Area F and another Area requirement.*

2 *Students may take a U.S. Diversity Studies course that satisfies both Area G and another Area requirement.*

Code	Title	Hours
Major Requirements		
ELT 101	Introduction to Electronics	5
ELT 107	Survey of Electronics	3
MEC 220	Elements of Machine Design	3
MFG 102	Industrial Drafting and Design	3
MFG 112	Introduction to Automation	3
MFG 120	Introduction to Welding	3
MFG 135	Fluid Power and Controls	4
MFG 210	Industrial Robotics and Automation	4
MFG 225	Motors and Controls	3
MFG 240	Programmable Logic Controllers (PLC)	4
MFG 245	Programmable Automation Controllers (PAC)	4
Select additional courses to total a minimum of 6 credit hours:		6
CNS 105	Networking Essentials	
ELT 120	Introduction to Radio Frequency Identification	
MFG 101	Occupational Safety	
MFG 125	Advanced Welding	
MFG 170	Automation Equipment Maintenance	
MFG 220	Automation Vision Systems	
MFG 230	Automation Equipment Repair	
MFG 250	Advanced Automation Controllers	
Total Hours		**45**

Supply Chain Automation A.A.S. Pathway

The following Pathway is recommended for students pursuing an Associate in Applied Science degree in Supply Chain Automation.

For more information or program specific advising contact the Department Chair or Program Coordinator. **General Education courses should be selected from the list of IAI General Education Courses.**

First Year		
Fall Semester		**Hours**
EGL 101	Composition I	3
MAT 114	Applied Mathematics I	4
MFG 102	Industrial Drafting and Design	3
MFG 112	Introduction to Automation	3
MFG 240	Programmable Logic Controllers (PLC)	4
	Hours	**17**
Spring Semester		
Select one of the following:		3
EGL 102	Composition II	
EGL 111	Introduction to Business and Technical Writing (recommended)	
EGL 212	Technical Writing Applications (recommended)	
SPE 103	Effective Speech	
ELT 101	Introduction to Electronics	5
MFG 135	Fluid Power and Controls	4
MFG 245	Programmable Automation Controllers (PAC)	4
	Hours	**16**
Second Year		
Fall Semester		
ELT 107	Survey of Electronics	3
MFG 120	Introduction to Welding	3
MFG 210	Industrial Robotics and Automation	4
Select one of the following electives[1]:		2-4
CNS 105	Networking Essentials	
ELT 120	Introduction to Radio Frequency Identification	
MFG 101	Occupational Safety	
MFG 125	Advanced Welding	
MFG 170	Automation Equipment Maintenance	
MFG 220	Automation Vision Systems	
MFG 230	Automation Equipment Repair	
MFG 250	Advanced Automation Controllers	
	Hours	**12-14**
Spring Semester		
MEC 220	Elements of Machine Design	3
MFG 225	Motors and Controls	3
Select one of the following electives[1]:		2-4

CNS 105	Networking Essentials	
ELT 120	Introduction to Radio Frequency Identification	
MFG 101	Occupational Safety	
MFG 125	Advanced Welding	
MFG 170	Automation Equipment Maintenance	
MFG 220	Automation Vision Systems	
MFG 230	Automation Equipment Repair	
MFG 250	Advanced Automation Controllers	
Select one Social and Behavioral Sciences course that also satisfies Global Studies [2] or U.S. Diversity Studies [3] requirement		3
Select one Humanities/Fine Arts course that also satisfies Global Studies [2] or U.S. Diversity Studies [3] requirement		3
	Hours	**15-16**
	Total Hours	**60-63**

[1] *Electives must total a minimum of 6 credit hours.*
[2] *At least one Global Studies course is required for degree completion.*
[3] *At least one U.S. Diversity course is required for degree completion.*

Note: Pathway is a recommended sequence of courses. Part-time students should contact the program coordinator to discuss a part-time pathway as well as course prerequisites and recommendations.

Program Learning Outcomes

1. Describe preventive maintenance and evaluate its importance for running uninterrupted production.
2. Design hydraulic and pneumatic circuits to run a number of valves and cylinders through a specified sequence of operations.
3. Compose, simulate, and troubleshoot programs for varied robot operations including safe industrial robot operation.
4. Apply acquired skills to troubleshoot and repair mechanical and electrical failures of automation equipment.
5. Design control circuits for various motor applications including Variable Frequency Drive (VFD) controller.
6. Create programs for Programmable Logic/Automation Controllers to run and monitor various automation equipment.
7. Propose integration of automation system to improve overall efficiency using critical thinking and communication skills.