

# MECHATRONICS, Certificate - 4261

Engineering & Technology Department  
CIP Code: 14.4201

Mechatronics is a multi-disciplinary program designed to provide students with the broad skill set required to maintain, repair, and manage the automated systems and machines used throughout industry. The certificate teaches students mechanical, electrical, electronic, fluid power, and control systems as they gain an understanding, through theory and hands-on experience, of how these systems integrate with one another. Graduates are prepared for positions in which maintaining, troubleshooting, repairing, and modifying the designs of automated systems and equipment is required. The complete program is available at the Harrisburg and Gettysburg campuses.

### Career Opportunities

Graduates find employment as multi-skilled technicians in industrial, manufacturing, and commercial settings.  
**(SOC Code: 49-9041 Industrial Machinery Mechanics)**

### Competency Profile

This curriculum is designed to prepare students to:

- Perform maintenance on electronic, electrical, pneumatic, hydraulic and other mechanical equipment
- Interpret OSHA standards
- Use hand tools, power tools, and test equipment
- Demonstrate practical knowledge in electrical fundamentals, motor controls, and process control systems
- Demonstrate practical knowledge in mechanical systems
- Demonstrate practical knowledge in fluid power systems
- Read electrical and mechanical blueprints
- Troubleshoot basic AC systems
- Troubleshoot and repair electromechanical equipment systems

### PROGRAM REQUIREMENTS (TOTAL CREDITS =31)

General Education	Major Requirements		Other Required Courses	
	ELOC 153 Fundamentals of Electricity	4	CIS 105 Introduction to Software for Business	3
	GTEC 101 Safety: OSHA 30 & NFPA 70E	3		
	IA 101 Introduction to Automation	2		
	IA 107 Shop Measurement & Calculations*	1		
	IA 201 Motors & Controls I	4		
	IA 208 PLC's and Automation	3		
	IA 221 Sensor Technology	3		
	IMT 108 Power Transmission	4		
	IMT 110 Fluid Power	4		
		28		

\*May be replaced with a higher-level MATH offering.

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Fall Semester I	Spring Semester I		
ELOC 153	4	CIS 105	3
GTEC 101	3	IA 201	4
IA 101	2	IA 208	3
IA 107*	1	IA 221	3
IMT 108	4	IMT 110	4