MECHATRONICS, Associate in Applied Science Degree - 4711

Engineering, Trades & Computer Technologies Department CIP Code: 14.4201

The Mechatronics AAS degree program educates students through an integrated-systems approach that includes automation, process controls, and industrial robotics used throughout industry. Designed as a multidisciplinary program that incorporates theory and hands-on experience with a focus on advanced control systems and industrial robotics, Students gain the broad skill-set necessary to maintain, repair, and manage mechanical, electrical, electronic, fluid power, and automation control systems. Emphasis is placed on the integration of these systems and working successfully as part of a team. Graduates are prepared for positions in which maintenance, troubleshooting, repairing, and modifying the designs of automated systems and equipment is required. This program may be completed at the Gettysburg Campus through on-campus/in-person instruction.

Career Opportunities

Graduates find employment as multi-skilled technicians in a wide variety of industrial, manufacturing, and commercial settings. Although this program is designed to lead directly to employment, opportunities exist for students to transfer their coursework to fouryear institutions and complete a bachelor's degree.

Competency Profile

This curriculum is designed to prepare students to:

- Interpret and apply workplace Safety Standards
- Read drawings, wire and troubleshoot AC and DC electrical circuits
- Read drawings, install, maintain and troubleshoot basic motor controls
- Read blueprints, assemble, maintain and troubleshoot mechanical systems
- Read drawings, construct, maintain and troubleshoot hydraulic and pneumatic systems
- Program, wire and troubleshoots sensors and basic programmable logic control (PLC) systems
- Design, wire, operate, maintain and troubleshoot industrial robot systems

PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 110 Foundations in Professional Writing	3	IA 107 Shop Measurement and Calculations*	1	CAD 154 Computer Aided Drafting & Design (or)	3
COMM 101 Effective Speaking (or)	3	IA 108 Power Transmission	4	IA 115 Microcontroller Applications (or)	(4)
COMM 203 Interpersonal Communication	(3)	IA 110 Fluid Power	4	WELD 111 Welding Fundamentals	(3
Humanities & Arts Core Elective	3	IA 201 Motors and Controls I	4	CIS 105 Intro to Software for Business	3
Mathematics or Science Core Elective	3	IA 202 Motors & Controls II	4	ELOC 153 Fundamentals of Electricity	4
Social & Behavioral Science Core Elective	3	IA 208 PLC's and Automation	3	GTEC 105 Safety & Health in the Workplace	3
First-Year Seminar Elective - IA 101	2	IA 210 Industrial Robotics I	3		13
Wellness Elective	1	IA 215 Industrial Automated Work Cells	3		
	18	IA 221 Sensor Technology	3		
		0.	29		

* May be replaced with a higher-level MATH

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ELOC 153	4	CIS 105	3	COMM 101 or 203	3	CAD 154, IA 115 or WELD 111	3 or 4
GTEC 101	3	IA 110	4	IA 202	4	ENGL 110	3
IA 101	2	IA 201	4	IA 210	3	Humanities/Arts Core Elective	3
IA 107*	1	IA 208	2	Mathematic/Science Core Elective	3	IA 215	3
IA 108	4	IA 221	3	Wellness Elective	1	Social/Behavior Science Core Elective	3