

## Contact Us:

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## Program Overview

Combining electronic, mechanical, robotics and information system technologies, this program provides the graduate with the skill set needed for today's automated manufacturing facilities. These skills will align with current needs of manufacturers as well as align with one or more industrial standards/certifications. Instruction covers hydraulics and pneumatics, robotics and automated controls, programmable controllers, process control and mechanical applications. The student will receive practical hands-on experience and computer simulation on automated assembly line processes.

## PROGRAM REQUIREMENTS

### A.A.S., Major in Mechatronics Technology

#### GENERAL EDUCATION COURSES

<b>COURSES</b>	<b>CREDIT HOURS</b>
ENG 165 Professional Communications..... 3.0 <i>or ENG 101 English Composition I</i>	3.0
MAT 170 Algebra, Geometry and Trigonometry I..... 3.0 <i>or MAT 110 College Algebra</i>	3.0
MAT 171 Algebra, Geometry and Trigonometry II ..... 3.0 <i>or MAT 111 College Trigonometry</i>	3.0
Elective Humanities/Fine Arts .....	3.0
Elective Social/Behavioral Sciences .....	3.0

**SUBTOTAL: 15.0**

#### REQUIRED CORE SUBJECT AREAS

<b>COURSES</b>	<b>CREDIT HOURS</b>
AMT 105 Robotics and Automated Controls I..... 3.0	3.0
EEM 117 AC/DC Circuits I..... 4.0 <i>or EET 111 DC Circuits</i>	4.0
EEM 251 Programmable Controllers ..... 3.0 <i>or EET 235 Programmable Controllers</i>	3.0
IMT 131 Hydraulics and Pneumatics ..... 4.0 <i>or MET 224 Hydraulics and Pneumatics</i>	4.0
IMT 170 Statistical Process Control..... 3.0	3.0

**SUBTOTAL: 17.0**

#### OTHER COURSES REQUIRED FOR GRADUATION

<b>COURSES</b>	<b>CREDIT HOURS</b>
AMT 205 Robotics and Automated Controls II ..... 3.0	3.0
EEM 118 AC/DC Circuits II ..... 4.0 <i>or EET 112 AC Circuits</i>	4.0
EEM 140 National Electrical Code..... 3.0	3.0
EEM 151 Motor Controls I ..... 4.0 <i>or EET 231 Industrial Electronics</i>	4.0
EEM 162 Introduction to Process Control ..... 3.0 <i>or EET 233 Control Systems</i>	3.0
EEM 200 Semiconductor Devices ..... 4.0 <i>or EET 131 Active Devices</i>	4.0
EEM 231 Digital Circuits I..... 3.0 <i>or EET 145 Digital Circuits</i>	3.0
EEM 241 Microprocessors I..... 3.0 <i>or EET 251 Microprocessor Fundamentals</i>	3.0
IMT 112 Hand Tool Operations ..... 3.0 <i>or IMT 210 Basic Industrial Skills</i>	3.0
IMT 161 Mechanical Power Applications ..... 4.0 <i>or IMT 101 Intro to Industrial Maintenance..... 2.0 and MET 235 Manufacturing Engineering Prin. 2.0</i>	4.0

**SUBTOTAL: 34.0 — 37.0**

**TOTAL CREDIT HOURS: 66.0 — 69.0**

### Electrical Maintenance Technician Certificate

This certificate is designed for people with three years of maintenance experience who are needing certification for their craft, job advancement or short term refresher training. All courses within this certificate will be awarded for credit toward an Associate in Applied Science degree with a major in Mechatronics Technology.

#### REQUIRED COURSE INFORMATION

<b>COURSES</b>	<b>CREDIT HOURS</b>
EEM 117 AC/DC Circuits I..... 4.0 <i>or EET 111 DC Circuits</i>	4.0
EEM 118 AC/DC Circuits II ..... 4.0 <i>or EET 112 AC Circuits</i>	4.0
EEM 140 National Electrical Code..... 3.0	3.0
EEM 151 Motor Controls I ..... 4.0 <i>or EET 231 Industrial Electronics</i>	4.0
EEM 200 Semiconductor Devices ..... 4.0 <i>or EET 131 Active Devices</i>	4.0

EEM 251	Programmable Controllers .....	3.0
	<i>or EET 235 Programmable Controllers</i>	
IMT 112	Hand Tool Operations .....	3.0

**SUBTOTAL: 25.0**  
**TOTAL CREDIT HOURS: 12.0**

## Mechatronics Technology I Certificate

This certificate is designed to prepare students for system approach analysis and troubleshooting on advanced automated equipment and machinery, combining electronic, mechanical, robotics and information system technology found in today's automated manufacturing facilities.

### REQUIRED COURSE INFORMATION

COURSES	CREDIT HOURS
EEM 117 AC/DC Circuits I.....	4.0
<i>or EET 111 DC Circuits</i>	
EEM 118 AC/DC Circuits II .....	4.0
<i>or EET 112 AC Circuits</i>	
EEM 151 Motor Controls I .....	4.0
<i>or EET 231 Industrial Electronics</i>	
EEM 162 Introduction to Process Control .....	3.0
<i>or EET 233 Control Systems.....</i>	4.0
EEM 200 Semiconductor Devices .....	4.0
<i>or EET 131 Active Devices</i>	
EEM 231 Digital Circuits I.....	3.0
<i>or EET 145 Digital Circuits .....</i>	4.0
IMT 112 Hand Tool Operations .....	3.0
<i>or IMT 210 Basic Industrial Skills I</i>	
IMT 131 Hydraulics and Pneumatics .....	4.0

**SUBTOTAL: 29.0 — 31.0**  
**TOTAL CREDIT HOURS: 29.0 — 31.0**

## Introduction to Automation Certificate

This Automation certificate prepares students for certification. This certificate also allows students to continue into the Mechatronics Technology program.

### REQUIRED COURSE INFORMATION

COURSES	CREDIT HOURS
AMT 105 Robotics I.....	3.0
AMT 205 Robotics II .....	3.0
EEM 241 Microprocessor .....	3.0
EEM 251 Programming Logic Control.....	3.0

**SUBTOTAL: 12.0**  
**TOTAL CREDIT HOURS: 12.0**

## Manufacturing Production Technician Certificate

This certificate will offer training and preparation for career opportunities in entry-level positions in today's advanced manufacturing facilities.

These skills will align with the core needs of today's manufacturing operations. The curriculum includes mathematical and statistical techniques and applications, industrial safety and operational principles, production process cycle including resource availability, product specifications and state-of-the-art manufacturing practices, including Lean Manufacturing tools and techniques.

### REQUIRED COURSE INFORMATION

COURSES	CREDIT HOURS
IMT 101 Introduction to Industrial Maintenance.....	2.0
IMT 170 Statistical Process Control.....	3.0
IMT 210 Basic Industrial Skills I.....	3.0
MET 235 Manufacturing Engineering Principles .....	2.0

**SUBTOTAL: 10.0**  
**TOTAL CREDIT HOURS: 10.0**

>>> Visit [www.ptc.edu/mechatronics](http://www.ptc.edu/mechatronics) to learn more.