

# ELECTRO-MECHANICAL TECHNOLOGIES, CERTIFICATE OF COMPETENCY (ELTC)

Effective: Fall 2023

Electro-Mechanical Technologies program is designed to prepare students for employment as electro-mechanical technicians who assemble, install, troubleshoot and/or repair mechanical, electrical and fluid power systems. The program includes instruction in industrial robotics, electrical controls and programmable controllers, manufacturing and operational testing, as well as system analysis and maintenance procedures.

## Program Outcomes

Upon successful completion of this program, students should be able to:

- Explain the applications of AC/DC Electrical Theories.
- Evaluate the use of electrical controls and programmable controllers.
- Analyze the functions of components and devices used in mechanical, electrical and fluid power systems.
- Apply principles, knowledge and analysis skills in troubleshooting, repairing and maintaining mechanical, electrical and fluid power systems.
- Apply computational skills to solve problems related to mechanical, electrical, electronic and fluid power systems.
- Analyze the safety essentials when repairing, installing, and troubleshooting mechanical, electrical, and fluid power systems.

## Full-Time Academic Plan

The College will award a certificate of competency to students who complete an approved credit-bearing career program that requires less than 30 credits. General education courses may not be required for programs that have less than 30 credits. The student must have a cumulative GPA of 2.0 or higher. At least six (6) credits, or 50% of the total credits required, whichever is greater, must be completed at Delaware County Community College.

First Semester	Hours
ELT 204 Introduction to Programmable Logic Controllers	3
MTT 108 Mathematics for Occupational Technologies or MAT 128 or Algebra	3-4
TEL 101 D C Analysis	4
TME 115 Basic Technical Skills	3
<b>Hours</b>	<b>13-14</b>
Second Semester	Hours
TEL 102 A C Analysis	4
TEL 110 Electronics I	4
TEL 200 Electro and Mechanical Systems	3
TME 223 Industrial Robotics	4
<b>Hours</b>	<b>15</b>
<b>Total Hours</b>	<b>28-29</b>

## Notes

This program is offered in two schedules: Dual Enrollment and regular College Open Enrollment.

- In the Open Enrollment Schedule, TEL 101 D C Analysis and TEL 110 Electronics I are offered in sequence in accelerated format.
- In the Open Enrollment Schedule TEL 200 Electro and Mechanical Systems and TME 220 Industrial Robotics are offered in sequence in accelerated format.
- In the Early College Enrollment Schedule, students take MTT 108 Mathematics for Occupational Technologies in 11th Grade and MAT 128 Algebra in 12th Grade.

## Part-Time Academic Plan

Code	Title	Hours
<b>First Semester</b>		
TME 115	Basic Technical Skills	3
MTT 108 or MAT 128	Mathematics for Occupational Technologies Algebra	3-4
<b>Second Semester</b>		
TEL 101	D C Analysis	4
ELT 204	Introduction to Programmable Logic Controllers	3
<b>Third Semester</b>		
TEL 102	A C Analysis	4
TEL 110	Electronics I	4
<b>Fourth Semester</b>		
TEL 200	Electro and Mechanical Systems	3
TME 223	Industrial Robotics	4
<b>Total Hours</b>		<b>28-29</b>

## Career