

# Mechatronics Engineering Technology

The Mechatronics Engineering Technology curriculum prepares individuals for employment as technicians in engineering fields requiring electrical, mechanical, and computer skills. Mechatronics Engineering technicians assist in designing, developing, testing, process design and improvement, troubleshooting and complex engineering repair, manufacturing, and automated supply chain systems and processes. Emphasis is placed on the integration of theory and hands-on application of engineering principles.

In addition to coursework in engineering fundamentals, basic manufacturing, electricity, computers, mathematics, and physics, students develop their critical thinking, planning, problem-solving, oral and written communications.

Graduates of the curriculum will find employment opportunities in industrial automated systems maintenance and equipment manufacturing including assembly, testing, start-up, troubleshooting, repair, and upgrades of machinery and the associated control system. Graduates may also find employment in automated Supply Chain facilities. Graduates will be eligible to take various exams for nationally recognized PMMI Mechatronics Certifications. Also Siemens Mechatronics Level 1, Siemens Mechatronics Level 2.

For more details about Central Piedmont Mechatronics visit the Mechatronics Engineering Technology website.

For specific information about potential positions and wages in mechatronics engineering technology employment, visit the Central Piedmont Career Coach website.

## Mechatronics Engineering Technology (A40350)

### Degree Awarded

The Associate in Applied Science Degree-Mechatronics Engineering Technology is awarded by the College upon completing this program.

### Admissions

- A high school diploma or equivalent is required. High school students preparing for an engineering technology program should complete algebra, geometry, and advanced mathematics courses. Skills and proficiencies should be developed in writing, computer literacy, and science.
- Placement tests in English and mathematics determine the entry-level courses that match individual needs. Developmental Studies English and mathematics courses are available for students to build basic skills and knowledge.
- A counseling/orientation appointment follows placement testing.
- Many courses have prerequisites or co-requisites; check the Courses section for details.

### Notes

The Mechatronics Engineering Technology curriculum at Central Piedmont provides a basic background in mechanical, electrical and computer skills and, depending on the track, specialized instruction in

each of these areas. Topics include CAD, basic computer skills, safety, automation, programmable logic controllers, instrumentation, hydraulics and pneumatics, mechanical drives, motors and controls, and basic electricity. The latest equipment is used to provide skills in these areas.

It is recommended students also sign up for the Electrical Engineering Technology Certificate Specialization in Automation Control (C40180-C6), a certificate which requires no extra courses to receive.

Completion of the program requires that students use college-level algebra, trigonometry and physics in the application of scientific principles to technical problems.

### Contact Information

The Mechatronics Engineering Technology Program is in the Engineering Technologies Division. For additional information, visit the Mechatronics Engineering Technology website or call the Program Chair at 704.330.6545.

#### General Education Requirements

ENG 111	Writing and Inquiry	3.0
COM 110	Introduction to Communication	3.0
ECO 251	Principles of Microeconomics	3.0
Take 1 of the following:		3.0
MAT 121	Algebra/Trigonometry I	3.0
or MAT 171	Precalculus Algebra	
Take 1 of the following:		3.0
ART 111	Art Appreciation	3.0
or ART 114	Art History Survey I	
or ART 115	Art History Survey II	
or DRA 111	Theatre Appreciation	
or HUM 120	Cultural Studies	
or HUM 130	Myth in Human Culture	
or MUS 110	Music Appreciation	
or MUS 112	Introduction to Jazz	
or PHI 215	Philosophical Issues	
or PHI 240	Introduction to Ethics	
or REL 110	World Religions	

#### Major Requirements

ACA 122	College Transfer Success	1.0
PHY 131	Physics-Mechanics	4.0
or PHY 151	College Physics I	
ISC 112	Industrial Safety	2.0
EGR 125	Appl Software for Tech	2.0
MEC 130	Mechanisms	3.0
MEC 265	Fluid Mechanics	3.0
ELC 131	Circuit Analysis I	4.0
ELC 135	Electrical Machines	3.0
ELC 136	Electrical Machines II	4.0
ATR 112	Introduction to Automation	3.0
ELC 213	Instrumentation	4.0
ELN 260	Prog Logic Controllers	4.0
PCI 173	Programmable Systems	4.0
or PCI 170	DAQ and Control	
DFT 154	Intro to Solid Modeling	3.0

ISC 212	Metrology	2.0
MEC 180	Engineering Materials	3.0
MEC 210	Applied Mechanics	3.0
Take 2 credits from the following:		2.0
WBL 111 & WBL 121	Work-Based Learning I and Work-Based Learning II	
WBL 112	Work-Based Learning I	
MEC 161	Manufacturing Processes I	
Total Credits		69

**No diplomas are offered in Mechatronics Engineering Technology.**

## **Mechatronics Engineering Technology Certificates (C40350)**

### **Mechatronics Engineering Technology Certificate Specialization in Mechatronics Engineering Pathway (C40350-C5)**

This certificate is available to high school students enrolled in Career and College Promise.

#### **Major Requirements**

MAT 121	Algebra/Trigonometry I	3.0
EGR 125	Appl Software for Tech	2.0
ISC 112	Industrial Safety	2.0
ELC 131	Circuit Analysis I	4.0
DFT 154	Intro to Solid Modeling	3.0
Total Credits		14

The following is the suggested plan for when to take each course to complete the Associate in Applied Science degree, based on the program requirements of the 2022-2023 catalog. This is only a recommendation — you may take courses in another order upon consultation with your advisor. This plan is based on you starting with college-level math and English courses, starting your program in the fall, and attending full-time. You can also follow this sequence if you attend part-time. Speak with an advisor about the plan and any questions. This program might also offer diplomas or certificates; visit the catalog or contact the program for details.

Mechatronics Engineering Technology suggested course sequence