The Electrical and Automation Technology program prepares students for exciting and well-paying career paths in the field of industrial control and automation. All manufacturing processes rely on electricity, electronics, sensors, communications, hydraulics and pneumatics, and computer control. The program provides sound theory reinforced by laboratory applications which reflect the expectations and responsibilities of graduates in the workplace.

Students receive a solid foundation in DC/AC theory, electrical machines and transformers, power distributions, basic wiring techniques, motor controls, programmable automation controllers, industrial electronics, digital electronics, data communications, hydraulics and pneumatics. Graduates are eligible to sit for the State of Maine Journeyman Electrician Exam. After having passed it, as well as having met the on-the-job experience requirements of the State Electrician Examining Board, they will receive their Journeyman Electrician license. Graduates assume employment in many different positions including industrial electrician and instrument technician, maintenance technician, engineering assistant, construction electrician, field representative, and many others.

The Electrical and Automation Technology program is an active partner with the Federal Aviation Administration (FAA) Collegiate Training Initiative (CTI) providing an internship and allowing graduates to apply directly to the FAA as a technician or specialist. EMCC is also a Certified Training and Education Site and FANUC Robotics Material Handling Program Software.

**KEY LEARNING OBJECTIVES**

Graduates with the associate in applied science degree will have strengths in the building, testing, operation, and maintenance of electrical systems. Graduates will have demonstrated knowledge and hands-on competence with:

- electrical and electronic circuit analysis using algebra, trigonometry, and advanced mathematical techniques;
- electrical and electronic drawings;
- pneumatic and hydraulic fluid power components and systems;
- process instrumentation and controls;
- electrical control systems, programmable automation controllers, and associated software;
- the National Electrical Code;
- test equipment; and
- industrial workplace safety procedures.

**PREREQUISITES**

**AAS Degree:** high school level Algebra I, Algebra II, Geometry, and either Physics or Chemistry with Lab required. Must be familiar with Microsoft Office, e-mail, and the Internet.

STILL IN HIGH SCHOOL? Concurrent enrollment agreements with many high schools and technical education centers are available. Information can be found on [http://www.emcc.edu/academics/programs/dual-enrollment/](http://www.emcc.edu/academics/programs/dual-enrollment/).
# ELECTRICAL AND AUTOMATION TECHNOLOGY
## Associate in Applied Science Degree

### FIRST SEMESTER
- **CAD 101** Introduction to CADD 3
- **EPT 116** DC Circuits 3
- **EPT 176** Programmable Controllers 3
- **EPT 245** Digital Electronics 3
- Restricted Elective *Math sequence see below* 3-4

### SECOND SEMESTER
- **EPT 123** Power Distribution 3
- **EPT 125** AC Electricity 3
- **EPT 167** Fluid Power Technology 3
- **EPT 173** DC/AC Machines 3
- **ENG 101** College Composition 3

### THIRD SEMESTER
- **EPT 228** Industrial Electronics 3
- **EPT 241** Linear Circuits 3
- **EPT 296** Automation Projects I 3
- **ENG 215** Business and Technical Writing ^ 3
- **PHY 121** Physics I 3
- **PHY 122** Physics I Laboratory 1
- Restricted Elective *Math sequence see below* 3-4

### FOURTH SEMESTER
- **EPT 155** National Electrical Code 3
- **EPT 251** Control Systems 3
- **EPT 298** Automation Projects II 3
- Restricted Elective: Any Humanities/Social Science 3
- **SPE 101** Oral Communication 3

### TOTAL AAS DEGREE CREDITS 64-66

* Math sequence choices:
  - MAT116 College Algebra & MAT120 College Trigonometry OR
  - MAT120 College Trigonometry & MAT161 Introduction to Statistics OR
  - MAT120 College Trigonometry & MAT217 Pre-Calculus OR
  - MAT123 College Algebra & Trigonometry & MAT161 Introduction to Statistics OR
  - MAT217 Pre-Calculus & MAT225 Calculus I OR
  - MAT225 Calculus I, & MAT226 Calculus II OR

^ELO Capstone

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**DID YOU KNOW?**

EMCC provides campus housing for over 260 students.

EMCC’s Student Success Center offers tutoring services free of charge to our students.

EMCC’s Athletic Department sponsors many on-campus intramural sports and recreational events.

EMCC students enjoy small class sizes, supportive faculty, transferable courses and leadership/engagement opportunities all for under $4,000 per year

(most programs, based on 30 credit hours, in-state rate)

Campus tours are available.

Call 207-974-4857 or schedule an appointment through our website.

For more information or to apply online, visit us on the web at www.emcc.edu

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**EMCC is an equal opportunity/affirmative action institution and employer. For more info, please call 207-974-4633.**