

# Electrical & Automation Technology

## PROGRAM DESCRIPTION



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/>.*



### Programs of Study

Automotive  
Building Construction  
Business Management-Career Option  
Business Management-Transfer Option  
Business Management-Small Business  
Career Studies  
Computer Repair Technology  
Computer Technology—Coding Option  
Computer Technology—Networking  
Criminal Justice  
Culinary Arts  
Diesel, Truck & Heavy Equipment  
Digital Graphic Design  
Early Childhood Education  
Education-Career & Technical Education  
Education-Elementary Education  
Education-Experiential Education  
Education-Secondary Education  
Electrical and Automation Technology  
Electricians Technology  
Emergency Medical Services  
Fine Woodworking & Cabinet Making  
Fire Science  
Human Services  
Liberal Studies  
Medical Assistant  
Medical Office Technology  
Medical Office Technology-Coding Option  
Medical Office-Health Care Secretary  
Medical Radiography  
Nursing  
Plumbing  
Refrigeration, Air Conditioning & Heating  
Restaurant & Food Service Management  
Substance Abuse Rehabilitation Tech  
Surgical Technology  
Trade & Technical Occupations  
Welding

### Admissions Office—EMCC

354 Hogan Rd, Bangor, ME 04401

Phone: 207-974-4680

Toll-Free: 800-286-9357 (in Maine)

FAX: 207-974-4683

Email: [admissions@emcc.edu](mailto:admissions@emcc.edu)

## ELECTRICAL AND AUTOMATION TECHNOLOGY Associate in Applied Science Degree

FIRST SEMESTER	CREDITS
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	CREDITS
EPT 123 Power Distribution	3
EPT 125 AC Electricity	3
EPT 167 Fluid Power Technology	3
EPT 173 DC/AC Machines	3
ENG101 College Composition	3
THIRD SEMESTER	CREDITS
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	CREDITS
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
<b>TOTAL AAS DEGREE CREDITS</b>	<b>64-66</b>

\* Math sequence choices:

MAT 116 College Algebra & MAT 120 College Trigonometry OR  
 MAT 120 College Trigonometry & MAT 161 Introduction to Statistics OR  
 MAT 120 College Trigonometry & MAT 217 Pre-Calculus OR  
 MAT 123 College Algebra & Trigonometry & MAT 161 Introduction to Statistics OR  
 MAT 217 Pre-Calculus & MAT 225 Calculus I OR  
 MAT 225 Calculus I, & MAT 226 Calculus II

^ELO Capstone



## 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](http://www.emcc.edu)

Follow us on social media for the  
latest EMCC news!



[www.facebook.com/emccbanger](http://www.facebook.com/emccbanger)



@EMCCAdmissions

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