

Electrical Technology

NEW! Get a Degree with a Substation Electrician & Electronics Concentration



Why E-TECH?

The electrical field continues to grow in its scope and employment opportunities due to technological advances, as well as economic changes and expansion. Electrical work is becoming more complex with electronics, microprocessor-based controls and data communications integrated into residential, commercial and industrial electrical systems. This increasing complexity is creating an ever-growing need for well-trained and qualified licensed electricians and electrical technicians.

Classroom instruction highlights contemporary and evolving electrical technologies applications. Students enrolled in the program will have the opportunity to be issued a NH electrical apprentice identification card. The identification card will allow the student to earn practical working experience hours, as well as related classroom hours in accordance with NH electrical apprenticeship requirements.

Time to Degree Completion

Electrical Technology Degree (ETD) and ETD with Substation Electrician and Electronics Concentration classes are held during the day and in the evening to accommodate a variety of schedules. Students who attend full-time during the day can complete the program in two years, once necessary developmental coursework is completed. Evening students will take a minimum of four years to complete the program.

Program Outcomes

Students who graduate from this program will:

- Be prepared with the required theory training for an electrician apprenticeship
- Be well-versed in fundamental electrical theory
- Demonstrate safe and appropriate use of electrical equipment
- Possess in-depth knowledge of the National Electrical Code
- Be prepared for entry-level positions

Technical Standards

It is highly recommended that applicants have:

- The physical strength necessary to move and lift moderately heavy objects
- Good manual dexterity
- Adequate vision for reading printed instructions and electrical diagrams and should not have color blindness (adaptive equipment is acceptable)
- Adequate hearing to distinguish various sounds and changes in pitch (adaptive equipment is acceptable)
- Ability to visualize and portray ideas graphically

Admission Requirements

In addition to college-wide admissions requirements, students must:

- Read at the college level. Placement into English classes will be determined by completing the MCC placement process. This includes review of previous educational experiences, or in some cases submitting a writing sample.
- Place into MATH135M (Numerical Algebra and Trigonometry)
- Interview with the Program Coordinator

Potential Jobs

- Electrician
- Electrical Maintenance Tech
- Electrical Research Tech
- Electrical Distribution Sales
- Electrical Relay Technician
- Electronics Troubleshooter

Potential Salary*

There is a wide range of jobs in the electrical technology industry. See below for the average annual salary range in NH for an **Electrician**.

ENTRY LEVEL	MID-RANGE	EXPERIENCED
\$39,374	\$57,283	\$66,788

*New Hampshire Occupational Employment & Wages 2021, published by the NH Economic + Labor Market Information Bureau — Salaries are based on 40 hours of work, not including overtime.

Transfer Opportunities

- Ferris State University
 - Granite State College
 - Southern NH University
 - UMass Amherst
 - Wentworth Institute of Technology
- ... and many more!

Homes and businesses require more wiring than ever and electricians are needed to install the necessary components.

www.bls.gov

mccnh.edu

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Degree & Certificate Requirements

Electrical Technology Degree

Degree Program - First Year

First Year	Fall Semester	TH	LAB	CR
ETEC110M	Electrical Fundamentals I (1st 8 weeks)	3	3	4
ETEC120M	AC Fundamentals and Residential Wiring	3	3	4
MATH135M	Numerical Algebra and Trigonometry	3	0	3
CIS110M	Microsoft® Computer Applications I	2	2	3
FYE100M	MCC Essentials	1	0	1
Total		12	8	15

First Year	Spring Semester	TH	LAB	CR
ETEC150M	Power, Transformers and Rotating Machinery	3	3	4
ETEC160M	Commercial and Industrial Wiring	3	3	4
MATH151M or MATH151XM	Intermediate Algebra or Intermediate Algebra - Corequisite	4	0	4
ENGL110XM or ENGL110M	College Composition I with Corequisite or College Composition I	4	0	4
	Business Elective	3	0	3
Total		17	6	19

Degree Program - Second Year

Second Year	Fall Semester	TH	LAB	CR
ETEC210M	Electrical and Electronic Motor Controls	3	3	4
ETEC220M	Communications and Low Voltage Building Systems	3	3	4
MATH155M	College Algebra with Trigonometry	4	0	4
ENGL206M	Professional Communication	3	0	3
	Social Science Elective	3	0	3
Total		16	6	18

Second Year	Spring Semester	TH	LAB	CR
ETEC250M	Advanced Control, Digital Fundamentals, PLC Basics	3	3	4
ETEC260M	Renewable and Alternate Energy Systems	3	3	4
PHYS135M	College Physics I	3	3	4
	Foreign Language/Humanities/Fine Arts Elective	3	0	3
Total		12	9	15
Total Credits - 67				

Electrical Lineworker Certificate in Partnership with EVERSOURCE

Graduates will be prepared to work in the electrical-power-utility industry or to transfer credits to the MCC Electrical Technology or Technical Studies degree programs. Key to training is an internship with the International Brotherhood of Electrical Workers (IBEW), Local Unions 104 and 1837.

Semester I	TH	LAB	CR
HFIT102M Wellness and Occupational Injury Prevention	1	0	1
ETEC110M Electrical Fundamentals I	3	3	4
ETEC140M Lineworker I	4	9	7
Semester II			
ETEC120M AC Fundamentals and Residential Wiring	3	3	4
ETEC142M Lineworker Co-op	0	12.5	1
ETEC240M Lineworker II	4	9	7
Total Credits - 24			

Electrical Technology Degree – with Substation Electrician & Electronics Concentration

Degree Program - First Year

First Year	Fall Semester	TH	LAB	CR
ETEC110M	Electrical Fundamentals I (1st 8 weeks)	3	3	4
ETEC122M	Electricity and Electronics	3	0	3
ENGL110XM or ENGL110M	College Composition I with Co-Requisite, or College Composition I	4	0	4
FYE100M	MCC Essentials	1	0	1
≥ 105 level	Physical Science Elective (4 credits minimum)	3	2	4
Total		14	5	16

First Year	Spring Semester	TH	LAB	CR
ETEC150M	Power, Transformers and Rotating Machinery	3	3	4
ETEC157M	Fundamentals of Industrial Instrumentation and Process Control	3	0	3
≥ 155 level	MATH Elective #1	4	0	4
≥ 100 level	Liberal Arts and Sciences Elective	3	0	3
Total		13	3	14

Degree Program - Second Year

Second Year	Fall Semester	TH	LAB	CR
ETEC210M	Electrical and Electronic Motor Controls	3	3	4
ETEC2??M	Electric Power Substation Engineering	3	0	3
≥ 171 level	MATH Elective #2	4	0	4
ETEC220M	Commercial and Low Voltage Building Systems	3	3	4
Total		13	6	15

Second Year	Spring Semester	TH	LAB	CR
ETEC250M	Advanced Control, Digital Fundamentals, PLC Basics	3	3	4
ETEC2??M	Substation Automation Systems	3	0	3
≥ 204 level	MATH Elective #3	4	0	4
≥ 100 level	Social Science Elective	3	0	3
	Foreign Language/Humanities/Fine Arts Elective	3	0	3
Total		16	3	17
Total Credits - 62				

Electrical Technology Certificate

	TH	LAB	CR
ETEC110M Electrical Fundamentals I	3	3	4
ETEC120M AC Fundamentals and Residential Wiring	3	3	4
ETEC150M Power, Transformers, and Rotary Machinery	3	3	4
ETEC160M Commercial and Industrial Wiring	3	3	4
ETEC210M Electrical and Electronic Motor Controls	3	3	4
ETEC220M Communications & Low Voltage Building Systems	3	3	4
ETEC250M Advanced Control - Digital Fundamentals - PLC Basics	3	3	4
ETEC260M Renewable and Alternate Energy Systems	3	3	4
MATH135M Numerical Algebra and Trigonometry	3	0	3
MATH151M or MATH151XM Intermediate Algebra or Intermediate Algebra - Corequisite	4	0	4
Total Credits - 39			

All courses and degree requirements are subject to change. For the most current information on MCC programs, visit mccnh.edu.