

Electronic Engineering Technology (AS)

The field of Electronic Engineering Technology involves testing, troubleshooting, repairing, or installing a variety of electronic printed circuit boards or systems. Graduates are electronic technicians that may perform a broad range of tasks for manufacturing companies or providers of telephone or data networks. An electronic technician generally works under the supervision of engineers and may support design engineers developing a new product by assembling prototypes and testing them to verify their operation. Or the technician may be in the manufacturing department and test and repair products. They also may repair customer products, provide technical support to customers, or assist the sales organization with technical support. Datacom and telecom companies employ electronic technicians to install and maintain their networks. Technicians are hands-on practitioners who know how to apply algebra and trigonometry to real-life problems, or run computer simulations to analyze circuits.

To advance in these careers, it is also important to develop skills in communicating the problems, ideas and solutions to others in the company. Those graduates in departments, which interface with customers, must also develop people skills.

Many graduates choose to continue their education and are accepted into Electronic Technology programs leading to the Bachelor of Science degree. Articulation agreements are in place with Wentworth Institute of Technology and University of Massachusetts Dartmouth. Alternatively, a graduate could choose to pursue a degree in business, acquiring both technical and business skills. Others who choose to enter the workforce are employed by companies producing consumer products, medical device manufacturers, technology for other companies, defense contractors, or network providers.

Curriculum

The curriculum is structured to provide a broad education, with students taking courses in each of the recognized areas of analog circuits, digital circuits, processors, writing skills, presentation skills, algebra, trigonometry, and elementary calculus, computer application skills, programming skills, and problem solving skills. Typically the electronics courses are three hours of lecture and two hours of laboratory work, reinforcing concepts and principles taught in the classroom and providing extensive hands-on education.

Facilities

The electronics laboratory is equipped to provide students ample and meaningful hands-on experience in breadboarding, testing, schematic capture, and simulation of analog and digital circuits. Students will typically spend four hours a week in the laboratory, confirming that the lecture material works in real life and is not unproven theory. Students follow the laboratory experiment with a report where the results are analyzed and discussed. In the laboratory, the students learn how to use standard test equipment to build circuits, create schematics, and test circuits using standard laboratory test equipment.

Outcomes

By the time of graduation, the Electronic Engineering Technology graduate will be able to:

1. Analyze or troubleshoot in three major electronic engineering areas: Analog Circuits, Digital Circuits, and Processors.
2. Recognize and apply fundamental knowledge of mathematics, especially algebra and trigonometry.
3. Conduct experiments in teams, building or breadboarding, using basic test equipment and tools to measure performance, and to critically analyze and interpret data.
4. Effectively communicate either technical observations, results, issues, and successes or negotiate a change in design or procedure.
5. Apply computer skills for preparing technical documents or analyzing data: using applications for word processing, spreadsheets, simple programming, schematic capture, and simulation.
6. Calculate costs.
7. Read manuals and schematics and identify components on a printed wiring board.
8. Apply proper laboratory procedures.

Faculty

James Giumarra, Chair

Instructor Staff: Patrick Hoffman, Mozhgan Hosseinpour, Richard Le Blanc

Degree Requirements for Electronic Engineering Technology (AS)

TECHNICAL COURSES: 39 CREDITS

<u>Course #</u>	<u>Course Title</u>	<u>Credits</u>	<u>Hours Per Week</u>	
			<u>Lecture</u>	<u>Lab</u>
CT143	Introduction to Programming Logic and C++	4	3	2
EE101	Intro to Electro-Mechanical Systems	3	2	2
EE110	DC Circuits	4	3	2
EE113	AC Circuits	4	3	2
EE122	Electronics I	4	3	2
EE131	Digital Principles	4	3	2
EE223	Electronics II	4	3	2
EE235	Programmable Logic	4	3	2
EE240	Embedded Processors	4	3	2
EE250	Electronic Communications	4	3	2

GENERAL EDUCATION COURSES: 34 CREDITS

<u>Course #</u>	<u>Course Title</u>	<u>Credits</u>	<u>Hours Per Week</u>	
			<u>Lecture</u>	<u>Lab</u>
EN130	College Composition I	3	3	0
EN140	College Composition II	3	3	0
EN320	Technical Communications	3	3	0
HU/SS	Elective	3	3	0
MA120	College Algebra and Trigonometry	3	3	0
MA130	Pre-Calculus	3	3	0
MA240	Calculus I	4	4	0
MA250	Calculus II	4	4	0
PH215	Physics Lab I	1	0	2
PH222	University Physics I	3	3	0
PH223	University Physics II	3	3	0
PH225	Physics Lab II	1	0	2

Typical Course Sequence for Electronic Engineering Technology (AS)

SEMESTER 1

EE101	Intro to Electro-Mechanical Systems
EE110	DC Circuits
EE131	Digital Principles
EN130	College Composition I
MA120	College Algebra and Trigonometry

SEMESTER 2

CT143	Introduction to Programming Logic and C++
EE113	AC Circuits
EE122	Electronics I
EN140	College Composition II
MA130	Pre-Calculus

SEMESTER 3

EE223	Electronics II
EE235	Programmable Logic
EN320	Technical Communications
MA240	Calculus I
PH215	Physics Lab I
PH222	University Physics I

SEMESTER 4

EE240	Embedded Processors
EE250	Electronic Communications
HU/SS	Elective
MA250	Calculus II
PH223	University Physics II
PH225	Physics Lab II