ELECTRONICS ENGINEERING TECHNOLOGY (AAS)

Manufacturing and Construction

Program website (https://www.harpercollege.edu/academics/manufacturing/electronics-engineering/electronics-engineering-technology-degree.php)

Program Overview

This 60 credit-hour program is designed to prepare students for careers in the field of electronics and other related technology industries. The curriculum satisfies general education requirements, and offers courses in mathematics, computer science and physics to cultivate student critical thinking skills. A broad range of electronics courses provides considerable emphasis on analysis and application, or applied technology. Specific electronics engineering technology topics for this program include: electrical laws and principles, network analysis, semiconductor devices, digital and analog circuits, communications systems, industrial control systems utilizing sensors, fluid power and programmable logic controllers, and embedded microcontroller/processor systems. Additional courses in the industrial electronics area are also available.

Graduates of this program may find employment as technical sales specialists, applications engineers, engineering laboratory technicians, technical writers, manufacturing and quality control technicians, and customer service engineers.

Graduates may also continue their education by pursuing a Bachelor of Science in Electronics Engineering Technology (BSEET) degree at a four-year college or university offering this type of program. Students considering this transfer option are encouraged to meet with the Program Coordinator and an academic advisor prior to beginning the program, and also when planning their schedule each semester.

Program Requirements

First Semester		**Hours**
ELT 101	DC Network Analysis	4
ELT 110	Introductory Electronics	4
ENG 101	Composition I	3
MTH 103	College Algebra [1]	3
	Hours	**14**
Second Semester		
CIS 106 or NET 105	Computer Logic and Programming Technology or Information Technology Fundamentals	3
ELT 102	AC Network Analysis	4
ELT 111	Semiconductor Devices and Circuits	2
ELT 135	Optics and Sensors	2
MTH 140	Precalculus	5
	Hours	**16**
Third Semester		
ELT 140	Introduction to Programmable Logic Controllers	2
ELT 203	Digital Electronics	4
Humanities or Social and Behavioral Science [+]		3
PHY 121	Introductory Physics I	5
	Hours	**14**
Fourth Semester		
ELT 207	Communications Systems	4
ELT 215	Industrial Control Systems	4
ELT 218	Embedded Microcontroller/Microprocessor Systems	4
ELT 240 or ELT 281	Advanced Programmable Logic Controllers or Topics in Electronics Engineering Technology	4
	Hours	**16**
	Total Hours	**60**

+ Students need to choose a course to meet this requirement that also meets the World Cultures and Diversity graduation requirement. See full list of AAS General Education Electives (https://catalog.harpercollege.edu/catalog/programs/aas-general-education-electives/).

1 Students who place into MTH 103 or higher may take a three credit-hour AAS General Education elective in place of mathematics. See full list of AAS General Education Electives.

Program Learning Outcomes

Students who successfully complete this program will be able to:

- Apply electrical safety procedures in the field or the laboratory.
- Demonstrate effective soldering techniques and safely use standard hand tools and test instrumentation to prototype, analyze, maintain, troubleshoot and repair electrical or electronic equipment with a minimum of supervision.
- Read technical and service manuals containing wiring, schematic and printed circuit board diagrams.
- Understand concepts of matter and energy, and how they relate to the components that generate, carry or control electricity.
- Understand basic electric, magnetic and electromagnetic field relationships.
- Understand electrical quantities, symbols, units, laws and principles, and their interrelationships and application.
- Analyze series, parallel and series-parallel DC, AC and RF networks.
- Analyze single time constant circuits, single and three-phase steady state AC circuits, filters and RLC resonant circuits.
- Understand semiconductor device applications, operation and fabrication, and analyze analog and digital circuits employing diodes, transistors, integrated circuits and displays.
- Understand contemporary wireless communications system applications, operation and analysis.

Gainful Employment

Harper College provides Gainful Employment information to comply with the U.S. Department of Education.