



What is the Electrical Engineering Program?

HCC's Electrical Engineering Technology Program prepares students for careers as electrical engineering technicians who assist engineers in the maintenance, installation, design, fabrication, and testing of electrical and electronic devices and systems. Students in the program will obtain the scientific, electrical, and technical engineering skills necessary to function as contributing members of engineering teams. The Electrical Engineering Technology Program incorporates the basic electronics certificate, which creates a stackable credential resulting in a pathway to a job as well as degree completion. The curriculum provides a blend of skills and technical knowledge, as well as academic preparation facilitating students' transfer to an applied engineering technology/manufacturing baccalaureate degree program or job entry into an engineering environment.

What type of students excel in this program?

Individuals who excel in electrical engineering possess a strong analytical aptitude, are naturally inquisitive, and enjoy hands-on activities. In addition, they have an excellent attention to detail, good communication skills, the ability to think logically and come up with creative solutions, excellent problem-solving skills, strong math skills, and the ability to work well with others.

What types of jobs do electrical engineering technicians perform?

Electrical and electronics engineering technicians help engineers design and develop computers, communications equipment, medical monitoring devices, navigational equipment, security systems, power systems, computer farms, and other electrical and electronic equipment. They often work in product evaluation and testing, using measuring and diagnostic devices to adjust, test, and repair equipment. They are also involved in the manufacture and deployment of equipment for automation.

Electrical engineering technician jobs might include repair and maintenance of the employer's electronics equipment. This requires the ability to read schematics and maintenance manuals, test and troubleshoot equipment, solder and unsolder components, and research parts availability and costs. Specialized licenses are required when working on equipment requiring Federal Communications Commission (FCC) licensing or working in physically hazardous environments such as nuclear power.

What is the employment outlook for this career?

Employment of electrical and electronics installers and repairers of commercial and industrial equipment is projected to grow three percent from 2012 to 2022. (source: www.bls.gov/ooh)

What are the average earnings?

Earnings will vary by education, job, and geographic location. Median annual wages of electrical and electronics repairers of commercial and industrial equipment were \$51,220 in 2012 with the top 10 percent earning more than \$75,740. (source: www.bls.gov/ooh)

HCC's A.A.S. degree, however, can be applied towards a variety of positions that may achieve much greater income, depending on experience and specific skills developed. Regional businesses have reported yearly salaries in excess of \$80,000 per year for workers with 10 or more years of experience.

What do Electrical Engineering students learn?

Students in the electrical engineering program learn all the necessary skills to perform in today's technical environment: DC/AC electronics, Analog and Digital Electronics, Microprocessors, Robotics, Telecommunication, Process Control, PLC (Programmable Logic Control), SCA (Supervisory Control and Data Acquisition) and Automation Systems, Electronic Design, Energy Audits, and Computer and Industrial Networking.

What makes HCC's program special?

As a state-wide designated program, out-of-county and out-of-state students may be eligible for in-county tuition. HCC's continued investment in facilities and state-of-the-art teaching tools also offers students a competitive edge as they enter the workforce or continue their education. Program instructors have critical industry experience to provide the applications knowledge to make this program instantly useful.

In addition, HCC's A.A.S. degree trains students for many of the tasks traditionally performed by engineers with a four-year degree. As a result, this program is an excellent stepping-stone for students interested in completing an engineering degree.

Does HCC offer a separate electronics program?

Yes, HCC now offers an electronics certificate program that provides students with credentials for a career in the growing area of industrial electricity, an area that is standard in manufacturing, commercial and residential buildings.

A.A.S. Degree

Electrical Engineering Technology

General Education Requirements 19 credits

Arts and Humanities

Select from approved General Education course list .. 3

Behavioral/Social Sciences

Select from approved General Education course list .. 3

Biological/Physical Science

PHY 201 General Physics I..... 4

Diversity

Select from approved General Education course list .. 3

English

Select from approved General Education course list .. 3

**Minimum grade of a "C" or better is required.*

Mathematics

Select from approved General Education course list .. 3

Program Requirements 35 credits

- ELE 101 Device Data System Architecture 3
- ELE 103 Analog and Digital Electronics 3
- ELE 105 Microprocessors & Microcontrollers..... 3
- ELE 110 Fundamentals of Electricity..... 4
- ELE 158 Circuits, Schematics, and Test Equipment..... 3
- ELE 204 Electrical Machines 3
- ELE 206 Electronic Communications Systems 3
- ELE 207 Advanced Electronics/Electricity 3
- ELE 208 Advanced Digital Circuit Design and Analysis 4
- INT 102 Introduction to PLCs 3
- INT 104 Facilities Safety and Compliance..... 3

Free Electives 6 Credits

Free electives should be selected in consultation with an advisor to satisfy career goals and/or transfer college requirements.

Degree Requirement..... 60

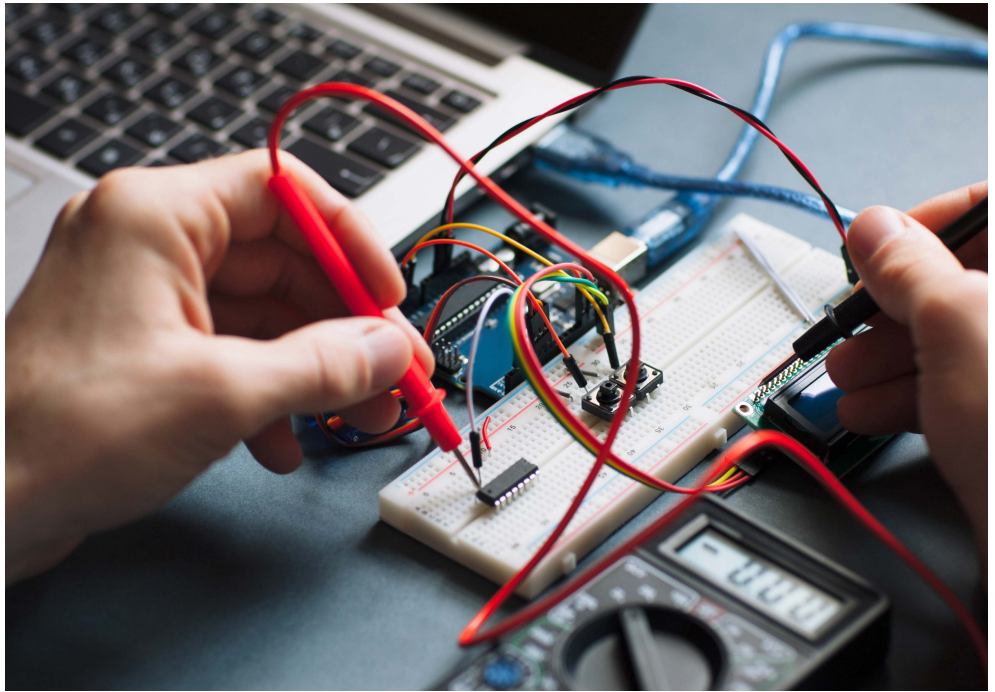
Certificate

Basic Electronics

Program Requirements 16 credits

- ELE 103 Analog and Digital Electronics 3
- ELE 110 Fundamentals of Electricity..... 4
- ELE 113 Instrumentation and Process Control I.. 3
- ELE 158 Circuits, Schematics, and Test Equipment..... 3
- INT 102 Introduction to PLCs 3

Certificate Requirement 16



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