

Electrical Engineering Technology

The Associate in Applied Science degree in Electrical Engineering Technology has been specifically designed to prepare individuals to become advanced technicians in the workforce.

Electrical Engineering Technicians (Associates degree holders) typically build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, instrumentation systems, communication systems, and power electronic systems.

A broad-based core of courses ensures that students develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the ability to think critically, analyze, and troubleshoot electronic systems. Beginning with electrical fundamentals, course work progressively introduces electronics, 2D Computer Aided Design (CAD), circuit simulation, solid-state fundamentals, digital concepts, instrumentation, C++ programming, microprocessors, programmable Logic Controllers (PLCs). Other course work includes the study of various fields associated with the electrical/electronic industry.

This degree program focuses on the knowledge and skills associated with the installation, maintenance, integration and troubleshooting of instrumentation and control systems. It is intended for workforce development to permit students to go directly into industry with this degree.

Graduates should qualify for employment as engineering assistants or as computer, electrical, or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, communications technician, electronic tester, electronic systems integrator, electrical and electronics repairers, electromechanical equipment assemblers, electrical drafter, electronics and instrumentation technician, control technician, bench technician, electric motor, power tool, and related repairers, or production control technician.

The AAS degree in Electrical Engineering Technology is accepted at some colleges and universities as the first two years of a bachelor's-level engineering technology program and graduates can transfer to a university program to finish a bachelor's degree; however, there will be deficiencies.

Information on the Electrical Engineering Technology program may be found on the Electrical Engineering Technology website.

For specific information about potential positions and wages in electrical engineering technology employment, visit the Central Piedmont Career Coach website.

Electrical Engineering Technology (A40180)

Degree Awarded

The Associate in Applied Science Degree - Electrical Engineering Technology is awarded by the College upon completion of the program.

Program Accreditation

The Electrical Engineering Technology program at Central Piedmont is accredited by the Engineering Technology Accreditation Commission (TAC) of the Accreditation Board of Engineering and Technology (ABET).

How to Apply:

Complete a Central Piedmont admissions application through Get Started on the Central Piedmont website.

Contact Information

For questions about the program or for assistance as a student in the program, contact faculty advising. The Electrical Engineering Technology program is in the Engineering Technology Division. For additional information, visit the Electrical Engineering Technology website or call the Program Chair at 704.330.6773.

General Education Requirements

| | | |
|------------------------------------|---|-----|
| ENG 111 | Writing and Inquiry | 3.0 |
| Select one of the following: | | 3.0 |
| COM 110 | Introduction to Communication | |
| COM 231 | Public Speaking | |
| ENG 112 | Writing and Research in the Disciplines | |
| ENG 113 | Literature-Based Research | |
| ENG 114 | Professional Research & Reporting | |
| MAT 171 | Precalculus Algebra | 4.0 |
| or MAT 271 | Calculus I | |
| Select 3 credits of the following: | | 3.0 |
| ART 111 | Art Appreciation | |
| ART 114 | Art History Survey I | |
| ART 115 | Art History Survey II | |
| HUM 120 | Cultural Studies | |
| DRA 111 | Theatre Appreciation | |
| HUM 130 | Myth in Human Culture | |
| MUS 110 | Music Appreciation | |
| MUS 112 | Introduction to Jazz | |
| PHI 215 | Philosophical Issues | |
| PHI 240 | Introduction to Ethics | |
| REL 110 | World Religions | |
| Select 3 credits of the following: | | 3.0 |
| ECO 251 | Principles of Microeconomics | |
| ECO 252 | Principles of Macroeconomics | |
| HIS 111 | World Civilizations I | |
| HIS 112 | World Civilizations II | |
| HIS 131 | American History I | |
| HIS 132 | American History II | |
| POL 120 | American Government | |
| PSY 150 | General Psychology | |
| SOC 210 | Introduction to Sociology | |

Major Requirements

| | | |
|---------|--------------------------|-----|
| ACA 122 | College Transfer Success | 1.0 |
| ELC 131 | Circuit Analysis I | 4.0 |
| ELN 133 | Digital Electronics | 4.0 |
| ELC 231 | Electric Power Systems | 4.0 |
| ELC 135 | Electrical Machines | 3.0 |

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|--|---|-----------|
| ELN 131 | Analog Electronics I | 4.0 |
| ELN 260 | Programmable Logic Controllers | 4.0 |
| ELN 150 | Computer-Aided Drafting for Electronics | 2.0 |
| or EGR 120 | Engineering and Design Graphics | |
| ELC 133 | Circuit Analysis II | 4.0 |
| PCI 170 | DAQ and Control | 4.0 |
| or PCI 173 | Programmable Systems | |
| CSC 134 | C++ Programming | 3.0 |
| ELN 232 | Introduction to Microprocessors | 4.0 |
| Select 4 credits from the following: | | 4.0 |
| PHY 151 | College Physics I | |
| PHY 251 | General Physics I | |
| MAT 172 | Precalculus Trigonometry | 4.0 |
| or MAT 272 | Calculus II | |
| Select 2 credits from the following courses: | | 2.0 |
| WBL 112 | Work-Based Learning I | |
| ISC 112 | Industrial Safety | |
| Total Credits | | 67 |

No diplomas are offered in Electrical Engineering Technology.

Electrical Engineering Technology Certificates (C40180)

Electrical Engineering Technology Certificate Specialization in Automation Control (C40180-C6)

Major Requirements

| | | |
|----------------------|--------------------------------|-----------|
| ELN 260 | Programmable Logic Controllers | 4.0 |
| ELC 135 | Electrical Machines | 3.0 |
| ELC 136 | Electrical Machines II | 4.0 |
| PCI 173 | Programmable Systems | 4.0 |
| Total Credits | | 15 |

Electrical Engineering Technology Suggested Course Sequence

The following is the suggested plan for when to take each course to complete the Associate in Applied Science degree, based on the program requirements of the 2024-2025 catalog. This is only a recommendation — you may take courses in another order upon consultation with your advisor. This plan is based on you starting with college-level math and English courses, starting your program in the fall, and attending full-time. You can also follow this sequence if you attend part-time. Speak with your academic advisor about the plan and any questions. This program might also offer diplomas or certificates; visit the catalog or contact the program for details. Visit the Academic Advising page for instructions on locating your assigned advisor: <https://www.cpcc.edu/academics/academic-advising>

| Term I | | Credits |
|------------|---|---------|
| ENG 111 | Writing and Inquiry | 3.0 |
| MAT 171 | Precalculus Algebra | 4.0 |
| ELC 131 | Circuit Analysis I | 4.0 |
| ELN 133 | Digital Electronics | 4.0 |
| ELN 150 | Computer-Aided Drafting for Electronics | 2.0 |
| or EGR 120 | or Engineering and Design Graphics | |

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|---------------------------|--|-----------|
| ACA 122 | College Transfer Success | 1.0 |
| Credits | | 18 |
| Term II | | |
| COM 110 | Introduction to Communication | 3.0 |
| or ENG 112 | or Writing and Research in the Disciplines | |
| ELC 133 | Circuit Analysis II | 4.0 |
| ELN 260 | Programmable Logic Controllers | 4.0 |
| CSC 134 | C++ Programming | 3.0 |
| Credits | | 14 |
| Term III | | |
| Behavioral/Social Science | | 3.0 |
| MAT 172 | Precalculus Trigonometry | 4.0 |
| ELC 135 | Electrical Machines | 3.0 |
| ELN 131 | Analog Electronics I | 4.0 |
| ELN 232 | Introduction to Microprocessors | 4.0 |
| Credits | | 18 |
| Term IV | | |
| ELC 231 | Electric Power Systems | 4.0 |
| Humanities/Fine Arts | | 3.0 |
| PHY 151 | College Physics I | 4.0 |
| PCI 170 | DAQ and Control | 4.0 |
| or PCI 173 | or Programmable Systems | |
| WBL 112 | Work-Based Learning I | 2.0 |
| or ISC 112 | or Industrial Safety | |
| Credits | | 17 |
| Total Credits | | 67 |