

# ELECTRICAL ENGINEERING TECHNOLOGY, B.S. (CAPITAL)

**Begin Campus:** Any Penn State Campus

**End Campus:** Harrisburg

## Degree Requirements

For the Bachelor of Science degree in Electrical Engineering Technology, a minimum of 128 credits is required:

| Requirement                | Credits |
|----------------------------|---------|
| General Education          | 45      |
| Electives                  | 5-16    |
| Requirements for the Major | 85-96   |

18 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 3 credits of GWS courses; 9 credits of GN courses; 6 credits of GQ courses.

## Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

### Common Requirements for the Major (All Options)

| Code  | Title   | Credits |
|---|---|---------|
| <b>Prescribed Courses</b>                                 |   |         |
| CHEM 110  | Chemical Principles I                                 | 3       |
| CHEM 111  | Experimental Chemistry I                              | 1       |
| EET 419   | Project Proposal Preparation                          | 1       |
| ENGL 202C   | Effective Writing: Technical Writing                  | 3       |
| MATH 140  | Calculus With Analytic Geometry I                     | 4       |
| MATH 141  | Calculus with Analytic Geometry II                    | 4       |
| <i>Prescribed Courses: Require a grade of C or better</i> |   |         |
| EET 312   | Electric Transients                                   | 4       |
| EET 331   | Electronic Design                                     | 4       |
| EET 420W  | Electrical Design Project                             | 3       |
| <b>Additional Courses</b>                                 |   |         |
| Select 2-3 credits of the following: <sup>1</sup>         |   | 2-3     |
| EDSGN 100   | Cornerstone Engineering Design                        |         |
| EGT 101   | and Introduction to Computer Aided Drafting & EGT 102 |         |
| Select 3 credits of the following:                        |   | 3       |
| CMPSC 101   | Introduction to Programming                           |         |
| CMPSC 121   | Introduction to Programming Techniques                |         |
| CMPSC 201   | Programming for Engineers with C++                    |         |
| Select 6-8 credits of the following: <sup>1</sup>         |   | 6-8     |
| PHYS 150  | Technical Physics I                                   |         |
| & PHYS 151  | and Technical Physics II                              |         |
| PHYS 211  | General Physics: Mechanics                            |         |
| & PHYS 212  | and General Physics: Electricity and Magnetism        |         |
| Select 3-4 credits of the following:                      |   | 3-4     |

|  |  |                |
|--|--|----------------|
| MATH 230   | Calculus and Vector Analysis                             |                |
| MATH 250   | Ordinary Differential Equations                          |                |
| MATH 411   | Ordinary Differential Equations                          |                |
| STAT 200   | Elementary Statistics                                    |                |
| Select 4 credits of the following: <sup>1</sup>                      |  | 4              |
| CMPEN 271  | Introduction to Digital Systems                          |                |
| & CMPEN 275  | and Digital Design Laboratory                            |                |
| CMPET 117  | Digital Electronics                                      |                |
| & CMPET 120  | and Digital Electronics Laboratory                       |                |
| Select 3-4 credits of the following: <sup>1</sup>                    |  | 3-4            |
| CMPEH 472  | Microprocessors  |                |
| CMPET 211  | Embedded Processors and DSP                              |                |
| Select 3-4 credits of the following: <sup>1</sup>                    |  | 3-4            |
| EE 310   | Electronic Circuit Design I                              |                |
| EET 205  | and  |                |
| & EET 210  |  |                |
| Select 3-5 credits of the following: <sup>1</sup>                    |  | 3-5            |
| EE 485   | Energy Systems and Conversion                            |                |
| EET 213W   | Fundamentals of Electrical Machines Using Writing Skills |                |
| <i>Additional Courses: Require a grade of C or better</i>            |  |                |
| Select 5-8 credits of the following: <sup>1</sup>                    |  | 5-8            |
| EE 210   | Circuits and Devices                                     |                |
| & EE 314   | and Signals and Circuits II                              |                |
| EE 315   | Electrical Signals and Circuits with Lab                 |                |
| EET 311  | Alternating Current Circuits                             |                |
| & EET 114  | and Electrical Circuits II <sup>2</sup>                  |                |
| <b>Requirements for the Option</b>                                   |  |                |
| Select an option   |  | 26             |
| <sup>1</sup> Courses required by PSU 2 EET programs.                 |  |                |
| <sup>2</sup> EET 114 does not require a grade of C or better.        |  |                |
| <b>Requirements for the Option</b>                                   |  |                |
| <b>Computer Engineering Technology Option (26 credits)</b>           |  |                |
| <i>Available at the following campuses: Harrisburg, Wilkes-Barre</i> |  |                |
| <b>Code</b>  | <b>Title</b>   | <b>Credits</b> |
| <b>Prescribed Courses</b>  |  |                |
| CMPEN 431  | Introduction to Computer Architecture                    | 3              |
| CMPET 401  | Data Communication and Networking                        | 3              |
| CMPET 402  | Data Communication and Networking Laboratory             | 1              |
| CMPET 403  | Switching Circuit Design                                 | 4              |
| <b>Additional Courses</b>  |  |                |
| <i>2nd Programming Elective</i>                                      |  |                |
| Select 3 credits of the following:                                   |  | 3              |
| CMPSC 122  | Intermediate Programming                                 |                |
| CMPSC 402  |  |                |
| <i>Applications Elective</i>   |  |                |
| Select 4 credits of technical electives of the following:            |  | 4              |
| CMPET 412  | Microcomputers   |                |
| EET 456  | Automation and Robotics                                  |                |
| <i>CMPET Technical Electives</i>                                     |  |                |
| Select 8 credits of the following:                                   |  | 8              |

|         |   |
|---------|---|
| EE 341  | Semiconductor Device Principles             |
| EE 441  | Semiconductor Integrated Circuit Technology |
| EE 453  | Fundamentals of Digital Signal Processing   |
| EET 402 | High-Frequency Circuit Design               |
| EET 408 | Communication System Design                 |
| EET 413 | Optoelectronics                             |
| EET 414 | Biomedical Instrumentation                  |
| EET 431 | Advanced Electronic Design                  |
| EET 433 | Control System Analysis and Design          |
| EET 478 | Digital Communication Systems               |
| ET 496  | Independent Studies                         |

**General Electrical Engineering Technology Option (26 credits)***Available at the following campuses: Harrisburg, Wilkes-Barre*

| Code   | Title  | Credits |
|--|--|---------|
| <b>Additional Courses</b>  |  |         |
| <i>System Elective</i>   |  |         |
| Select 8 credits of technical electives of the following:            |  | 8       |
| EET 408  | Communication System Design                  |         |
| EET 409  | Power System Analysis I                      |         |
| EET 433  | Control System Analysis and Design           |         |
| <i>Electronics Elective</i>  |  |         |
| Select 4 credits of the following:                                   |  | 4       |
| EET 402  | High-Frequency Circuit Design                |         |
| EET 431  | Advanced Electronic Design                   |         |
| <i>GEET Technical Electives</i>                                      |  |         |
| Select 8 credits of GEET technical electives of the following:       |  | 8       |
| CMPEN 431  | Introduction to Computer Architecture        |         |
| CMPET 401  | Data Communication and Networking            |         |
| CMPET 402  | Data Communication and Networking Laboratory |         |
| CMPET 403  | Switching Circuit Design                     |         |
| CMPET 412  | Microcomputers                               |         |
| EE 441   | Semiconductor Integrated Circuit Technology  |         |
| EE 453   | Fundamentals of Digital Signal Processing    |         |
| EE 458   | Digital Image Processing and Computer Vision |         |
| EET 410  | Power System Analysis II                     |         |
| EET 413  | Optoelectronics                              |         |
| EET 414  | Biomedical Instrumentation                   |         |
| EET 456  | Automation and Robotics                      |         |
| EET 478  | Digital Communication Systems                |         |
| ET 496   | Independent Studies                          |         |
| Select 6 credits from any previous elective list plus the following: |  | 6       |
| <i>CMPSC 452</i>   |  |         |
| EMCH 211   | Statics                                      |         |
| EMCH 212   | Dynamics                                     |         |
| ME 201   | Introduction to Thermal Science              |         |

**General Education**

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense

of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

**Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)**

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

**Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)**

- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits
- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

**Integrative Studies**

- **Inter-Domain Courses (Inter-Domain):** 6 credits

**Exploration**

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GHW, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 6 credits

**University Degree Requirements****First Year Engagement**

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

**Cultures Requirement**

6 credits are required and may satisfy other requirements

- **United States Cultures:** 3 credits
- **International Cultures:** 3 credits

**Writing Across the Curriculum**

3 credits required from the college of graduation and likely prescribed as part of major requirements.

**Total Minimum Credits**

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

**Quality of Work**

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

**Limitations on Source and Time for Credit Acquisition**

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80>)). For more information, check the Suggested Academic Plan for your intended program.