ELECTRICAL ENGINEERING TECHNOLOGY, B.S. (ENGINEERING)

Begin Campus: Any Penn State Campus

End Campus: Wilkes-Barre

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	5-18
Requirements for the Major	86-96

18-21 of the 45 credits for General Education are included in the Requirements for the Major. For the General Electrical Engineering Technology Option, this includes: 3 credits of GWS courses; 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS. For the Power and Automation Option, this includes: 3 credits of GWS coures; 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
Prescribed Courses		
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
EET 419	Capstone Proposal Preparation	1
Prescribed Courses: Require a grade of C or better		
EET 312	Electric Transients	4
EET 331	Electronic Design	4
EET 420W	Electrical Engineering Technology Capstone Design	3
ENGL 202C	Effective Writing: Technical Writing	3
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
Additional Courses		
CMPEH 472	Microprocessors	3-4
or CMPET 211	Embedded Processors and DSP	
EE 310	Electronic Circuit Design I	4
or EET 212W	Op Amp and Integrated Circuit Electronics	
Select 2-3 credits from the following:		2-3
EDSGN 100	Cornerstone Engineering Design	
EDSGN 100S	Introduction to Engineering Design	
EGT 119	Introduction to CAD for Electrical and Computer Engineering	
Select 3 credits from the following:		3
CMPSC 101	Introduction to Programming	
CMPSC 121	Introduction to Programming Techniques	
CMPSC 131	Programming and Computation I: Fundamentals	
CMPSC 201	Programming for Engineers with C++	
Select 3-4 credits from the following:		3-4
PHYS 150	Technical Physics I	
PHYS 211	General Physics: Mechanics	
PHYS 250	Introductory Physics I	
Select 3-4 credits from the following:		3-4
PHYS 151	Technical Physics II	
PHYS 212	General Physics: Electricity and Magnetism	
PHYS 251	Introductory Physics II	
Select 3-4 credits from the following:		3-4
IE 424	Process Quality Engineering	
MATH 220	Matrices	
MATH 230	Calculus and Vector Analysis	
MATH 250	Ordinary Differential Equations	
MATH/STAT 414	Introduction to Probability Theory	
MATH/STAT 418	Introduction to Probability and Stochastic Processes for Engineering	
STAT 200	Elementary Statistics	
STAT 401	Experimental Methods	
Select 4 credits from the following:		4
CMPEN 270	Digital Design: Theory and Practice	
CMPEN 271 & CMPEN 275	Introduction to Digital Systems and Digital Design Laboratory	
CMPET 117 & CMPET 120	Digital Electronics and Digital Electronics Laboratory	
Select 3-5 credits from the following:		3-5
EE 485	Energy Systems and Conversion	
EET 213W	Fundamentals of Electrical Machines Using Writing Skills	
EET 214 & EET 215	Electric Machines and Energy Conversion and Electric Machines and Energy Conversion Laboratory	
Additional Courses: Require a grade of C or better		
Select 5-8 credits from the following:		5-8
EE 210 & EE 317	Circuits and Devices and Circuits II and Data Acquisition	
EET 310	Direct and Alternating Current Circuits	
EET 311 & EET 114	Alternating Current Circuits and Electrical Circuits II [1]	
Requirements for the Option		
Select an option		26

[1] EET 114 does not require a grade of C or better.

Requirements for the Option

General Electrical Engineering Technology Option (26 credits)

Available at the following campuses: Harrisburg, Wilkes-Barre

Code	Title	Credits
Prescribed Courses		
ENGR 320Y	Design for Global Society	3
Additional Courses		
System Elective		
Select 8 credits of technical electives from the following:		8
EET 408	Communication System Design	
EET 409	Power System Analysis I	
EET 433	Control System Analysis and Design	
Electronics Elective		
Select 4 credits from the following:		4
EE 413	Power Electronics	
EET 402	High-Frequency Circuit Design	
EET 431	Advanced Electronic Design	
EET 461	Power Electronics	
EET 496	Independent Studies	
GEET Technical Electives		
Select 8 credits of GEET technical electives from 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 413	Power Electronics	
EE 442	Solid State Devices	
EE 453	Fundamentals of Digital Signal Processing	
EE/EGEE/ESC 456	Introduction to Neural Networks	
EE 458	Digital Image Processing and Computer Vision	
EET 402	High-Frequency Circuit Design	
EET 408	Communication System Design	
EET 409	Power System Analysis I	
EET 410	Power System Analysis II	
EET 413	Optoelectronics	
EET 414	Biomedical Instrumentation	
EET 431	Advanced Electronic Design	
EET 433	Control System Analysis and Design	
EET 456	Automation and Robotics	
EET 461	Power Electronics	
EET 478	Digital Communication Systems	
EET 496	Independent Studies	
Science, Engineering, and Technology (SET Electives)		
Select 3 credits from the following:		3
BIOL 141	Introduction to Human Physiology	
CHEM 112	Chemical Principles II	
CHEM 113	Experimental Chemistry II	
CMPSC 122	Intermediate Programming	
CMPSC 132	Programming and Computation II: Data Structures	
CMPSC 200	Programming for Engineers with MATLAB	
CMPSC 201	Programming for Engineers with C++	
CMPSC 312	Computer Organization and Architecture	
EE 330	Engineering Electromagnetics	
EE 341	Semiconductor Device Principles	
EMCH 211	Statics	
EMCH 212	Dynamics	
EMCH 213	Strength of Materials	
MATH 220	Matrices	
MATH 230	Calculus and Vector Analysis	
MATH 231	Calculus of Several Variables	
MATH 232	Integral Vector Calculus	
MATH 250	Ordinary Differential Equations	
MATH 251	Ordinary and Partial Differential Equations	
MATH 252	Partial Differential Equations	
MATH 430	Linear Algebra and Discrete Models I	
ME 201	Introduction to Thermal Science	
ME 300	Engineering Thermodynamics I	
PHYS 213	General Physics: Fluids and Thermal Physics	
PHYS 214	General Physics: Wave Motion and Quantum Physics	
PHYS 237	Introduction to Modern Physics	
PHYS 462	Applications of Physics in Medicine	
SSET 495	Internship	
STAT 200	Elementary Statistics	

Power and Automation Option (26 credits)

Available at the following campuses: Harrisburg, Wilkes-Barre

Code	Title	Credits
Additional Courses		
System Electives		
Select 12 credits from the following:		12
EET 409	Power System Analysis I	
EET 410	Power System Analysis II	
EET 433	Control System Analysis and Design	
EET 461	Power Electronics	
EET 475	Intermediate Programmable Logic Controllers	
Additional Electives		
Select 14 credits from the following:		14
CMPET 401	Data Communication and Networking	
CMPET 402	Data Communication and Networking Laboratory	
CMPET 403	Switching Circuit Design	
EET 341	Measurements and Instrumentation	
EET 402	High-Frequency Circuit Design	
EET 408	Communication System Design	
EET 409	Power System Analysis I	
EET 410	Power System Analysis II	
EET 413	Optoelectronics	
EET 414	Biomedical Instrumentation	
EET 431	Advanced Electronic Design	
EET 433	Control System Analysis and Design	
EET 456	Automation and Robotics	
EET 461	Power Electronics	
EET 475	Intermediate Programmable Logic Controllers	
EET 478	Digital Communication Systems	
EET 495	Internship	

EET 496	Independent Studies
EET 497	Special Topics
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, GS, 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.