

# ELECTRO-MECHANICAL ENGINEERING TECHNOLOGY, B.S. (ALTOONA)

**Begin Campus:** Any Penn State Campus

**End Campus:** Altoona

## Degree Requirements

For the Bachelor of Science degree in Electro-Mechanical Engineering Technology, a minimum of 130 credits is required:

Requirement	Credits
General Education	45
Requirements for the Major	109-114

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

### 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.)

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

### Knowledge Domains

- **Arts (GA):** 6 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 6 credits
- **Social and Behavioral Sciences (GS):** 6 credits
- **Natural Sciences (GN):** 9 credits

### Integrative Studies (may also complete a Knowledge Domain requirement)

- **Inter-Domain or Approved Linked Courses:** 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 (<http://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.

## 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 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Code	Title	Credits
<b>Prescribed Courses</b>		
CMPET 211	Embedded Processors and DSP	3
EDSGN 100	Cornerstone Engineering Design	3
EET 105	Electrical Systems	3
EET 275	Introduction to Programmable Logic Controls	3
EGT 114	Spatial Analysis and Computer-Aided Drafting	2
EMET 100	Computation Tools for Engineering Synthesis	1
EMET 215	Manufacturing Engineering	3
EMET 225	Applied Dynamics	2
EMET 325	Electric Drives	3
EMET 326	Mechanical Drives	3
EMET 350	Quality Control, Inspection, and Design	3

EMET 403	Electromechanical Design Project Preparation	1
EMET 405	Fluid Mechanics and Heat Transfer	3
EMET 410	Automated Control Systems	4
EMET 440	Electro-Mechanical Project Design	3
ENGL 202C	Effective Writing: Technical Writing	3
IET 101	Manufacturing Materials, Processes, and Laboratory	3
IET 333	Engineering Economics for Technologists	2
<i>Prescribed Courses: Require a grade of C or better</i>		
CMPET 117	Digital Electronics	3
CMPET 120	Digital Electronics Laboratory	1
EET 114	Electrical Circuits II	4
EET 118	Electrical Circuits Laboratory	1
EET 212W	Op Amp and Integrated Circuit Electronics	4
EMET 222	Applied Mechanics	3
EMET 230	Computerized I/O Systems	3
EMET 330	Measurement Theory and Instrumentation	3
MET 111	Mechanics for Technology: Statics	3

**Additional Courses**

Select 3 credits of GH or GS of the following: 3

ENGR 320Y	Design for Global Society
STS 200	Critical Issues in Science, Technology, and Society
STS 233Z	Ethics and the Design of Technology
STS 245Z	Globalization, Technology, and Ethics

Select 10-11 credits from: 10-11

CAS 100A	Effective Speech
or CAS 100B Effective Speech	
MATH 83	Technical Calculus <sup>2,3</sup>
or MATH 14(Calculus With Analytic Geometry I	
MATH 210	Calculus with Engineering Technology Applications
or MATH 141(Calculus with Analytic Geometry II	

Select 6-8 credits of GN courses from two of the following groups: 6-8

*Group 1*

PHYS 150	Technical Physics I
PHYS 211	General Physics: Mechanics
PHYS 250	Introductory Physics I

*Group 2*

PHYS 151	Technical Physics II
PHYS 212	General Physics: Electricity and Magnetism
PHYS 251	Introductory Physics II

*Group 3*

CHEM 110	Chemical Principles I
& CHEM 111	and Experimental Chemistry I

*Additional Courses: Require a grade of C or better*

MATH 250	Ordinary Differential Equations <sup>4</sup>	3
or MATH 211 Intermediate Calculus and Differential Equations with Applications		

Select 5-6 credits of the following: 5-6

MATH 22	College Algebra II and Analytic Geometry
& MATH 26	and Plane Trigonometry
MATH 40	Algebra, Trigonometry, and Analytic Geometry

MATH 81	Technical Mathematics I
& MATH 82	and Technical Mathematics II <sup>1</sup>

**Supporting Courses and Related Areas**

Select 3-4 credits of science courses, in consultation with an adviser, 3-4 from the approved department list

Select 6 credits of General Technical Elective courses, in consultation 6 with an adviser, from the approved department list

<sup>1</sup> Students taking MATH 81 and MATH 82 must take MATH 83.<sup>2</sup> Students taking MATH 83 must take MATH 210 and MATH 211.<sup>3</sup> Both MATH 83 and MATH 140 require a grade of C or better.<sup>4</sup> Note that MATH 250 does not carry a C-requirement.