

# MECHANICAL ENGINEERING TECHNOLOGY, A.ENG.T. (BEHREND)

Begin Campus: Erie

End Campus: Erie

## Program Description

This major helps graduates prepare for technical positions in manufacturing, machine and tool design, computer drafting and design, computer integrated manufacturing, materials selection and processes, technical sales, and other related industries in mechanical applications. The primary objective of the program is to provide a broad foundation in mechanical systems and applications; computer systems in drafting (CAD), manufacturing (CAM), and automation and robotics (CIM); production and product design; mechanics, dynamics, and strength of materials.

Graduates of this major may qualify for admission to the baccalaureate degree majors in Mechanical Engineering Technology and Structural Design and Construction Engineering Technology programs at Penn State Harrisburg; the Mechanical Engineering Technology and the Plastics Engineering Technology programs at Penn State Erie, The Behrend College; or the baccalaureate degree major in Electro-Mechanical Engineering Technology offered at Penn State Altoona, Penn State Berks, Penn State New Kensington, or Penn State York. Two tracks are available to streamline the transition to these baccalaureate degree programs. A general track is provided for students who do not plan to continue their engineering technology education at the baccalaureate level.

## What is Mechanical Engineering Technology?

Mechanical engineering technology is the understanding of how products and machinery work and how they are designed, made, and used.

### You Might Like This Program If...

- You are interested in computer-aided drafting (CAD) and computer-aided manufacturing.
- You enjoy physics, math and statistics.
- You have a passion for robotics and automation.
- You have an interest in programming and data acquisition.

## Entrance to Major

Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

## Degree Requirements

For the Associate in Engineering Technology degree in Mechanical Engineering Technology, a minimum of 65 credits is required:

Requirement	Credits
General Education	21
Requirements for the Major	54-64

12-15 of the 21 credits for General Education are included in the Requirements for the Major. This includes: 3 credits of GN courses; 3 credits of GQ courses; 6 credits of GWS courses, 0-3 credits of GH or GS.

## Requirements for the Major

A First-Year Seminar is required for students at Penn State Erie, The Behrend College.

Code	Title	Credits
<b>Prescribed Courses</b>		
CAS 100	Effective Speech	3
IET 215	Production Design	2
IET 216	Production Design Laboratory	2
MET 213	Strength and Properties of Materials	3
MET 214	Strength and Properties of Materials Laboratory <sup>1</sup>	1
MET 210W	Machine Design	3
<i>Prescribed Courses: Require a grade of C or better</i>		
IET 101	Manufacturing Materials, Processes, and Laboratory	3
MET 111	Mechanics for Technology: Statics	3
MET 206	Dynamics	3
<b>Additional Courses</b>		
ENGL 15	Rhetoric and Composition	3
or ENGL 30H	Honors Rhetoric and Composition	
Select 5-6 credits of the following:		5-6
MATH 22 & MATH 26	College Algebra With Analytic Geometry and Applications II and Plane Trigonometry and Applications of Trigonometry	
MATH 40	Algebra, Trigonometry, and Analytic Geometry <sup>1,2</sup>	
MATH 81 & MATH 82	Technical Mathematics I and Technical Mathematics II <sup>1,2</sup>	
MATH 82	Technical Mathematics II <sup>1,2</sup>	
Select 3-4 credits of the following:		3-4
PHYS 150	Technical Physics I	
PHYS 211	General Physics: Mechanics	
PHYS 250	Introductory Physics I	
Select 3-4 credits of the following:		3-4
PHYS 151	Technical Physics II	
PHYS 212	General Physics: Electricity and Magnetism	
PHYS 251	Introductory Physics II	
Select at least 19-24 credits from one of the following three tracks: 19-24		
<b>General Track</b>		
EDSGN 100	Cornerstone Engineering Design	
EDSGN 110	Spatial Analysis in Engineering Design	
or EGT 114	Spatial Analysis and Computer-Aided Drafting	
EET 105	Electrical Systems	
MET 107	Computer Applications for Technologists	
STS 200	Critical Issues in Science, Technology, and Society	
or STS 233	Ethics and the Design of Technology	
or STS 245		
Select at least 6 credits from the approved supporting course list for this track		

*Baccalaureate Electro-Mechanical Engineering Technology (EMET) Track*

CMPET 117	Digital Electronics <sup>1</sup>
CMPET 120	Digital Electronics Laboratory <sup>1</sup>
EDSGN 100	Cornerstone Engineering Design
EDSGN 110	Spatial Analysis in Engineering Design
or EGT 114	Spatial Analysis and Computer-Aided Drafting
EET 105	Electrical Systems
EET 114	Electrical Circuits II <sup>1</sup>
EET 118	Electrical Circuits Laboratory <sup>1</sup>
MATH 83	Technical Calculus <sup>1,2</sup>
or MATH 140	Calculus With Analytic Geometry I
STS 200	Critical Issues in Science, Technology, and Society
or STS/ PHIL 233	Ethics and the Design of Technology
or STS 245	
<i>Baccalaureate Mechanical Engineering Technology (METBC or MET)</i>	
<i>Track</i>	
EET 100	Electric Circuits, Power, and Electronics
EGT 120	Introduction to Graphics and Solid Modeling
EGT 121	Applied Solid Modeling
MET 107	Computer Applications for Technologists
Select 1 credit of First-Year Seminar	
Select 6 credits from the approved supporting course list for this track	

<sup>1</sup> Students pursuing the baccalaureate track must take MATH 22 and MATH 26.

<sup>2</sup> Students who choose to take MATH 81 and MATH 82 must select MATH 83. Students who choose to take MATH 22 and MATH 26 must select MATH 140.

## 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 associate degree 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/associate-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):** 3 credits
- **Writing and Speaking (GWS):** 3 credits

### Knowledge Domains

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

**Note:** Up to six credits of Inter-Domain courses may be used for any Knowledge Domain requirement, but when a course may be used to satisfy more than one requirement, the credits from the course can be counted only once.

### Exploration

- **Any General Education course (including GHW and Inter-Domain):** 3 credits

## University Degree Requirements

### Cultures Requirement

3 credits of United States (US) or International (IL) cultures coursework are required and may satisfy other requirements

### 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 60 degree credits must be earned for an associate degree. The requirements for some programs may exceed 60 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

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.

## Program Educational Objectives

The Associate Mechanical Engineering Technology program prepares students with technical and professional skills for the professional practice. Due to their experience in our program, within few years of graduation, we expect our graduates to have the ability to:

1. Safely practice in the areas of applied design, manufacturing, testing, evaluation, technical sales, or 2D and 3D modeling.
2. Collaborate effectively in project team activities through recognizing the global, societal, and ethical contexts of their work.
3. Work collaboratively in multi-disciplinary teams and assume an increasing level of responsibility and leadership within their organizations.
4. Demonstrate troubleshooting skills by following protocols and using technical literature.

## Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. The Associate Mechanical Engineering Technology program is designed to enable students to:

1. Apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline.

- Design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline.
- Apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- Conduct standard tests, measurements, and experiments and to analyze and interpret the results.
- Function effectively as a member or leader on a technical team.

## Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

### Erie

#### Fredrick Nitterright

Assistant Teaching Professor  
227 Burke Center  
Erie, PA 16563  
814-898-6185  
fxn101@psu.edu

### DuBois

#### Douglas J. Miller

Assistant Teaching Professor and Program Coordinator  
1 College Place  
110 DEF Building  
DuBois, PA 15801  
814-375-4731  
djm290@psu.edu

### York

#### Andrea Giorgioni

Lecturer and Program Coordinator  
4 Romano Administration Building  
York, PA 17403  
717-771-4033  
aug19@psu.edu

## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contains suggested*

*academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

## Mechanical Engineering Technology, A.ENG.T. Ending at Erie Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year		
Fall	Credits Spring	Credits
EGT 120	3 EGT 121	3
ENGL 15 or 30H (GWS) <sup>††</sup>	3 IET 215	2
First Year Seminar	1 MATH 41 (GQ) <sup>*</sup>	3
IET 101 <sup>*</sup>	3 MET 111 <sup>*</sup>	3
MATH 22 (GQ) <sup>*</sup>	3 PHYS 250 (GN) <sup>*</sup>	4
General Education Course	3 General Education Course	3
<b>16</b>		<b>18</b>

Second Year		
Fall	Credits Spring	Credits
IET 216	2 CAS 100 (GWS) <sup>††</sup>	3
MET 213	3 EET 100	3
MET 214	1 MET 210W	3
MET 107	3 PHYS 251 (GN) <sup>†</sup>	4
MET 206 <sup>*</sup>	3 General Education Course	3
MET Track Elective	3	
MET Track Elective	3	
<b>18</b>		<b>16</b>

### Total Credits 68

- \* Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

### University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS) requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

### College Notes:

- Permissible Math substitutions: MATH 26 or MATH 41 instead of MATH 81, MATH 22 instead of MATH 82, and MATH 140 instead of MATH 83.
- 2MET Technical Electives:

- AET 297\* (1-3), BA 242 (2), BA 243 (2), CHEM 101 (3), CHEM 110 (3), CHEM 111 (1), CMPSC 101 (3), EDSGN 210 (2), EET 114 (4), EET 118 (1), EGT 201 (2), EGT 297\* (1-9), IET 105 (2), IET 109 (3), IET 297\* (1-3), IST 110 (3), IST 210 (4), IST 220 (3), IST 250 (3), MATH 83 (4), MATH 140 (4), MATH 141 (4), MATH 210 (3), MET 281 (4), MET 297\* (1-3), MET 306 (3), MET 320 (3), MET 330 (3), MET 341 (3), MGMT 301 (3), PLET 205 (3), STAT 200 (4), SUR 111 (3)
- Upon approval of the College of Engineering, students may be allowed to select technical elective courses from other disciplines. \* Requires prior approval from the Mechanical Engineering Technology Department Chair.

## Career Paths

Graduates from the mechanical engineering technology program work in a variety of industries such as automotive, aeronautical, petroleum, defense, medical, power generation, transportation, and materials.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE MECHANICAL ENGINEERING TECHNOLOGY PROGRAM (<https://career.engr.psu.edu/>)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<https://www.engr.psu.edu/graduate-programs/>)

## Accreditation

The A.ENG.T. in Mechanical Engineering Technology at Penn State Behrend is accredited by the Engineering Technology Accreditation Commission of ABET, <https://www.abet.org>, under the commission's General Criteria and the Mechanical Engineering Technology Program Criteria.

## Professional Licensure/Certification

Many U.S. states and territories require professional licensure/certification to be employed. If you plan to pursue employment in a licensed profession after completing this program, please visit the Professional Licensure/Certification Disclosures by State (<https://www.psu.edu/state-licensure-disclosures/>) interactive map.

## Contact

### Erie

SCHOOL OF ENGINEERING  
242 Jack Burke Research and Economic Development Center  
5101 Jordan Road  
Erie, PA 16563  
814-898-6125  
[engineering@psu.edu](mailto:engineering@psu.edu)

<https://behrend.psu.edu/school-of-engineering> (<https://behrend.psu.edu/school-of-engineering/>)

### DuBois

1 College Place  
DuBois, PA 15801  
814-375-4731  
[djm290@psu.edu](mailto:djm290@psu.edu)

<https://dubois.psu.edu/academics/degrees/engineering/options>  
(<https://dubois.psu.edu/academics/degrees/engineering/options/>)

### York

4 Romano Administration Building  
York, PA 17403  
717-771-4113  
[mfc5@psu.edu](mailto:mfc5@psu.edu)

<https://www.york.psu.edu/academics/associate/mechanical-engineering-technology> (<https://www.york.psu.edu/academics/associate/mechanical-engineering-technology/>)

### University Park

SCHOOL OF ENGINEERING DESIGN AND INNOVATION  
213 Hammond Building  
University Park, PA 16802  
814-865-2952  
[adviser@engr.psu.edu](mailto:adviser@engr.psu.edu)

<https://www.sedi.psu.edu/>