

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

Begin Campus: DuBois, York

End Campus: DuBois, York

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
Prescribed Courses		
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 ¹	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
Additional Courses		
ENGL 15	Rhetoric and Composition	3
	or ENGL 30H Honors Rhetoric and Composition	
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 ^{1,2}	
MATH 81	Technical Mathematics I	
& MATH 82	and Technical Mathematics II ^{1,2}	
MATH 82	Technical Mathematics II ^{1,2}	
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		
General Track		
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		
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 ¹	
CMPET 120	Digital Electronics Laboratory ¹	

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 ¹
EET 118	Electrical Circuits Laboratory ¹
MATH 83	Technical Calculus ^{1,2}
or MATH 140	Calculus With Analytic Geometry I
STS 200	Critical Issues in Science, Technology, and Society
or STS/ PHIL 233	
or STS 245	

Baccalaureate Mechanical Engineering Technology (METBC or MET) Track

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	

¹ Students pursuing the baccalaureate track must take MATH 22 and MATH 26.

² 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.)

- **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 is used to satisfy

more than one requirement, the credits from the course can be counted only once.

Foundations or Knowledge Domains

- **Any General Education course:** 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 (<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.

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.
2. Design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline.

3. Apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4. Conduct standard tests, measurements, and experiments and to analyze and interpret the results.
5. 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/>)

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Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2022-23 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 DuBois 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
EDSGN 100	3 MET 111 ^{*2}	3
IET 101 [*]	3 General Education Course	3
MET 107	3 EET 105	3
MATH 26 ¹	3 EDSGN 110 or EGT 114	2
ENGL 15, 30H, or ESL 15 (GWS) ^{††}	3 MATH 22 (GQ) ^{†1}	3
	CAS 100 (GWS) ^{††}	3
	15	17

Second Year

Fall	Credits Spring	Credits
MET 213 ²	3 MET 210W	3
MET 214	1 PHYS 151 or 251 (GN) ^{†2}	3-4
MET 206 ^{*2}	3 STS 200	3
IET 216	2 General Education Course	3
IET 215	2 Technical Electives ³	3-4
PHYS 150 or 250 (GN) ²	3-4 Technical Electives ³	2-3
Technical Electives ³	2-3	
	16-18	17-20

Total Credits 65-70

* 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

¹ MATH 26 and MATH 22 may be taken concurrently

² Students successfully completing MATH 140 and subsequently MATH 141 may choose to take the EMCH 211, EMCH 212 and EMCH 213 sequence of courses for Statics (MET 111), Dynamics (MET 206), and Strengths/Properties of Materials (MET 213); and similarly, PHYS 211 and PHYS 212 in place of (PHYS 150/PHYS 250) and (PHYS 151/PHYS 251), respectively.

³ A minimum of 6 credits of approved Technical Elective Credits are required in order to reach the minimum major graduation requirement of 65 credits.

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University 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.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Program Notes

Approved Technical Elective Courses include the following courses:

COURSE LIST: AET 296, 297; ACCTG 211; BA 241, 242, 243; CHEM 101, 110, 111, 112; CMPET 117, 120; CMPSC 101, 121, 122, 200, 201; EDSGN 210, 296, 297; EET 100, 114, 118, 275; EGT 201; EMET 100, 350, 430; IET 105, 109, 296, 297, 333; IST 110, 210, 220, 250, 402; MATH 083, 140, 141, 210; ME 300; MET 281, 296, 297, 306, 320, 330, 341; MGMT 301; MIS 204; PLET 205; SCM 200; STAT 200; STS 233; SUR 111.

Additional courses may be acceptable via academic petition, must discuss with your academic adviser and/or program coordinator.

Academic Advising Notes

A student's career/graduate school plans should be considered in developing an individual academic plan. Be sure to consult an adviser in this department when scheduling courses.

Mechanical Engineering Technology, A.ENG.T. Ending at York 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
EDSGN 100	3 MET 111 [*]	3
IET 101 [*]	3 General Education Course	3
EET 105	3 MET 107	3
MATH 26	3 PHYS 150 or 250 (GN)	3-4
ENGL 15, 30H, or ESL 15 (GWS) ^{††}	3 MATH 22 (GQ) ^{††}	3
	15	15-16

Second Year

Fall	Credits Spring	Credits
MET 213	3 MET 210W	3
MET 214	1 IET 215	2
MET 206 [*]	3 IET 216	2
EDSGN 110 or EGT 114	2 CAS 100 (GWS) ^{††}	3
STS 233 or 233	3 Technical Electives ¹	6-7
PHYS 151 or 251 (GN) [†]	3-4 General Education Course	3
	15-16	19-20

Total Credits 64-67

- * 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

¹ 6 credits of Technical Electives are required if student enrolled in either PHYS 250 or PHYS 251, otherwise 7 credits of Technical Electives are required to reach the minimum major requirement of 65 credits.

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University 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.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Program Notes

Technical electives include the following courses:

COURSE LIST: CHEM 101, 110, 111; CMPET 117, 120; CMPSC 101, 121, 201; EET 114, 275; EGT 201; EMET 326, 350, 430; IET 333; IST 402; MATH 140; MGMT 301, MKTG 301, STAT 200

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 (<http://career.engr.psu.edu/>)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<http://www.engr.psu.edu/students/grad-prospective/default.aspx>)

Accreditation

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org (<http://www.abet.org>).

MORE INFORMATION ABOUT ABET ACCREDITATION (<http://www.abet.org>)

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://psu.edu/state-licensure-disclosures/>) interactive map.

Contact

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