

# MECHANICAL ENGINEERING TECHNOLOGY (B.S.)

The Mechanical Engineering Technology (B.S.E.T.M.E.) Program prepares students for diverse and dynamic careers in industry. B.S.E.T.M.E. graduates work in fields that require understanding of the relationships and dependencies among materials, product development, manufacturing systems and processes, or energy production, transformation and transmission (including alternative energy). The program emphasizes hands-on laboratory experiences, and courses stress the practical application of mathematics, science, and engineering to solve real world problems. The B.S.E.T.M.E. program provides students with a well-rounded education focused on the knowledge of existing and new developments in their technical specialty. The program offers students the opportunity to specialize in one of three tracks: design, energy, or manufacturing. B.S.E.T.M.E. graduates work with their minds as well as their hands to solve problems related to their chosen area of specialization.

The Bachelor of Science in Mechanical Engineering Technology (B.S.E.T.M.E.) program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>).

## Admission Requirements

This program is designed to admit students who satisfy the general undergraduate admission (<http://bulletins.wayne.edu/undergraduate/general-information/admission/>) requirements of the University and have an associate degree or equivalent college-level course work in one of the following or related technical areas:

- Aerospace Technology
- Automotive Technology
- Climate Control
- Computer-Aided Design
- Drafting
- Energy Technology
- Fluid Power
- Manufacturing
- Mechanical Design
- Mechanical Technology
- Powerplant

A minimum grade point average (g.p.a.) of 2.50 is required for admission to the program. Students with a g.p.a. of 2.0 to 2.5 may be admitted as pre-engineering technology students, and may transfer into the engineering technology program upon successful completion of MAT 1800 and PHY 2130 with a g.p.a. of 2.50.

Required Background: Any student deficient in any course listed under Lower Division Technical Transfer Credit will be required to remove the deficiency before completing fifteen credits in basic science/mathematics and technical core courses.

A Mathematics Placement Examination is required of entering students who have not already earned advanced credit in pre-calculus.

Candidates for the B.S.E.T.M.E. degree must earn a minimum of 124 credits, which includes University General Education requirements (<http://bulletins.wayne.edu/undergraduate/general-information/general-education/>). University policy allows a maximum of sixty-four semester credits transferred from community colleges to

Wayne State, but students following University-approved articulation agreements with community colleges are able to exceed the maximum of sixty-four credits; a minimum of thirty semester credits must be earned from Wayne State, and at least twenty-four must be in the Division of Engineering Technology courses. All coursework must be completed in accordance with the academic procedures of the University (<http://bulletins.wayne.edu/undergraduate/general-information/academic-regulations/>) and the College (<http://bulletins.wayne.edu/undergraduate/college-engineering/academic-regulations/>) and must conform to Division (<http://bulletins.wayne.edu/undergraduate/college-engineering/engineering-technology-division/#academicregulationstext>) academic standards.

In order to graduate, the University requires a minimum 2.0 g.p.a. in total resident credit, and the Division a minimum 2.0 g.p.a. in total coursework in the area of specialization; as well as satisfaction of all University Undergraduate General Education requirements.

## Program Requirements

The Bachelor of Science in Mechanical Engineering Technology requires a minimum of 124 credits as outlined in the following curriculum.

Code	Title	Credits
<b>Basic Science and Mathematics</b>		
MAT 1800	Elementary Functions (QE)	4
MAT 3430	Applied Differential and Integral Calculus	4
MAT 3450	Applied Calculus and Differential Equations	4
CHM 1020	Survey of General Chemistry (NSI)	4
PHY 2130	Physics for the Life Sciences I (NSI)	4
PHY 2131	Physics for the Life Sciences Laboratory (NSI)	1
PHY 2140	Physics for the Life Sciences II	4
PHY 2141	Physics for the Life Sciences Laboratory	1
<b>MCT Upper Division Core</b>		
ET 3030	Statics	3
ET 3050	Dynamics	3
ET 3850	Reliability and Engineering Statistics	3
ET 3870	Engineering Economic Analysis	3
ET 4999	Senior Project	3
ET 5870	Engineering Project Management	3
MCT 3010	Instrumentation	3
MCT 3100	Mechanics of Materials	3
MCT 3410	Kinematics and Dynamics of Machines	3
MCT 4150	Applied Thermodynamics	3
MCT 4180	Fluid Mechanics	3
MIT 3500	Machine Tool Laboratory	1
MIT 3520	Manufacturing Processes Theory	2
<b>Focus Elective (select one of the following courses)</b>		<b>3</b>
MCT 4400	Design of Machine Elements	
MCT 5210	Energy Sources and Conversion	
MIT 4700	Computer-Aided Design and Manufacturing	
<b>Upper Division Tech Free Elective</b>		<b>3</b>
<b>Lower Division Technical Transfer Credit</b>		
ET 2140	Computer Graphics	3
ET 2160	Computer Applications for Engineering Technology	2
ET 2200	Engineering Materials	3
EET 2000	Electrical Principles	3
<b>Lower Division Tech Electives</b>		<b>21</b>
<b>Communication Requirements</b>		<b>9</b>

(BC) Basic Composition course	
(IC) Intermediate Composition course (ENG 3050 required)	
(OC) Oral Communication course	
<b>Other General Education Requirements</b>	<b>15</b>
(CI) Professional Ethics (PHI 1120 required)	
(SI) Social Inquiry	
(DEI) Diversity, Equity, Inclusion	
(GL) Global Learning Inquiry	
(CIV) Civic Inquiry	
<b>Total Credits</b>	<b>124</b>

- Two Honors Options courses within the engineering technology major, taught by full-time faculty member (Cr. 3-4 each)

## Engineering Technology Honors

Engineering Technology Honors demands a higher level of performance and offers more personal supervision by faculty than the regular curriculum. It is recommended for qualified students who have an interest in research and plan to go on to graduate or professional schools. The Honors Program is open to students seeking the Bachelor of Science in Computer Technology, Electrical/Electronic Engineering Technology, Electromechanical Engineering Technology, and Mechanical Engineering Technology. A cumulative grade point average of at least 3.3 is required for consideration for admission to and continuance in the program. Students are admitted on the recommendation of the Departmental Honors Program advisor. Interested students should contact the advisor and complete the Honors Plan of Work form when declaring their engineering technology major or at the beginning of the senior year. If a student has declared a major in engineering technology prior to entering the Honors Program, a new Declaration of Major must be completed for the Bachelor of Science with Honors.

### Department Honors Requirements (12 credits minimum)

- Students must meet all the ordinary requirements of the Engineering Technology major, and must have a 3.3 GPA overall
- One 4200- level HON seminar (HON 4200-4280) (Cr. 3)
- Thesis-Honors Option with ET 4999 (Cr. 3)
- Two Honors Options courses within the engineering technology major, taught by full-time faculty member (Cr. 3-4 each)

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