

## Michigan Technological University Bachelor of Science Degree Audit

### Major Program: Engineering

Program Code: EBS, Academic Year 2025-26

Minimum credits required for the degree: 122

**Engineering OPTIONS:** Students must choose one of the following options for this degree: EngineeringPlus, Business, Systems, or Individualized. See pages 2 to 5 for option requirements.

#### Major Requirements: 37 to 39 credits

- CH 1150 (3)
- CH 1151 (1)
- EC 3400 (3)
- EE 3010 (3)
- ENG 1101 (3)
  - or ENG 1101T (3) and UN 2013 (1)
- ENG 1102 (3)
- ENG 4525 (3)
- MA 1160 (4) or MA 1161 (5)
- MA 2160 (4)
- MA 2320 (2) or MA 2321 (2)
- MA 3160 (4)
- PH 1100 (1)
- PH 2100 (3)

#### Select one course for 3 credits

- ME 4650 (3)
- MET 4510 (3)
- OSM 4650 (3)

#### Multidisciplinary Senior Design Project: 3 credits

- ENG 4905 (3)

## Essential Education requirements

- Students must complete three main components of Essential Education (First-Year Experience, Distribution or Minor Pathway, and Activities for Well-being and Success) with the credit distributions as shown below. A minimum of 37 credits is required to complete these requirements.
- Up to five Essential Education requirements and the Michigan Tech Seminar may be shared (double-counted) with major requirements. Work with your advisor to determine which major requirements may satisfy Essential Education requirements.
- Some courses are on more than one list, but each course can satisfy only one Essential Education requirement.
- Students may choose between an Essential Education minor or the Distribution Pathway. The list of Essential Education minors can be found [here](#).
- Lists of courses for each requirement can be found on the [Essential Education](#) page.

## First-Year Experience (16 credits)

- Michigan Tech Seminar (1)
- Math (3)
- Natural and Physical Science (3)
- STEM (3)
- Composition (3)
- Foundations of the Human World (3)

## Distribution Pathway (18 credits)

- Communication Intensive (3)
- Intercultural Competency (3)
- Arts and Culture (3)
- STEM (3)
- SHAPE (3)
- Essential Education Experience (3)

## Activities for Well-being and Success (3 credits)

### Free Electives

- Any coursework is allowable, excluding coursework below the 1000-level.
- The number of free elective credits required is dependent on how many additional credits are required beyond Major requirements and Essential Education requirements to reach the total credits required for the degree as indicated on the audit.

## Additional Graduation Requirements

- Satisfy the 2.0 departmental and cumulative Grade Point Average
- Earn 30 upper-level credits at Michigan Tech
- [Apply for Graduation](#)

## Bachelor of Science in Engineering - EngineeringPlus Emphasis: 58 credits

EngineeringPlus is a broad engineering degree with the flexibility to tailor the degree with a minor using credits in the directed, technical, math/science electives, and general education. The degree allows for engineering specialization using credit in the technical electives.

### EngineeringPlus Core Modifications: 10 credits

- CEE 3332 (3) or ENG 3525 (3)
- ENG 3830 (1)
- MA 3710 (3)
- MSE 2100 (3)

### Select: Minimum 4 credits

- ENG 2120 (4) or
  - ME 2110 (3) and ME 2150 (3)

### Select: Minimum 4 credits

- CEE 3200 (4) or
  - ME 2201 (3) and ME 3201 (4)

### EngineeringPlus Technical Emphasis: 18 credits

- CEE 3501 (3) or CEE 3503 (3)
- ENG 4300 (3)

And select 12 engineering credits at the 3000+ level in a coherent plan of study that is approved by the Academic Advisor for the Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering. 6 credits must be 4000+ level.

### EngineeringPlus Directed Electives: 9 credits

Select 9 credits in a coherent plan of study such as partial fulfillment of a university approved minor, (a maximum of 6 credits can count toward the Essential Education minor) or a self-defined program with approval from the BSE Academic Advisor. See advisor for preapproved options.

### EngineeringPlus Mathematics and/or Science Electives: 4 credits

See academic advisor for a list of eligible courses.

### EngineeringPlus Professional Electives: 9 credits

Select 9 credits in a coherent plan of study that is approved by the Academic Advisor for Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering

## Bachelor of Science in Engineering - Business Emphasis: 58 credits

### Core Modifications: 18 credits

Core Modifications: Complete 12 credits

- ENG 2120 (4)
- CEE 3200 (4)
- ENG 3830 (1)
- MA 3710 (3)

Core Modifications: Select one course for 3 credits

- CEE 3101 (3)
- CS 1121 (3)
- ENG 2505 (3)
- GE 2300 (3)
- MSE 2100 (3)

Design Implementation: Select one course for 3 cr.

- CEE 3332 (3)
- ENG 3525 (3)
- ENG 4505 (3)
- GE 3880 (3)
- ME 3600 (3)

### Technical Emphasis: 17 to 18 credits

- ENG 4300 (3)

And, select 14 to 15 engineering credits at the 3000+ level in a coherent plan of study that is approved by the Academic Advisor for the Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering. 6 credits must be 4000+ level.

### Business Electives: 9 credits

Select 3 credits from the following list:

- MGT 3000 (3)
- MKT 3000 (3)
- OSM 3000 (3)

### Business Mathematics and/or Science Electives: 4 to 5 credits

- BUS 2300 (3)

And, select remaining 1 to 2 credits with approval by BSE Academic Advisor.

### Business Electives, continued

Select 6 credits from the following list, or with approval by the BSE Academic Advisor

- ACC 2000 (3)
- ACC 2100 (3)
- ACC 3000 (3)
- ACC 3500 (3)
- BUS 1100 (3)
- BUS 2200 (3)
- BUS 2300 (3)
- EC 2001 (3)
- EC 3100 (3)
- FIN 2400 (3)
- FIN 4000 (3)
- FIN 4300 (3)
- HU 3120 (3)
- MIS 2000 (3)
- MGT 2000 (3)
- MGT 3000 (3)
- MGT 3800 (3)
- MGT 4600 (3)
- MKT 3000 (3)
- MKG 3200 (3)
- MKT 4100 (3)
- OSM 3000 (3)
- OSM 3600 (3)
- MIS 3100 (3)
- MIS 4200 (3)
- PSY 4340 (3)
- SS 3650 (3) or MGT 3650 (3)

### Business Directed Electives: 9 credits

Select 9 credits in a coherent plan of study such as partial fulfillment of a university approved minor, (a maximum of 6 credits can count toward the Essential Education minor), or a self-defined program with approval from the BSE Academic Advisor

## Bachelor of Science in Engineering - Systems Emphasis: 58 credits

### Core Modifications: 17 credits

- CEE 3332 (3)
- ENG 2120 (4)
- ENG 2505 (3)
- CEE 3200 (4)
- MA 3710 (3) or CEE 3710 (3)

### Systems Technical Electives: 17 credits

- CEE 3501 (3) or CEE 3503 (3)
- ENG 1505 (1)
- ENG 3505 (1)
- ENG 4300 (3)
- ENG 4505 (3)
- ENG 4515 (3)
- MSE 2100 (3)

### Business Core: 9 credits

- ACC 2000 (3)
- OSM 3000 (3)
- MKT 3000 (3)

### Systems Mathematics and/or Science Electives: 6 credits minimum

- BL 1100 (3)
- FW 4260 (3) or FW 3410 (3)

### Systems Pre-Approved Directed Electives: 9 credits

Select one of the following options

#### [Option 1 - Enterprise: complete 9 credits](#)

- ENT 3950 (1)
- ENT 3960 (1)
- ENT 4950 (2)
- ENT 4960 (2)
- ENT 2961 (2)
- ENT 2962 (1)
- ENT 3959 (1)
- ENT 3967 (1)
- ENT 3982 (1)

#### [Option 2: Coherent Plan](#)

Select 9 credits in a coherent plan of study as partial fulfillment of a university minor (a maximum of 6 credits can count toward the Essential Education minor), or a self-defined program with approval by the BSE Academic Advisor.

## Bachelor of Science in Engineering - Individualized Emphasis: 58 Credits

A coherent plan of study that is approved by the Academic Advisor for the Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering.

### Required Core Course: 4 credits

- ENG 3830 (1)
- MA 3710 (3)

### Core Modifications: Select one course for 3 credits

- CEE 3101 (3)
- CS 1121 (3)
- ENG 2505 (3)
- GE 2300 (3)
- MSE 2100 (3)

### Select Minimum 4 credits

- ENG 2120 (4) or
  - ME 2110 (3) and ME 2510 (3)

### Select Minimum 4 credits

- CEE 3200 (4) or
  - ME 2201 (3) and ME 3201 (4)

### Design Implementation: Select one course for 3 credits

- CEE 3332 (3)
- ENG 3525 (3)
- ENG 4505 (3)
- GE 3880 (3)
- ME 3600 (3)

### Technical Emphasis: 15 to 16 credits

Select 15 to 16 engineering credits at the 3000+ level in a coherent plan of study that is approved by the Academic Advisor for the Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering. 9 credits must be 4000+ level.

### Individualized Directed Electives: 9 credits

Select 9 credits in a coherent plan of such as a partial fulfillment of a university approved minor, (a maximum of 6 credits can count toward the Essential Education minor), or a self-defined program with approval from the BSE Academic Advisor.

### Individualized Mathematics and/or Science Electives: 4 to 5 credits

See academic advisor for a list of eligible courses

### Individualized Professional Electives: 11 credits

Select 11 credits in a coherent plan of study that is approved by the Academic Advisor for Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals, and Academic Dean for the College of Engineering.