Michigan Technological University Bachelor of Science Degree Audit
Major Program: Engineering
Program Code: EBS, Academic Year 2024-2025
Total credits required for the degree: 125

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)
- 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

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

Multidisciplinary Senior Design Project: 3 credits

- ENG 4905 (3)

Free Electives: 0 credits

Free elective credits may be required depending on the number of credits completed in major requirements. Any coursework is allowable, excluding co-curricular and coursework below the 1000- level.

General Education Core, Humanities, Fine Arts, and Social Science (HASS) Requirements: 24 cr.

Courses used to complete Core and HASS requirements may not be used to complete other degree requirements. Students must complete 12 credits of Core coursework and 12 credits of Humanities, Fine Arts, and Social Science (HASS) coursework. Repeatable courses may not be repeated for general education credit. Core and HASS courses can be found on the General Education page.

Core: 12 credit

- UN 1015 (3)
- UN 1025 or an upper level modern language (3)
- Critical and Creative Thinking (3)
- Social Responsibility and Ethical Reasoning (3)

HASS: 12 credits, six of the 12 credits must be at the 3000- or 4000- level

- Communication/Composition (minimum 3 credits)
- Humanities and Fine Arts (minimum 3 credits)
- Social and Behavioral Sciences (minimum 3 credits)
- Any course from the General Education Core, HASS, or Restricted HASS course list (0 to 3 credits)

Co-curricular Activities: 3 credits

Required for graduation, but not included in the GPA calculation or in the overall credits required for the degree. Only courses on the co-curricular course list are eligible. Half (0.5) credit courses may be repeated to a maximum of one time for co-curricular credit. Find eligible courses on the General Education page.

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)
- ENG 3830 (1)
- MA 3710 (3)
- MSE 2100 (3)

Select: Minimum 4 credits

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

Select: Minimum 4 credits

- CEE 3200 (4) or
    - MEEM 2201 (3) and
    - MEEM 3201 (4) **or** MEEM3210 (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, 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)
- GE 3880 (3)
- MEEM 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 Electives, continued

Select 6 credits from the following list, or 3 credits approved by the BSE Academic Advisor

- EC 3100 (3)
- HU 3120 (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, or a self-defined program with approval from the BSE Academic Advisor

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.

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, 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
    - MEEM 2110 (3) and MEEM 2510 (3)

Select Minimum 4 credits

- CEE 3200 (4) or
    - MEEM 2201 (3) and
    - MEEM 3201 (4) or MEEM3210 (4)

Design Implementation: Select one course for 3 credits

- CEE 3332 (3)
- GE 3880 (3)
- MEEM 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, 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.