B.S. Mechanical Engineering Degree (Prior to *Fall 2025*)

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

First Year

Fall

Course	Prerequisites	Credit
CH1150 University Chemistry 1	CH1151 *(Corequisite)*	3
CH1151 University Chemistry Lab 1	CH1150 *(Corequisite)*	1
PH1100 Physics 1 Lab	MA1160 *(Concurrent)*	1
MA1160 Calculus with Technology 1		4
ENG1101 Engineering Analysis & Problem Solving	MA1160 *(Concurrent)*	3
UN1015 Composition		3
Total		**15**

Spring

Course	Prerequisites	Credit
MSE2100 Material Science	CH1150 & CH1151	3
PH2100 University Physics 1	MA1160, PH1100 *(Concurrent)*	3
MA 2160 Calculus with Technology 2	MA1160	4
MA2320 Linear Algebra	MA1160	2
ENG1102 Engineering Modeling & Design	MA1160 *(Concurrent)*, ENG1101	3
UN1025 Global Issues		3
Total		**18**

Second Year

Fall

Course	Prerequisites	Credit
PH1200 Physics 2 Lab	PH1100	1
ME2201 Intro Thermodynamics	CH1150 & CH1151, MA2160 (C or better)	3
MA3160 Multivariable Calculus 3	MA2160	4
ME2110 Statics	MA2160 (C or better)	3
ME2901 Mechanical and Aerospace Engineering Practice 1	UN1015, ENG1102, ME2110 (*Concurrent*)	2
General Education Core – Critical & Creative Thinking		3
Total		**16**

Spring

Course	Prerequisites	Credit
PH2200 University Physics 2	MA2160, PH2100, PH1200 (*Concurrent*)	3
MA3520 Differential Equations	MA2160, MA2320	2
ME2700 Dynamics	PH2100, ME2110	3
ME2150 Mechanics of Materials	ME2110	3
ME2911 Mechanical & Aerospace Engineering Practice 2	ME2110, ME2901, ME2201 (*Concurrent*)	3
General Education Core – Social Responsibility & Ethical Reasoning		3
Total		**17**

Third Year

Fall

Course	Prerequisites	Credit
ME3201 Intro Fluid Mechanics & Heat Transfer	MA3160, ME2201, ME2911	4
EC3400 Economic Decision Analysis	UN1015, UN1025	3
MA3710 Statistics	MA2160	3
ME3400 Machine Design & Analysis	MSE2100, ME2150, ME2700	3
ME3901 Mechanical Engineering Practice 3	ME2150, ME2700, ME2911 (*Concurrent*)	2
HASS – Communication/Composition		3
Total		**18**

Spring

Course	Prerequisites	Credit
ME3750 Dynamic Systems	MA3520, ME2700	4
ME3600 Intro to Manufacturing	MSE2100, ME2150	3
EE3010 Circuits & Instrumentation	PH2200	3
ME3911 Mechanical Engineering Practice 4	ME2911, ME3901 (*Concurrent*)	3
HASS – Humanities & Fine Arts		3
Total		**16**

Fourth Year

Fall

Course	Prerequisites	Credit
Free Elective		3
Technical Elective		3
Technical Elective		3
ME4901 Senior Design 1	ME3201, ME3400, ME3600 (*Concurrent*), ME3750, ME3901, ME3911, MA3710 (*Concurrent*), EE3010 (*Concurrent*)	2
HASS – Social & Behavioral Science		3
Total		**14**

Spring

Course	Prerequisites	Credit
Technical Elective		3
Technical Elective		3
Technical Elective		3
ME4911 Senior Design 2	EE3010, MA3710, ME3600, ME4901	2
HASS – Any Course		3
Total		**14**

Grand Total = 128 Credits

Students must also complete 3 full units (or 6 half units) of Co-Curricular courses

1. ***General Education Requirements:*** 24 total credits. Required courses are UN1015-Composition (3 credits), UN1025-Global Issues (3 credits), a Critical & Creative Thinking course (3 credits), a Social Responsibility & Ethical Reasoning course (3 credits), and 12 HASS (Humanities, Arts, & Social Sciences) credits. The 12 total credits of HASS must include a minimum of 3 credits each in Communication/ Composition, Humanities/Fine Arts and Social & Behavioral Science. Approved course lists are available in the ME Advising Center and are linked on the ME Advising web page. **6 credits must be 3000 level or higher (does not include EC3400). EC3400 is not a HASS course for ME students but is still required for the BSME.** No more than 3 credits may be used from the HASS Restricted List. All 3000 level or higher HASS courses require UN1015 and UN1025 as non-concurrent prerequisites.
2. ***UN1025 Global Issues Language Option:*** 3 credits of 3000-level or higher modern language may be substituted directly for UN1025. A list of approved courses is located on the Modern Language webpage. **Any students with previous language experience in Spanish, French, or German must take the Modern Language Online Placement Test.** Instructions are linked on the MAE Advising web page.
3. ***Technical electives***: **At least 6 credits of tech electives must be MEEM, ME or AE 4000+ course numbers (exceptions below).** Otherwise, any 4000+ level courses in the College of Engineering except MET courses are acceptable for ME technical electives; **with the exception of MET4377.** These prefixes – AE, BE, CM, CEE, EE, ENG, GE, MEEM, MSE - may be used by BSME students for technical elective credits (if allowed to enroll in the course by the offering department) with the following exceptions: BE4000, BE4900, BE4901, BE4910, BE4930, BE5000, BE5900, BE5930, CEE4510, CEE4900, CEE4905, CEE4910, CEE4915, CEE4916, CEE4920, CEE4930, CEE4990, CEE5190, CEE5250, CEE5390, CEE5490, CEE5560, CEE5561, CEE5562, CEE5563, CEE5590, CEE5690, CEE5890, CEE5920, CEE5930, CEE5990, CEE5991, CEE5992, CEE5994, CEE5997, CEE5998, CEE5999, CM4000, CM4020, CM4040, CM4060, CM4080, CM4855, CM4860, CM4861, CM4900, CM4910, CM4990, CM5900, CM5950, CM5990, EE4000, EE4800, EE4805, EE4870, EE4901, EE4910, EE5290, EE5805, EE5900, EE5990, EE5991, EE5992, EE5994, ENG4060, ENG4070, ENG4900, ENG4905, ENG4910, ENG4990, ENG5060, ENG5100, ENG5200, ENG5300, ENG5400, ENG5990, ENG5998, GE4000, GE4900, GE4910, GE4916, GE4930, GE4931, GE4933, GE4934, GE4961, GE4962, GE4970, GE5187, GE5930, GE5940, GE5950, GE5960, GE5970, GE5994, GE5995, GE5998, GE5999, MEEM4990, MEEM4901, MEEM4911, MEEM4999, MEEM5010, MEEM5990, MEEM5994, MEEM5995, MEEM5999, MEEM6000, MSE4130, MSE4131, MSE4140, MSE4141, MSE4970, MSE4990, MSE5100, MSE5900, MSE5970, and MSE5990 or any other research/special topics/seminar/senior design/etc. credits (courses without a specific course description and/or syllabus). Undergraduate students cannot typically enroll in 6000-level courses. Special topics courses (4990, 5990, etc.) may be approved on an individual section/semester basis if a student/faculty member submits or creates a course syllabus for evaluation. OSM 4300 is also acceptable.
4. ***Prerequisite*** courses are noted by a plain arrow. The prerequisite course must be successfully completed ***PRIOR*** to taking the subsequent course.
   Concurrent Prerequisites ~ **(C)** ~ may be taken at the same time, although it is not necessary if the prerequisite course is completed first.
   Required Corequisite courses that ***MUST*** be taken together in the same semester.
5. ***Engineering Fundamentals:*** ENG1002 or passing the online spatial visualization test is required for ENG1101 as a concurrent pre-requisite. ENG1002 or passing the spatial visualization test is also a pre-requisite (non-concurrent) for ENG1102. MA1160/1161 is a concurrent pre-requisite for ENG1101 and ENG1102. ENG1102 project content varies by section number.
6. ***Math:*** Students are placed into an initial math course based on ACT/SAT math score, the online ALEKS assessment, or a math placement exam score for credit (AP, IB, CLEP). MA1160 (4 credits) or MA1161 (5 credits) satisfy the Calculus 1 requirement. MA2320 and MA3520 are offered as full semester courses for students taking these courses in separate semesters. The Math department also teaches MA2321 as an accelerated course (equivalent to MA2320) in the first half of a given semester and MA3521 as an accelerated course (equivalent to MA3520) in the second half of the same semester (registration must be for the same section number of both MA2321 and MA3521 in that semester). MA2320, MA2321, and MA2330 are all equivalent and are approved prerequisites for MA3520 or MA3521. MA3530 and 3560 are also equivalent to MA3520/3521. MA2710, 2720 and 3715 are all acceptable in place of MA3710.
7. ***A grade of 'C' or better in MA2160 is required as a pre-requisite for MEEM2110 and MEEM2201.***
8. For students earning a 'CD' or 'D' grade in MA1160/1161, PH2110 (University Physics Workshop 1) is a required corequisite for PH2100.
9. ***Free electives***: Any credits that are 1000-level or above, not on the *Activities for Well-being and Success* list, and not non-repeatable duplicated or equivalent courses. UN3002, UN3003, etc. (Cooperative Education credits) can be used as free electives in the BSME curriculum.
10. ***Co-curricular Activities***: Mainly physical education courses with some additions. Three credits will be included as earned hours and may be used to determine full-time enrollment status. The Co-curricular list is available in the MAE Advising Center and linked on the MAE Advising web page.
11. ***Transfer, Advanced Placement, or Study Abroad courses*** are not included in credit hours used for GPA calculations. Transfer credit is awarded for Michigan Tech equivalent course work only if a grade of 'C' or better (2.00/4.00) or equivalent is earned at a transfer institution. Study abroad credit will be awarded based on passing a course according to equivalent international standards. Advanced Placement credit is awarded according to published AP Exam score standards (also IB and CLEP).
12. MEEM and ME courses with the same course number are equivalent.

This flowchart is not an official list of degree requirements. Adjustments may be required due to curriculum changes.
MAE Advising web page: https://www.mtu.edu/mechanical-aerospace/undergraduate/advising/