

## B.S. Mechanical Engineering Technology Degree – Academic Year 2024-25

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

*Please use the University's [official degree audit](#).*

### First Year

Fall

COURSE	Credit
CH 1150 University Chemistry I <b>-AND-</b>	3
CH 1151 University Chemistry Lab I	1
ENG 1101 Engineering Analysis and Problem Solving	3
MA 1032 Precalculus	4
UN 1015 Composition	3
HASS Elective <i>(Course from Any List)</i>	3
<b>TOTAL</b>	<b>17</b>
<b>CO-CURR – ½ UNIT</b>	

Spring

COURSE	Credit
MA 1160 Calculus with Technology I <b>-OR-</b>	4
MA 1161 Calculus Plus with Technology I	5
MET 2400 Practical Applications in Parametric Modeling	3
MSE 2100 Introduction to Materials Science & Engineering	3
PH 1140 Applied College Physics I <b>-AND-</b>	3
PH 1141 Applied College Physics I Laboratory	1
UN 1025 Global Issues <b>-OR-</b>	3
Modern Language Option	
<b>TOTAL</b>	<b>17-18</b>
<b>CO-CURR – ½ UNIT</b>	

### Second Year

Fall

COURSE	Credit
MA 2160 Calculus with Technology II	4
MET 2110 Applied Statics	3
MET 2153 Machine Tool Fundamentals and Applications	2
PH 1200 Physics by Inquiry II <b>-AND-</b>	1
PH 1240 Applied College Physics II	3
Critical and Creative Thinking	3
<b>TOTAL</b>	<b>16</b>

Spring

COURSE	Credit
EET 1411 Basic Electronics	4
MET 2130 Applied Dynamics	4
MET 2150 Applied Strength of Materials	3
Social Responsibility & Ethical Reasoning	3
<b>TOTAL</b>	<b>14</b>
<b>CO-CURR – ½ UNIT</b>	

### Third Year

Fall

COURSE	Credit
EET 2233 Electrical Machinery	4
HU 3120 Technical and Professional Communication	3
MET 3242 Machine Design I	3
MET 3400 Applied Fluid Mechanics	3
MET 3500 Manufacturing Processes	4
<b>TOTAL</b>	<b>17</b>
<b>CO-CURR – ½ UNIT</b>	

Spring

COURSE	Credit
EET 3131 Sensors and Instrumentation	3
MA 2720 Statistical Methods <b>-OR-</b>	4
MA 3710 Engineering Statistics	3
MET 3451 Machine Design II	3
MET 3700 Applied Thermodynamics	3
MET 4460 Product Design and Development	2
Humanities and Fine Arts	3
<b>TOTAL</b>	<b>17-18</b>

### Fourth Year

Fall

COURSE	Credit
EC 3400 Economic Decision Analysis	3
MET 4210 Applied Quality Techniques	3
MET 4300 Applied Heat Transfer	3
MET 4575 Senior Project I <b>-OR-</b>	2
ENT 4950 Enterprise Project Work V Capstone	2
Technical Elective	3
<b>TOTAL</b>	<b>14</b>
<b>CO-CURR – ½ UNIT</b>	

Spring

COURSE	Credit
MET 4360 Thermal-Fluids Laboratory	1
MET4675 Senior Project II <b>-OR-</b>	2
ENT 4960 Enterprise Project Work VI Capstone	2
MET 4999 Professional Practice Seminar	1
Technical Elective	3
Technical Elective	1-3
Communication/Composition	3
Social and Behavioral Sciences	3
<b>TOTAL</b>	<b>14-16</b>
<b>CO-CURR – ½ UNIT</b>	

**GRAND TOTAL = 128 Credits**

## Technical Electives (Choose 7-9 Credits)

### Computer-Aided Engineering Focus

COURSE	Credit
MET 4355 Industrial Systems Simulation [spring]	3
MET 4550 Computer Aided Manufacturing [spring]	3
MET 4660 CAE and FEA Methods [fall]	3

### Fluids and Power Systems Focus

COURSE	Credit
MET 4377 Applied Fluid Power [fall]	3
MET 4378 Advanced Hydraulics: Electro-hydraulic Components and Systems [spring]	3
MET 4390 Internal Combustion Engines [fall]	3

### Manufacturing Focus

COURSE	Credit
MET 4510 Lean Manufacturing and Production Planning [spring]	3
MET 4585 Facilities Layout and Safety Design [fall]	3
MET 4780 Advanced Manufacturing [spring]	3

### Other Technical Electives

COURSE	Credit
EET 3373 Introduction to Programmable Controllers [fall, summer]	3
EET 4311 Control Systems [fall, summer]	3
ENT XXXX Enterprise Project Work ( <i>except 3959, 3967, 4950, 4960</i> )	var 1-2
MET 4996 Special Topics in Mechanical Engineering Technology [on demand]	var 1-3
MET 4997 Independent Study in Mechanical Engineering Technology [on demand]	var 1-3
MET 4998 Undergraduate Research in Mechanical Engineering Technology [on demand]	var 1-6
OSM 4350 Advanced Project Management [spring]	3
UN 3002 Undergraduate Cooperative Education I [fall, spring, summer] – <i>may be repeated</i>	var 1-2

## NOTES

1. **General Education Requirements:** 24 total credits. Required courses: UN 1015-Composition (3 credits); UN1025-Global Issues (3 credits); Critical and Creative Thinking (3 credits); Social Responsibility & Ethical Reasoning (3 credits); and 12 HASS credits. Approved lists are available in EERC 426 and linked on the Department of Manufacturing and Mechanical Engineering Technology's "Advising" web page.
2. **UN 1025 Global Issues Language Option:** 3 credits of 3000-level or higher modern language may be substituted directly for UN 1025. **Any students with previous language experience in Spanish, French, German, or Mandarin must take the Modern Language Online Placement Test.**
3. **HASS (Humanities, Arts, & Social Sciences):** 12 total credits that include a minimum of 3 credits each in: Communication/Composition, Humanities/Fine Arts, and Social & Behavioral Sciences. Approved lists are available in EERC 426 and are linked on the Department of Manufacturing and Mechanical Engineering Technology's "Advising" web page. **Six (6) credits must be 3000 level or higher (does not include HU 3120). HU 3120 is not a HASS course for MET students but still is a degree requirement.** No more than 3 credits may be used from the HASS Restricted List. All 3000-level or higher HASS courses require UN 1015 and UN 1025 as prerequisites.
4. **Math:** Math placement is based on ACT/SAT math score. Students have the option to take the ALEKS placement test in place of the ACT/SAT placement. **Note:** MA 1120 (4 credits) fulfills the requirement for MA 1032; MA 1121 (4 credits) fulfills the requirement for MA 1160/1161.
5. **Engineering Fundamentals:** The Spatial Visualization test is required to enroll in ENG 1101. ENG 1003 is required concurrently with ENG 1101 if the Spatial Visualization test is not passed. **MA 1032 or MA 1160 or MA 1161** is a concurrent pre-requisite for ENG 1101.
6. **Free Electives:** Any Michigan Tech course(s) or approved transfer course(s) that are 1000-level or above and are not duplicated or equivalent courses.
7. **Co-curricular Activities:** Mainly physical education courses with some additions. Three units (or six half units) are required for graduation. These units will be included as earned hours and may be used to determine full-time enrollment status. These are in addition to the total credits required for the degree. A co-curricular list is available in EERC 426 and is linked on the Department of Manufacturing and Mechanical Engineering Technology's "Advising" web page. These units are graded pass/fail and are not included in credit hours used for calculation of any grade point averages (cumulative or departmental).
8. **Pre-requisite** courses are noted by a plain arrow. The pre-requisite course must be successfully completed prior to taking the subsequent course.
9. **Concurrent Pre-requisites** may be taken at the same time, although it is not necessary to take these courses together if the pre-requisite course is completed first.
10. **Co-requisite** courses are courses that **must** be taken together in the same semester.
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 by International Programs and Services based on passing a course according to equivalent international standards. Advanced Placement credit is awarded according to published AP Exam score standards.