Bachelor of Science - Mechanical Engineering Technology 128 **Total Credits** Academic Year 2024-25 – Recommended Course Sequence **Technical Electives** (Prerequisite/s) Semester Semester 3 Semester 5 Semester 7 Semester 8 Semester 2 Semester 4 Semester 6 (Choose 7-9 credits) **SPRING FALL** SPRING **FALL SPRING SPRING FALL** FALL Computer-Aided Eng. Focus: 14-16 Cr 17 Cr 17-18 Cr 16 Cr 14 Cr 17 Cr 17-18 Cr 14 Cr MET 4355 - 3 [s] Industrial Systems Simulation MET 4550 - 3 (MET 2153 & MA 1032 -or- MA 2160 UN 1015 & UN 1025 MET 2400) [s] MET 4675* Computer Aided Manufacturing Senior MET 4660 - 3 **UN 1025** Project II EC 3400 MA 2720 (MET 2400 & MET 3242 (C)) [f] Critical Social **EET 2233** Global Issues (2) [f,s]**UN 1015** Economic Statistical CAE and FEA Methods and Creative Responsibility & Electrical (3) [f,s,su] or- ENT 4960* Decision Composition Methods **Thinking** Ethical Reasoning Machinery -or- Modern Fluids & Power Systems Focus: (3) [f,s,su] Analysis (2) [f,s,su] (4) [f,s,su] \ (3) *(3) *MET 4377 - 3 (MET 3400) [f] (4) [f] Language (3) [f,s,su] or- MA 3710 Applied Fluid Power Option * Eng. Statistics MA 1032 -or- MA 1160 (C) MET 4378 - 3 (MET 4377) [s] MET 4999 -or- MA 1161 (C) (3) [f,s,su] Advanced Hydraulics: **ENG 1101*** Professional **MET 2400** Electro-hydraulic Components MET 2153 Practice Eng. Analysis & Practical and Systems Machine Tool **EET 3131 EET 1411** MET 3500 **MET 4210** Seminar Problem Solving **Applications** MET 4390 - 3 (MET 4300 or **Fundamentals** Sensors and Applied Quality Basic Manufacturing (1) [f,s] (3) [f,s,su] in Parametric (MET 3700 & MET 4360 (C))) [f] & Applications Instrumentation Electronics **Processes** Techniques Internal Combustion Engines *Pre-rea (C): Modeling (2) [f,s](4) [f,s,su] (3)[s](4) [f] (3) [f]MA 1032 -or-(3) [f,s]Manufacturing Focus: Technical MA 1160 -or-MET 4510 - 3 [s] Elective MA 1161 Lean Manufacturing and **MET 3451** (3) Production Planning MET 4575* Machine Senior Design II MET 4585 - 3 [f] CH 1150 & Project I Facilities Layout & Safety Design MSE 2100 (3)[s]**MET 3242** MET 2110 **MET 2130** CH 1151 (2) [f,s]MET 4780 - 3 (MET 3500) [s] Intro. to С University Applied Applied Machine lc Technical Advanced Manufacturing or- ENT 4950° Materials **Dvnamics** Design I Elective Chemistry I Statics (2) [f,s,su] Science & Eng Other Technical Electives: (3) [f] (1-3)(3) [f,s](4) [f,s] & Lab I **MET 4460** (3) [f,s,su] EET 3373 - 3 (EET 1411) [f,su] (4) [f,s,su] Product Introduction to Prog. Controllers Design and EET 4311 - 3 (EET 1411) & MA 1160 lc **MET 4360** Development (MET 2110 & MET 2130) [f.su] Calculus with MET 4300 Thermal-(2) [f,s]Control Systems Technology I Applied Fluids Lab MA 2160 ENT XXXX - variable 1-2 (4) [f] **MET 3400** Heat Transfer MA 1032 Calculus (1) [f,s]Enterprise Project Work -or- MA 1161 Applied Fluid **MET 3700** (3) [f] Precalculus with (except 3959, 3967, 4950, 4960) Calculus Plus Mechanics Applied (4) [f,s,su] Technology II MET 4996 - 1-3 ** w/ Technology I (3) [f]Thermodynamics Social (4) [f,s,su] Special Topics in Mechanical (5) [f,s,su] (3)[s]and Behavioral **Engineering Technology Sciences** MET 4997 - 1-3 ** MET_2110 UN 1015 & UN 1025 (3) *Independent Study in Mechanical **Engineering Technology** PH 1140 **HASS Elective** PH 1200 **MET 2150 HU 3120** & PH 1141 MET 4998 - 1-6 ** (Course from & PH 1240 Applied Applied College Technical and **Humanities** Technical Undergraduate Research in Communication Any List) Applied College Strenath of Physics I & Lab Elective Mechanical Engineering Professional and Fine Arts /Composition (3) *Physics II & Lab Materials (4) [s](3) *Technology Communication (3) *(3) *(4) [f] (3) [f,s]OSM 4350 - 3 (OSM 3200 or (3) [f,s,su] ENG 4300 or OSM 4300) [s] CO-CURR Advanced Project Management CO-CURR 1/2 UNIT ' ½ UNIT CO-CURR CO-CURR CO-CURR CO-CURR UN 3002 - 1-2, may be repeated ½ UNIT ½ UNIT ½ UNIT ½ UNIT [f,s,su] Undergraduate Cooperative *Spatial Visualization Test required to enroll in ENG 1101

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Semester Offered

Prerequisite

(Course must be completed

prior to enrollment)

Concurrent Prerequisite

(A prerequisite course that may be

taken concurrently

Course Credits

* See Notes

on Back

** On Demand

Education I

March 2024

- General Education Requirements: 24 total credits. Required courses: UN 1015-Composition (3 credits); UN 1025-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. https://www.mtu.edu/registrar/pdfs/core-and-hass-list-24-25.pdf
- 2. <u>UN 1025 Global Issues Language Option</u>: 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. <u>HASS (Humanities, Arts, & Social Sciences)</u>: 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. https://www.mtu.edu/registrar/pdfs/core-and-hass-list-24-25.pdf 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. <u>Math</u>: 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. For more information, see: https://www.mtu.edu/math/undergraduate/placement/ Note: MA 1120 (4 credits) fulfills the requirement for MA 1032; MA 1121 (4 credits) fulfills the requirement for MA 1160/1161.
- 5. <u>Engineering Fundamentals</u>: 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 MA1161** 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. <u>Co-curricular Activities</u>: 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). https://www.mtu.edu/registrar/pdfs/co-curricular-courses-24-25.pdf
- 8. <u>Pre-requisite</u> courses are noted by a plain arrow. The pre-requisite course must be successfully completed **prior** to taking the subsequent course.
- 9. <u>Concurrent Pre-requisites</u> are noted by a 'C' by the arrow and 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. <u>Co-requisite</u> courses are courses that <u>must</u> be taken together in the same semester.
- 11. <u>Transfer, Advanced Placement, or Study Abroad Courses</u> 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.

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

Advising web page: https://www.mtu.edu/mmet/undergraduate/advising/