## **Bachelor of Science - Mechanical Engineering Technology** 128 **Total Credits** Academic Year 2023-24 – Recommended Course Sequence **Technical Electives** (Prerequisite/s) (Choose 7-9 credits) Semester Semester 3 Semester 5 Semester 7 Semester 8 Semester 2 Semester 4 Semester 6 Computer-Aided Eng. Focus: **SPRING FALL** SPRING **FALL SPRING SPRING FALL** FALL MET 4355 - 3 [s] 14-16 Cr 17 Cr 17-18 Cr 16 Cr 14 Cr 17 Cr 17-18 Cr 14 Cr Industrial Systems Simulation MET 4550 - 3 (MET 2153 & MET 2400) [s] MA 1032 -or- MA 2160 UN 1015 & UN 1025 MET 4675\* Computer Aided Manufacturing Senior UN 1025 MET 4660 - 3 Project II EC 3400 MA 2720 Critical Social **EET 2233** (MET 2400 & MET 3242 (C)) [f] Global Issues (2) [f,s]**UN 1015** Economic Statistical and Creative Responsibility & CAE and FEA Methods Electrical or- ENT 4960\* (3) [f,s,su] Decision Composition Methods **Thinking** Ethical Reasoning Machinery -or- Modern (3) [f,s,su] Analysis (2) [f,s,su] (4) [f,s,su] **\** Fluids & Power Systems Focus: (3) \*(3) \*(4) [f] Language (3) [f,s,su] MET 4350 - 3 [s] or- MA 3710 Option ' Principles and Application of Eng. Statistics Heating, Ventilating, and MET 4999 (3) [f,s,su] Air Conditioning Systems Professional **ENG 1101\* MET 2400 MET 2153** Practice Eng. Analysis & Practical Machine Tool MET 4377 - 3 (MET 3400) [s] **EET 3131 MET 4210 EET 1411** MET 3500 Seminar Problem Solving Applied Fluid Power **Applications Fundamentals** Sensors and Applied Quality Basic Manufacturing (1) [f,s] (3) [f,s,su] in Parametric & Applications Instrumentation Electronics Processes Techniques MET 4390 - 3 (MET 4300 or \*Pre-req (C): Modelina (2) [f,s](MET 3700 & MET 4360 (C))) [f] (4) [f,s,su] (3)[s](3)[f](4) [f] MA 1032 -or-(3)[f,s]Internal Combustion Engines **Technical** MA 1160-or-Elective MA 1161 Manufacturing Focus: **MET 3451** MET 4575\* (3) MET 4510 - 3 [s] Machine Lean Manufacturing and Senior Design II Production Planning CH 1150 & Project I MSE 2100 (3)[s]**MET 2130 MET 3242** MET 2110 CH 1151 (2) [f,s]Intro. to MET 4585 - 3 [f] С **Applied** University Applied Machine lc **Technical** or- ENT 4950° Facilities Layout & Safety Design Materials Design I Elective Chemistry I **Statics Dvnamics** (2) [f,s,su] Science & Eng (1-3)(3)[f](3) [f,s](4) [f,s]& Lab I **MET 4460** MET 4780 - 3 (MET 3500) [s] (3) [f,s,su] Advanced Manufacturing (4) [f,s,su] Product Design and MA 1160 Other Technical Electives: **MET 4360** Development **EET 3373** - 3 (EET 1411) [f,su] Calculus with **MET 4300** Thermal-(2) [f,s]Introduction to Prog. Controllers Technology I Applied Fluids Lab MA 2160 (4) [f] **MET 3400** Heat Transfer MA 1032 Calculus (1) [f,s]ENT XXXX - variable 1-2 -or- MA 1161 Applied Fluid MET 3700 Enterprise Project Work (3) [f] Precalculus with Calculus Plus Mechanics (except 3959, 3967, 4950, 4960) Applied Technology II (4) [f,s,su] w/ Technology I (3)[f]Thermodynamics Social (4) [f,s,su] MET 4996 - 1-3 \*\* (5) [f,s,su] (3)[s]and Behavioral Special Topics in Mechanical **Sciences Engineering Technology MET 2110** UN 1015 & UN 1025 (3) \*MET4997 - 1-3 \*\* PH 1140 HASS Elective Independent Study in Mechanical PH 1200 **MET 2150** HU 3120 & PH 1141 **Engineering Technology** (Course from & PH 1240 Applied Technical Applied College Technical and **Humanities** Communication Any List)

**Professional** 

(3) [f,s,su]

CO-CURR

1/2 UNIT

ommunication

and Fine Arts

(3) \*

[]

Semester Offered

Applied College

Physics II & Lab

(4) [f]

Concurrent Prerequisite

(A prerequisite course that may be

taken concurrently

Physics I & Lab

(4) [s]

CO-CURR

½ UNIT

\*Spatial Visualization Test required to enroll in ENG 1101

(3) \*

CO-CURR

½ UNIT \*

Prerequisite

(Course must be completed

prior to enrollment)

Strenath of

Materials

(3) [f,s]

CO-CURR

Course Credits

½ UNIT

MFT4998 - 1-6 \*\* Undergraduate Research in Mechanical Engineering Technology

/Composition

(3) \*

CO-CURR

January 2023

½ UNIT

Elective

(3) \*

CO-CURR

1/2 UNIT

\* See Notes

on Back

UN 3002 - 1-2, may be repeated If.s.sul

Undergraduate Cooperative Education I

\*\* On Demand

- 1. <u>General Education Requirements</u>: 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. <a href="https://www.mtu.edu/registrar/pdfs/core-and-hass-list-23-24.pdf">https://www.mtu.edu/registrar/pdfs/core-and-hass-list-23-24.pdf</a>
- 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. <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. <a href="https://www.mtu.edu/registrar/pdfs/core-and-hass-list-23-24.pdf">https://www.mtu.edu/registrar/pdfs/core-and-hass-list-23-24.pdf</a> 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: <a href="https://www.mtu.edu/math/undergraduate/placement/">https://www.mtu.edu/math/undergraduate/placement/</a> 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). <a href="https://www.mtu.edu/registrar/pdfs/co-curricular-courses-23-24.pdf">https://www.mtu.edu/registrar/pdfs/co-curricular-courses-23-24.pdf</a>
- 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: <a href="https://www.mtu.edu/mmet/undergraduate/advising/">https://www.mtu.edu/mmet/undergraduate/advising/</a>

January 2023