Bachelor of Science - Mechanical Engineering Technology

128 Total Credits

Academic Year 2021-22 – 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 16-17 Cr 14-17 Cr 16 Cr 17 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] (4) [f,s,su] (3) * (3) * (4) [f,su] Language ructor pern (3) [f,s,su] Fluids & Power Systems Focus: -or-- MA 3710 Option ' MET 4350 - 3 (MET 4300) [s] Eng. Statistics Principles and Application of **MET 4999** *ENG 1001 (3) [f,s,su] *ENG 1100 Heating, Ventilating, and **MET 2153** Professional Engineering Air Conditioning Systems Engineering Machine Tool Practice Problem Solving Analysis **EET 1411** MET 3500 **EET 3131 MET 4210 Fundamentals** Seminar MET 4377 - 3 [s] (2) [f] (2) [s] and Applications Measurement & Applied Quality Basic Manufacturing (1) [f,s] Applied Fluid Power --or-- *ENG 1101 *ENG1001/ Instrumentation (2) [f,s] Electronics Processes Techniques Eng. Analysis & 1100 course MET 4390 - 3 (MET 3700 & (4) [f,s,su] (4) [f] (3) [s] (3) [f] **Problem Solving** sequence MET 4360 (C)) [f] Technical (3) [f.s.su] Internal Combustion Engines С Elective *Pre-reg (c): **MET 3451** (3) MA1160/1161 MET 4575* Machine Manufacturing Focus: Senior Design II MET 4510 - 3 [s] CH 1150 & Project I **MSE 2100** (3) [s] Lean Manufacturing and MET 3242 **MET 2110** CH 1151 (2) [f,s] Intro, to **MET 2130** Production Planning Universitv Applied Machine c Technical -or-- ENT 4950 **Dynamics** Materials Design I Elective Chemistry I Statics (2) [f,s] MET 4585 - 3 [f] Science & Eng. (4) [s] (1-3)(3) [f] (3) [f] & Lab I **MET 4460** nstructor perm. regd Facilities Layout & Safety Design (3) [f,s,su] (4) [f,s,su] Product MET 4780 - 3 (MET 3500) [s] Design and MA 1160 Advanced Manufacturing **MET 4360** Development Calculus with **MET 4300** Thermal-**MET 2400** (2) [f,s] Technology I С Applied Fluids Lab MA 2160 Practical Other Technical Electives: (4) [f] MET 3400 Heat Transfer MA 1032 Calculus (1) [f,s] EET 3373 - 3 (EET 1411) [f,su] Applications --or-- MA 1161 Applied Fluid **MET 3700** (3) [f] Introduction to Prog. Controllers Precalculus with in Parametric Calculus Plus Mechanics Applied Technology II (4) [f,s,su] Modeling w/ Technology I ENT XXXX - variable 1-2 (3) [f] Thermodynamics Social (4) [f,s,su] (3) [s] Enterprise Project Work (5) [f,s,su] (3) [s] and Behavioral (except 3959, 3967, 4950, 4960) Sciences MET_2110 UN 1015 & UN 1025 (3) * MET 4996 - 1-3 ** PH 1200 Special Topics in Mechanical PH 1140 HASS Elective **MET 2150** Engineering Technology & PH 1240 HU 3120 & PH 1141 (Course from Applied Physics by Technical Applied College Technical and Humanities MET4997 - 1-3 ** Communication Any List) Inquiry II & Strenath of Physics I & Lab Elective Professional and Fine Arts Independent Study in Mechanical /Composition (3) * Applied College Materials (4) [s] (3) * Engineering Technology ommunication (3) * Physics II (3) * (3) [s] (3) [f,s,su] (4) [f] MET4998 - 1-6 ** Undergraduate Research in CO-CURR CO-CURR Mechanical Engineering 1/2 UNIT * 1/2 UNIT CO-CURR CO-CURR CO-CURR CO-CURR Technology 1/2 UNIT 1/2 UNIT 1/2 UNIT 1/2 UNIT UN 3002 - 1-2, may be repeated *Spatial Visualization Test required to enroll in ENG 1001 or ENG 1101) [f.s.su] Undergraduate Cooperative C () [] * See Notes Education I Prerequisite Concurrent Prerequisite Course Credits Semester Offered May 2021 (Course must be completed on Back (A prerequisite course that may be ** On Demand prior to enrollment) taken concurrently

- <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. <u>https://www.mtu.edu/registrar/pdfs/core-and-hass-list-21-22.pdf</u>
- 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. <u>https://www.mtu.edu/registrar/pdfs/core-and-hass-list-21-22.pdf</u> 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. Science Elective (STEM): https://www.mtu.edu/registrar/pdfs/stem-reguirements-21-22.pdf
- <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: <u>https://www.mtu.edu/math/undergraduate/placement/</u> Note: MA 1120 (4 credits) fulfills the requirement for MA 1032; MA 1121 (4 credits) fulfills the requirement for MA 1160/1161.
- 6. <u>Engineering Fundamentals</u>: ENG 1001 (2 credits) plus ENG 1100 (2 credits) is equivalent to ENG 1101 (3 credits). The Spatial Visualization test is required to enroll in ENG 1001 or ENG 1101. ENG 1003 is required concurrently with ENG 1001 or ENG 1101 if the Spatial Visualization test is not passed. MA 1160/1161 is a concurrent pre-requisite for ENG 1101, and MA 1031 or MA 1032 are concurrent pre-requisites for ENG 1001.
- 7. <u>Free Electives</u>: Any Michigan Tech course(s) or approved transfer course(s) that are 1000-level or above, and are not duplicated or equivalent courses.
- 8. <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 423 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-21-22.pdf
- 9. <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.
- 10. <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.
- 11. <u>Co-requisite</u> courses are courses that <u>must</u> be taken together in the same semester.
- **12.** <u>Colored arrows</u> are used to clarify the sequence of courses.
- 13. <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/