MA1160/1161
CALCULUS I
(4/5 CREDITS)
F, S, Su

PH1100
PHYSICS LAB I
(1 CREDIT)
F. S. Su

CH1150
CHEMISTRY
(3 CREDITS)
F. S. Su

ENG1101
or
ENG1001 & ENG1100
ENGINEERING ANALYSIS & PROB. SOLVING
(3 CREDITS)
F, S

MA2160
CALCULUS II
(4 CREDITS)
F, S, Su

PH2100
PHYSICS LECTURE I
(3 CREDITS)
F. S. Su

MA2320
LINEAR ALGEBRA
(2 CREDITS)
F, S, Su

ENG1102
ENGINEERING MODELING & DESIGN
(3 CREDITS)
F. S

MA3160
MULTIVARIABLE CALC
(4 CREDITS)
F, S, Su

MA3200
STATISTICAL CALC
(4 CREDITS)
F, S, Su

ENG1103
ENGINEERING PROBLEM SOLVING
(3 CREDITS)
F, S

MA3320
INTRO TO Materials Eng.
(3 CREDITS)
F, S

CH1151
CHEMISTRY LAB
(1 CREDIT)
F. S. Su

MA3420
STATISTICAL DESIGN
(3 CREDITS)
F, S, Su

ENG1104
ENGINEERING PROFESSIONALISM
(1 CREDIT)
F, S

MA3520
INTRO TO ELECTRICAL ENG.
(3 CREDITS)
F, S, Su

ENG1105
ENGINEERING PROJECTS
(1 CREDIT)
F, S

MA3600
INTRO TO ENGR. COMPS.
(3 CREDITS)
F, S, Su

ENG1106
ENGINEERING CAREER PREP
(1 CREDIT)
F, S

MA3710
STATISTICS
(3 CREDITS)
F, S, Su

ENG2120
STATICS-STRENGTH MAT'LS
(4 CREDITS)
S

MA4160
MULTIVARIABLE CALC
(4 CREDITS)
F, S, Su

ENG2130
DYNAMICS
(4 CREDITS)
F, S

MA4220
LINEAR ALGEBRA
(2 CREDITS)
F, S, Su

ENG2140
DYNAMICS II
(4 CREDITS)
S

ENG2123
LAB SAFETY FOR ENG.
(1 CREDIT)
F, S

MA4320
THERMOFLUIDS
(3 CREDITS)
S

ENG2124
LAB SAFETY FOR ENG.
(1 CREDIT)
S

MA4420
THERMODYNAMICS
(3 CREDITS)
S

ENG2125
LAB SAFETY FOR ENG.
(1 CREDIT)
Su

MA4520
RELIEF METHODS
(3 CREDITS)
F

ENG2126
LAB SAFETY FOR ENG.
(1 CREDIT)
F

MA4620
LEAN MANUFACT & PRODUCTION PLAN
(3 CREDITS)
S, F

ENG2127
LAB SAFETY FOR ENG.
(1 CREDIT)
Su

MA4720
RAPID MANUFACTUR
(3 CREDITS)
F

ENG2128
LAB SAFETY FOR ENG.
(1 CREDIT)
F

MA4820
PRODUCTION DESIGN
(3 CREDITS)
F

ENG2129
LAB SAFETY FOR ENG.
(1 CREDIT)
F

2** YEAR CORE MAY BE TAKEN IN EITHER ORDER IN THE SECOND YEAR.

UN1015 or UN1025 MAY BE TAKEN IN EITHER ORDER IN THE FIRST YEAR.

** HASS REQUIREMENTS
- 6 CREDITS MUST BE UPPER LEVEL 3000-4999
- UN1015 & UN1025 ARE PREREQUISITES FOR ALL UPPER LEVEL HASS COURSES
- HASS COURSES MAY BE TAKEN IN ANY ORDER

** SOCIAL & ETHICAL REASONING CORE
UN1015 or UN1025 MAY BE TAKEN IN EITHER ORDER IN THE SECOND YEAR.

** CRITICAL & CREATIVE THINKING CORE

** HASS REQUIREMENTS
- 6 CREDITS MUST BE UPPER LEVEL 3000-4999
- UN1015 & UN1025 ARE PREREQUISITES FOR ALL UPPER LEVEL HASS COURSES
- HASS COURSES MAY BE TAKEN IN ANY ORDER

** COMMUNICATION COMPOSITION HASS

** Social, Ethical Reasoning Core

** Critical, Creative Thinking Core

** HASS REQUIREMENTS
- 6 CREDITS MUST BE UPPER LEVEL 3000-4999
- UN1015 & UN1025 ARE PREREQUISITES FOR ALL UPPER LEVEL HASS COURSES
- HASS COURSES MAY BE TAKEN IN ANY ORDER

** Communication, Composition HASS

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes. See back of academic plan for more information on requirements for elective courses.
1 Senior Design **Prerequisite courses:**
   ENG1101, ENG1102, ENG2120, ENG3200, ENG3830 (C), and EE3010.

2 General Education Requirements (24 credits + 3 PE units):

   I. Core Courses (12 credits)
      ___ UN1015 Composition
      ___ UN1025 Global Issues or 3000+ Modern Language
      ___ Critical/Creative Think List
      ___ Social Resp./Ethical Reason List

   II. HASS Courses Requirements (12 credits)
      (www.admin.mtu.edu/em/documents/HASS Distribution List.pdf)
      - 6 credits upper level (3000- 4999)
      - 3 credits from each listed below
         ___ Communication/Composition
         ___ Humanities/Fine Arts List (HU/FA)**
         ___ Social & Behavioral Science List (EC/PSY/SS)**
         ___ 3 credits from any list**

      * EC3400 is required by the degree, and may **NOT** be counted as a Social Resp./Ethical Reason or HASS course.

   III. Co-curricular activities (3 units)
      In the co-curricular requirement, the three semester units will be physical education activities. These units are required for graduation, but are not included in the calculation of the GPA, nor in the overall degree-credit requirement. Note: most physical education activities will last for 7 ½ weeks or ½ semester. A student would need **six** of these ½-semester units to fulfill the 3-semester unit co-curricular requirement.

         PE__________  PE__________  PE__________
         PE__________  PE__________  PE__________

3 Quality Control Elective (select 3 credits):
   ___ MET4510  ___ MEEM4650  ___ OSM4650

4 Sustainability Elective (select 3 credits):
   ___ ENG4515  ___ CEE4506

5 Math/Science Elective (select 4 credits):
   __________  __________  __________  __________

6 Technical Electives (12 credits):
   Select 12 credits engineering credits at the 3000+ level in a coherent plan of study that is approved by the Academic Advisor for the Bachelor of Science in Engineering program, Department Chair of Engineering Fundamentals and Academic Dean for the College of Engineering. 6 credits must be 4000+ level.

   __________  __________  __________  __________  __________  __________
   __________  __________  __________  __________  __________  __________

7 Directed Electives (15 credits):
   Select 15 credits in a coherent plan of study such as partial fulfillment of a university approved minor, or a self-defined program with the advice of the BSE Academic Advisor.

   __________  __________  __________  __________  __________  __________
   __________  __________  __________  __________  __________  __________
   __________  __________  __________  __________  __________  __________