CIVIL ENGINEERING FLOWCHART
Built Academic Year 2023-24

**NOTE:** Linear Algebra & Differential Equations can be taken during the same semester (MA2321 & MA3521) or separate semesters (MA2320 & MA3520)

### Year 1
- **Fall:** MA1160/1161 (L) Calculus I 4 CREDITS F, S, Su
- **Spring:** MA2160 (L) Calculus II 4 CREDITS F, S, Su

### Year 2
- **Fall:** MA2320/2321 Linear Algebra & Differential Equations 2 CREDITS F, S, Su
- **Spring:** MA3160 (L) Calculus III 4 CREDITS F, S, Su

### Year 3
- **Fall:** MA3520/3521 Statistics 3 CREDITS F, S, Su
- **Spring:** CEE3311 Professional Practice 2 CREDITS SD

### Year 4
- **Fall:** SD = Senior Design Pre-requisite
- **Spring:** EC3400 Econ. Decision Analysis 3 CREDITS F, S, Su

### Core Courses
- **CHEMISTRY LAB I** 1 CREDIT F, S, Su
- **ENGR 1101** Engineering Analysis 3 CREDITS F, S
- **PHYSICS LAB II** 1 CREDIT F, S
- **PHYSICS LECTURE II** 3 CREDITS F, S

### Additional Courses
- **UN1015 Composition** 3 CREDITS F, S
- **UN1025 Global Issues** 3 CREDITS F, S
- **UN1031/1032 or MA1160/61 (C)**
- **MA1031/1032 or MA1160/61 (C)**
- **MA2160 (C)**

### Important Notes
- **F** INDICATES COURSE IS OFFERED FALL SEMESTER
- **S** INDICATES COURSE IS OFFERED SPRING SEMESTER
- **Su** INDICATES COURSE IS OFFERED SUMMER SEMESTER
- **L** INDICATES A COURSE WHICH INCLUDES A LAB
- **(C)** INDICATES THE COURSE CAN EITHER BE TAKEN AT THE SAME TIME (CO-REQ) OR TAKEN PRIOR TO THE COURSE (PRE-REQ)

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**General Education Requirements**
- Total Academic Credits: 131
- Total Co-Curricular Units: 3

**Built Infrastructure Path Requirements**
- MASS ELECTIVES:
  - 6 credits must be upper level (3000-4000)
  - UN1025 and UN1032 are prerequisites for all upper level MASS courses

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**Updated 05.25.2023**
SENIOR DESIGN (SD) PRE-REQS
(complete 7 of the following)
CEE3101, CEE3331, CEE3332, CEE3202,
CEE3620, CEE3810, BUILT INFRASTRUCTURE
DESIGN COURSE, & 2 BUILT INFRASTRUCTURE
ELECTIVES

BUILT INFRASTRUCTURE REQUIREMENTS
BUILT INFRASTRUCTURE DESIGN COURSE (select 1)
CEE4213 STRUCTURAL CONCRETE DESIGN Spring 4 cr.
CEE4223 STEEL DESIGN 1 Fall 4 cr.

BUILT INFRASTRUCTURE ELECTIVES (select 4)
CEE4020 DIGITAL PROJECT DELIVERY Fall 3 cr.
CEE4201 MATRIX STRUCTURAL ANALYSIS Fall 3 cr.
CEE4213 STRUCTURAL CONCRETE DESIGN Spring 4 cr.
CEE4223 STEEL DESIGN 1 Fall 4 cr.
CEE4233 STRUCTURAL TIMBER DESIGN Spring 3 cr.
CEE4244 LOADS FOR CIVIL STRUCTURES Spring 3 cr.
CEE4333 ESTIMATING, PLANNING, CONST. Fall 3 cr.
CEE4344 CONSTRUCTION SCHEDULING Spring 3 cr.
CEE4820 FOUNDATION ENGINEERING Fall 3 cr.
CEE4830 GEOSYNTHETICS Spring 3 cr.
CEE4850 ROCK ENGINEERING Spring 3 cr.
CEE5212 PRESTRESSED CONCRETE DESIGN Fall 3 cr.
CEE5213 CONCRETE/MASONRY BLDG SYS Fall 3 cr.

ENGINEERING SCIENCE ELECTIVE
(select 1)
BE2700 BIOMEDICAL SIGNALS & SYSTEMS
CM2110 MATERIAL AND ENERGY BALANCES
CM2200 INTRO TO MINERALS & MATERIALS
EE3010 CIRCUITS AND INSTRUMENTATION
MSE2100 INTRO TO MATERIALS SCI & ENGRG
MEEM2201 INTRODUCTORY THERMODYNAMICS
MEEM2700 DYNAMICS

UNDERGRADUATE CATALOG (COURSE DESCRIPTIONS):
https://www.mtu.edu/catalog/courses/

GENERAL EDUCATION (CO-CURRICULAR & HASS LIST):
https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/

PROFESSIONAL ELECTIVES
UNDERGRADUATE CATALOG: https://www.mtu.edu/catalog/courses/
• Any 1000 or higher level course in Computer Science, Fine Arts or Forestry. (CS, ART, FW, MUS, SND, THEA)
• Any 2000 or higher level course in Biological Sciences, Chemistry, Construction Management, Geology, Physics or Geospatial Engineering. (BL, CH, CMG, GE, PH, SU)
• Any 2000 or higher level course in Business or Economics (ACC, BUS, EC, FIN, MGT, MIS, MKT, OSM).
• Any 3000 or higher level course in Mathematics, Humanities, Psychology, Social Sciences or University Wide (MA, HU, PSY, SS, UN).
• Any 3000 or higher level course in Civil and Environmental Engineering (CEE) or any other Engineering Dept.

NOTE: OTHER COURSES MAY BE USED TO SATISFY THE PROFESSIONAL ELECTIVES REQUIREMENT IF APPROVED BY THE DEPARTMENT OF CIVIL, ENVIRONMENTAL, AND GEOSPATIAL ENGINEERING ACADEMIC ADVISOR.

GENERAL EDUCATION REQUIREMENTS
A. CORE COURSES (12 CREDITS)
1. UN1015 (COMPOSITION)
2. UN1025 (GLOBAL ISSUES) or 3000+ level Modern Language Course
3. CRITICAL AND CREATIVE THINKING
ART1000, HU2130, HU2324, HU2501, HU2503,
HU2538, HU2700, HU2701, HU2820, HU2910,
MUS1000, SND1000, SS2300, THEA1000
4. SOCIAL RESP. & ETHICAL REASONING
EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500,
SS2501, SS2502, SS2503, SS2504, SS2505, SS2600,
SS2610, SS2700
B. HASS COURSES (12 CREDITS)
(General Ed Website, left)
1. COMM/COMP:
____________________________________
2. HUMANITIES/FINE ARTS:
____________________________________
3. SOCIAL & BEHAVIORAL SCIENCES:
____________________________________
4. ANY HASS OR HASS RESTRICTED COURSE:
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• 6 credits must be upper division 3000-4000 level courses
• No more than 3 credits from the HASS Restricted list can be used to satisfy HASS requirements.
• Each course can satisfy only one requirement.
C. CO-CURRICULAR ACTIVITIES (3 UNITS)
(General Ed Website, left)
1. __________                             4. __________
2. __________                             5. __________
3. __________                             6. __________