CIVIL ENGINEERING FLOWCHART
General Path
Academic Year 2023-24

Michigan Tech

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

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
     MUST BE SCHEDULED IN ADDITION TO THE LECTURE

(C) INDICATES THE COURSE CAN EITHER BE TAKEN AT THE SAME TIME (C0-REQ) OR
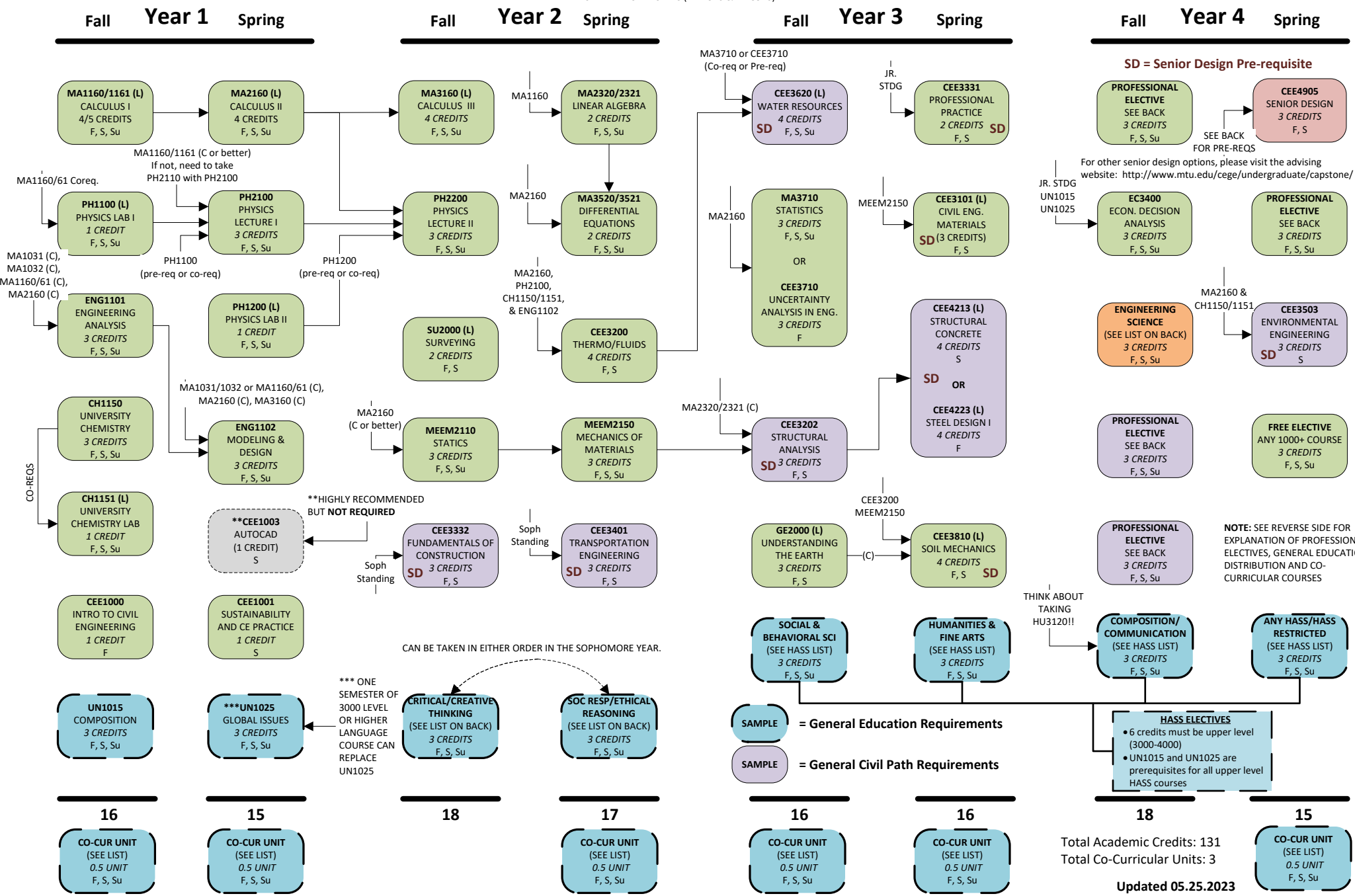   TAKEN PRIOR TO THE COURSE (PRE-REQ)

NOTE: LINEAR ALGEBRA & DIFFERENTIAL EQUATIONS CAN BE
TAKEN DURING THE SAME SEMESTER (MA2321 & MA3521) OR
SEPARATE SEMESTERS (MA2320 & MA3520)

Year 1
Fall / **Spring**

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

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

MA1160/1161 (C or better) If not, need to take PH2110 with PH2100

MA1160/61 Coreq.

PH1100 (L) PHYSICS LAB I 1 CREDIT F, S, Su

PH2100 PHYSICS LECTURE I 3 CREDITS F, S, Su

MA1031 (C), MA1032 (C), MA1160/61 (C), MA2160 (C)

PH1100 (pre-req or co-req)

ENG1101 ENGINEERING ANALYSIS 3 CREDITS F, S, Su

PH1200 (L) PHYSICS LAB II 1 CREDIT F, S, Su

MA1031/1032 or MA1160/61 (C), MA2160 (C), MA3160 (C)

CH1150 UNIVERSITY CHEMISTRY 3 CREDITS F, S, Su

ENG1102 MODELING & DESIGN 3 CREDITS F, S, Su

CO-REQS

CH1151 (L) UNIVERSITY CHEMISTRY LAB 1 CREDIT F, S, Su

CEE1000 INTRO TO CIVIL ENGINEERING 1 CREDIT F

CEE1001 SUSTAINABILITY AND CE PRACTICE 1 CREDIT S

UN1015 COMPOSITION 3 CREDITS F, S, Su

***UN1025** GLOBAL ISSUES 3 CREDITS F, S, Su

*** ONE SEMESTER OF 3000 LEVEL OR HIGHER LANGUAGE COURSE CAN REPLACE UN1025

16 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

15 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

Year 2
Fall / **Spring**

MA3160 (L) CALCULUS III 4 CREDITS F, S, Su

MA1160

MA2320/2321 LINEAR ALGEBRA 2 CREDITS F, S, Su

MA2160

PH2200 PHYSICS LECTURE II 3 CREDITS F, S, Su

MA3520/3521 DIFFERENTIAL EQUATIONS 2 CREDITS F, S, Su

PH1200 (pre-req or co-req)

MA2160, PH2100, CH1150/1151, & ENG1102

SU2000 (L) SURVEYING 2 CREDITS F, S

CEE3200 THERMO/FLUIDS 4 CREDITS F, S

MA2160 (C or better)

MEEM2110 STATICS 3 CREDITS F, S, Su

MEEM2150 MECHANICS OF MATERIALS 3 CREDITS F, S, Su

**HIGHLY RECOMMENDED BUT NOT REQUIRED

****CEE1003** AUTOCAD (1 CREDIT) S

CEE3332 FUNDAMENTALS OF CONSTRUCTION **SD** 3 CREDITS F, S

Soph Standing

CEE3401 TRANSPORTATION ENGINEERING **SD** 3 CREDITS F, S

Soph Standing

CAN BE TAKEN IN EITHER ORDER IN THE SOPHOMORE YEAR.

CRITICAL/CREATIVE THINKING (SEE LIST ON BACK) 3 CREDITS F, S, Su

SOC RESP/ETHICAL REASONING (SEE LIST ON BACK) 3 CREDITS F, S, Su

18 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

17 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

Year 3
Fall / **Spring**

MA3710 or CEE3710 (Co-req or Pre-req)

JR. STDG

CEE3620 (L) WATER RESOURCES **SD** 4 CREDITS F, S, Su

CEE3331 PROFESSIONAL PRACTICE 2 CREDITS **SD** F, S

MA3710 STATISTICS 3 CREDITS F, S, Su

OR

CEE3710 UNCERTAINTY ANALYSIS IN ENG. 3 CREDITS F

MA2160

MEEM2150

CEE3101 (L) CIVIL ENG. MATERIALS **SD** (3 CREDITS) F, S

CEE4213 (L) STRUCTURAL CONCRETE 4 CREDITS S

SD   OR

CEE4223 (L) STEEL DESIGN I 4 CREDITS F

MA2320/2321 (C)

CEE3202 STRUCTURAL ANALYSIS **SD** 3 CREDITS F, S

CEE3200 MEEM2150

GE2000 (L) UNDERSTANDING THE EARTH 3 CREDITS F, S

(C)

CEE3810 (L) SOIL MECHANICS 4 CREDITS F, S **SD**

SOCIAL & BEHAVIORAL SCI (SEE HASS LIST) 3 CREDITS F, S, Su

HUMANITIES & FINE ARTS (SEE HASS LIST) 3 CREDITS F, S, Su

SAMPLE = General Education Requirements

SAMPLE = General Civil Path Requirements

16 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

16 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

Year 4
Fall / **Spring**

SD = Senior Design Pre-requisite

PROFESSIONAL ELECTIVE SEE BACK 3 CREDITS F, S, Su

CEE4905 SENIOR DESIGN 3 CREDITS F, S

SEE BACK FOR PRE-REQS

For other senior design options, please visit the advising website: http://www.mtu.edu/cege/undergraduate/capstone/

JR. STDG UN1015 UN1025

EC3400 ECON. DECISION ANALYSIS 3 CREDITS F, S, Su

PROFESSIONAL ELECTIVE SEE BACK 3 CREDITS F, S, Su

MA2160 & CH1150/1151

ENGINEERING SCIENCE (SEE LIST ON BACK) 3 CREDITS F, S, Su

CEE3503 ENVIRONMENTAL ENGINEERING **SD** 3 CREDITS S

PROFESSIONAL ELECTIVE SEE BACK 3 CREDITS F, S, Su

FREE ELECTIVE ANY 1000+ COURSE 3 CREDITS F, S, Su

PROFESSIONAL ELECTIVE SEE BACK 3 CREDITS F, S, Su

NOTE: SEE REVERSE SIDE FOR EXPLANATION OF PROFESSIONAL ELECTIVES, GENERAL EDUCATION DISTRIBUTION AND CO-CURRICULAR COURSES

THINK ABOUT TAKING HU3120!!

COMPOSITION/ COMMUNICATION (SEE HASS LIST) 3 CREDITS F, S, Su

ANY HASS/HASS RESTRICTED (SEE HASS LIST) 3 CREDITS F, S, Su

HASS ELECTIVES
- 6 credits must be upper level (3000-4000)
- UN1015 and UN1025 are prerequisites for all upper level HASS courses

18 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

15 — CO-CUR UNIT (SEE LIST) 0.5 UNIT F, S, Su

Total Academic Credits: 131
Total Co-Curricular Units: 3

Updated 05.25.2023

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

SENIOR DESIGN (SD) PRE-REQS
(complete 7 of the following)

CEE3101, CEE3202, CEE3331, CEE3332, CEE3401, CEE3503, CEE3620, CEE3810, CEE4213 or CEE4223

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: _____

- 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. _____

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.