Electrical Engineering at Michigan Tech

Bachelor of Science – Electrical Engineering 2022-2023

The EE degree plan without a concentration

SAMPLE PLAN
Caculus-ready students

Follow this plan to avoid time conflicts between required classes.

Optional: Enterprise (ENT) participation:
ENT1960(1) ENT2950(1) ENT2960(1)

5) Enterprise **design option:**
ENT3950(1) → ENT3960(1) → ENT4950(2) → ENT4960(2)

ENT4950 & ENT4960: take in same enterprise & consecutive semesters.

Sem. 1- Fall	Sem. 2 - Spring	Sem. 3 - Fall	Sem. 4 - Spring	Sem. 5 - Fall	Sem. 6 - Spring	Sem. 7 - Fall	Sem. 8 - Spring
Co-hort courses		May take MA2320, delay MA3520&EE2112		A good time to co-op		5) Senior **design option:**	
MA1160/61 (4/5) Calculus I	MA2160 (4) Calculus II	*MA2321(2) Accelerated. Linear Alg	MA3160 (4) Multi-Variable Calculus	EE3131 (4) Electronics and Lab	UN1015 EE3131(C) EE3901 (2) Design Fund.	EE4901 (2) EE Design 1	EE4910 (2) EE Design 2
(C)	MA1160/61 (C)	TrackA Pre-req Co-register				EE3131 EE3901 EE3171(C)	
ENG1101(3) Engrg Analysis	ENG1102 (3) MODEL & DESGN	Track B *MA3521(2) Accel. Diff. Eq.	EE2112 (4) Electric Circuits II & Lab	EE3160 (3) Signals & Systems	EE3180 (3) Intro. Probability & Random Sig. Anal.	4) EE _____ EE Elective (3)	4) EE_____ EE Elective (3)
CH1150 (3) Univ Chem I		EE2111 (3) Electric Circuits I	*EE3120 (3) Electric Energy Systems or SO EE Elective	EE3140 (3) Electro-magnetics	EE3171 (4) Microcontroller Applications	4) EE_____ EE Elective (3)	4) EE_____ EE Elective (3)
Co-req			(C)				
CH1151 (1) Univ Chem I Lab	MA1160(c) PH1100 (1) Physics I Lab		PH1200 (1) Physics II Lab	4) EE_____ (3) EE Elective (3)		4) EE_____ EE Elective (3)	4) EE_____ EE Elective (3)
	(C)		(C)				
Take CH1000 first, if not well-prepared for University Chem.	**PH2100 (3) Physics I	MA2160	PH2200 (3) Univ. Physics 2				
	**PH2110 (2)Physics 1 Workshop REQUIRED if CD or D in Calc I						
CH1153 (1) (optional) Chem 1 Recitation Strongly recommended with CH1150/51	1) _____ (3) Social/Ethical Reasoning List	CS1111 (3) Intro C/C++ Programming	EE2174 (4) Digital Logic & Lab	2) _____ SELECT Approved Elec (3)		3) _____ Approved Electives (3)	6) _____ (3) Free Electives
	May postone to sem. 4 or 6	*Fall only*		*Choose from SELECT list in your degree audit*		May use ENT2950, ENT2960, ENT3950, ENT3960: CH1153	May use ENT2nnn: CH1153; excess TR credits, Etc...
1) UN1015 (3) Composition	1) UN1025 (3) Global Issues	1) _____ (3) Crit/Creative Thinking List		Choose at least 6 credits of 3000-4999 HASS.			
1) Co-Curr ½ unit	Upper-level language course may replace UN1025		Co-Curr ½ unit	1) _____(3) HASS HU,FA	1) _____(3) HASS Social & Behavioral Sci	1) _____(3) HASS Comm/ Composition	1) _____(3) Any HASS
				Co-Curr ½ unit	Co-Curr 1 unit		Co-Curr ½ unit
14.5/15.5	17	17 * Take 14 cr. min. w/ MA2321/3521	15.5	16.5	15/16	17.5	17.5

5) Think about:
Choose Enterprise or Senior Design option or EPS. See advisor for assistance. ENT3950 is taken 4th to last sem.

*EE3120 may be postponed for a Sophomore EE Elective course:

EE2190 - Photonics
EE2180 – Robotics
EE2230/31 – PCB Fabrication

4) EE Electives: Must have pre-reqs complete. Look up pre-reqs and semester offering on Registrar's webpage. No more than six cr.Lower level allowed. It is recommended to have at least one focus area.

(C) → Concurrent prerequisite (a prereq. that can be taken concurrently)

Study Abroad info:
https://www.mtu.edu/student-affairs/study-away-and-abroad-experiences/program/

Attend Career Events early on:
Semester 5 or 6 is good time to co-op.
https://www.mtu.edu/career/students/

1) 2) 3) 4) 5) 6) See notes on reverse side.

Obtain appropriate flowchart for a concentration if interested.

Undergraduate advisor:
EERC 131: Walk in or Email Judy jmburl@mtu.edu

Total 128
plus 3 units co-curricular activities

Footnotes – accompanies Visio BSEE flowcharts

Choose correct courses each semester. Run and review your Degree Audit Report each time you add, drop or switch courses and ***before*** each semester begins. Lists of electives and required courses are included in your online degree audit report. It is *your responsibility* to choose correct courses to complete degree requirements.

1) *Choose one course from each list for General Education requirements: ALWAYS* check for allowable course choices in your degree audit after registration adds and changes!
12 cr/ Gen Ed Core: UN1015, UN1025, one Critical & Creative Thinking course, *and* one Social responsibility & Ethical Reasoning course. UN 1025 may be substituted with an upper-level language course.

12 cr/ Gen Ed HASS lists: at least 6 credits must be upper-level 3000-4999. UN1015 and UN1025 (or upper-level language course) must be complete before taking upper-level HASS courses. Choose one course from each HASS list. View list of allowed courses in the degree audit and on the Registrar's Office General Education webpage.

HASS Composition/Communication: (HU)
HASS Social and Behavioral Science (EC/PSY/SS)
HASS Humanities and Fine Arts (ART/HU/MUS/SND/THEA)
HASS any list: Choose one course from any list above or from the HASS Restricted list. Upper level if needed (3000+)
Co-curricular activities: Choose 3 units of co-curricular activities (listed on Registrar's General Education webpage). ½ or 1 credit courses are available.

2) **SELECT Approved Elective** (Industry advised) - *choose one course:* BE2400, BL2010, CS1142, CEE3501, CEE3502, EC3400, EE3373 (or EET3373), ENG2120, ENG3200, ENG4515, MEEM2110, MEEM2150, MEEM2201, MEEM2700, MEEM3201, MSE2100, MSE4292/PH4292, PH2300, PH2400, PH3300
(SELECT approved elective is not required for biomedical or environmental applications concentrations)

3) Remaining **Approved Electives**: refer to your degree audit report with the engineering design path for list of valid courses. Examples: Engineering, Math, CS, Physics, Chem**.** Pass/fail courses do not count.

4) **EE Electives**: 21 credits (varies w/ concentration) of EE lecture/lab coursework. **Excluding** research, pass/fail, project, co-op, or independent study credits. The purpose is to add skills and knowledge in new ECE topics, or more in-depth knowledge in an ECE area of specialization or "Focus Area(s)". Preview course prerequisites and semester offerings for courses you are interested in. Check online Course Descriptions and the Schedule of Classes for the most up-to-date course information and semester offerings.

5) **Engineering Design Requirements**: 4 – 6 credits. Choose one option.
Option 1: "Senior Design", 4 credits, is the year-long company sponsored project team. EE4901(2) and EE4910(2) (or BE4901/BE4910) taken in fall-spring, or MEEM4901(2) and MEEM4911(2) taken in spring-fall or fall-spring. May use EPS-European Project Semester for Design Option 1, which includes EE3901 credit.
Option 2: "Enterprise" – 6 credits, 4 semesters of project work beginning at the point in time when you have 4 semesters left on campus: ENT3950(1), ENT3960(1), ENT4950(2) and ENT4960(2). The enterprise option may reduce the "Approved Electives" area by 2 credits.

6) Free Elective: A good use could be: CH1153, ENT module/courses, co-op, Enterprise 2000-level project work, or excess transfer credits. Cannot use co-curricular activities.

Concentration Electives: See your Degree Audit Report (u.Achieve) for the list(s) of valid electives with a concentration, or see the Degree Services .pdf audit for the BSEE with the concentration(s) you are interested in: http://www.mtu.edu/registrar/students/major-degree/audit/engineering/ A concentration is not required.
Concentrations: Biomedical Applications, Electric Power Engineering, Enterprise, Environmental Applications, Photonics.

✓ **GRADUATION**: . Apply for graduation one semester before your last. Register in the last semester's courses, review your degree audit, then meet with the advisor to review your last set of scheduled courses *before* your last semester begins.