

# Bachelor of Science in Electrical Engineering

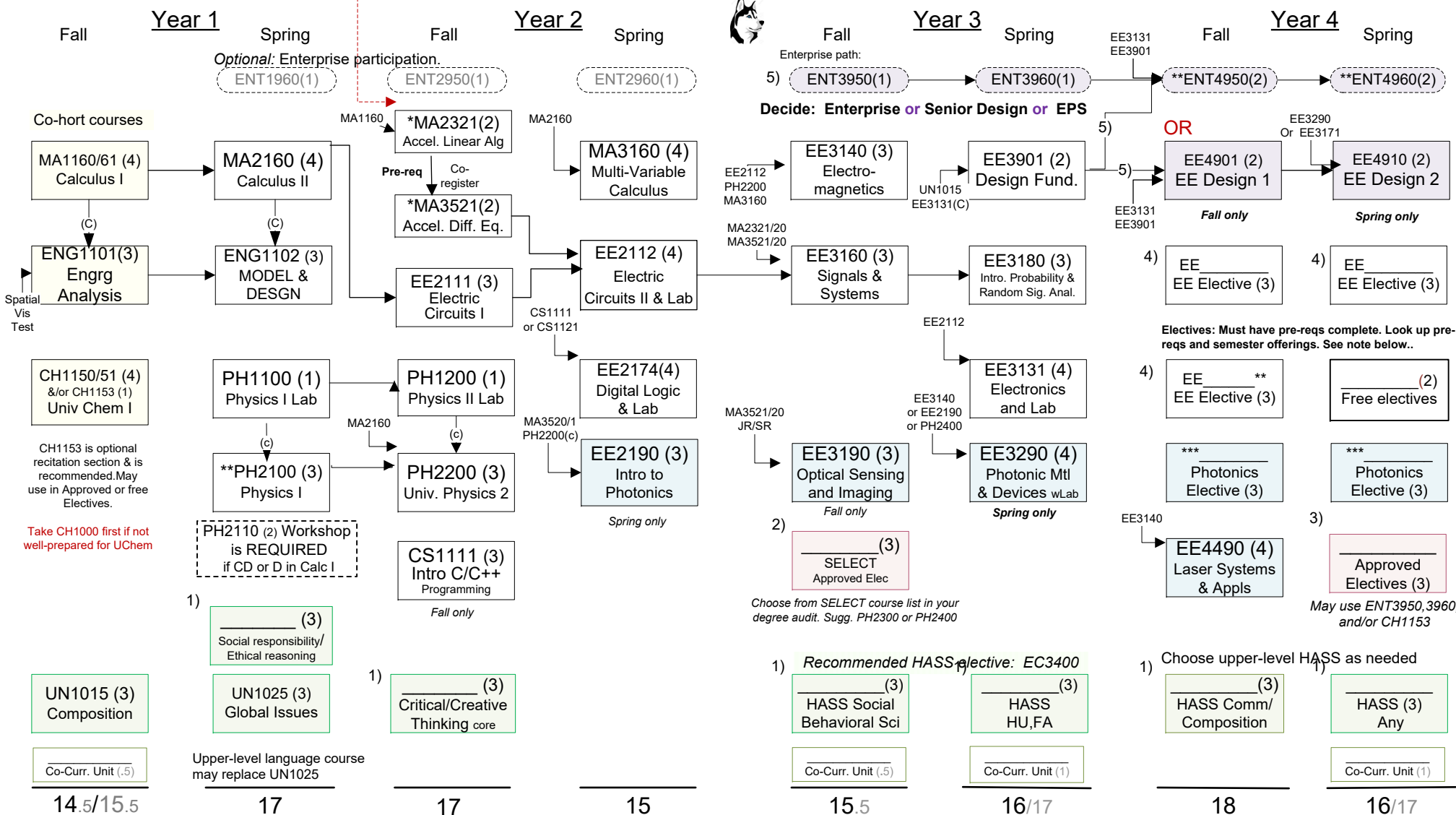
## Photonics Concentration

2022-2023

SAMPLE PLAN  
calculus-ready

MA2320 & MA3520, full semester courses, may replace MA2321 and MA3521. Delays EE2112 (1 sem.)

Follow this plan to avoid time conflicts between required classes.



1) 2) 3) 4) 5) See page 2 for notes.

\*\*\*Photonics electives: fall: EE4240, EE4252, PH4510, PH4640 odd  
spring: EE4253, EE4290, MSE4292, BE4250-Alt spg even, BE4410 spg odd

Undergraduate advisor:

Judy: EERC 131 walk in or email jmburl@mtu.edu

Student Organization:  
Join the Optics & Photonics Society!  
spie-officers-l@mtu.edu

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

**Total 128**  
plus 3 units  
co-curricular  
Activities

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

(C) Concurrent pre-requisite (a prereq. that may be taken concurrently)

\* Take 14 cr. min. w/ MA2321 & MA3521

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.