**Photonics Concentration**

*Updated sequence Nov 2017*
*Updated for EE4490 Jun 2018*

**SAMPLE PLAN**

**Photonics Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA2320 &amp; MA3520</td>
<td>Calculus I</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>MA2160</td>
<td>Calculus II</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>MA3160</td>
<td>Multi-Variable Calculus</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>EE2112</td>
<td>Electric Circuits</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>EE3160</td>
<td>Signals &amp; Systems</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
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<tr>
<td>EE3180</td>
<td>Intro. Probability &amp; Random Sig. Anal.</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
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<tr>
<td>EE3261</td>
<td>Control Systems</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
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<tr>
<td>EE4910</td>
<td>EE Design 1</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
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<tr>
<td>EE4910</td>
<td>EE Design 2</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
</tr>
</tbody>
</table>

**Electives:** Must have pre-reqs complete. Look up pre-reqs and semester offerings. See note below.

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**GRADUATION Checklist:**

1. **Apply to graduate 1 or 2 semesters before your last semester.** Date: ____________

2. **FINAL degree audit review:** Meet with the advisor at the end of the semester before your last, after scheduling last set of classes and reviewing your degree audit report:

   Final Audit Date: ____________  Advisor check: ____________

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**Undergraduate advisor:**

EERC 131. Call 487-2550 to schedule appt.  eceadvise@mtu.edu
Choose correct courses each semester. Run and review your online Degree Audit each time you add, drop or switch courses and before each semester begins.

Banweb – Student Records – Degree Audit (Do not select from pull-downs, just Run, Run, wait, then click blue link)

Lists of electives and required courses are included in your online degree audit report. It is your responsibility to choose correct courses.

1) **Choose one course from each list for General Education requirements:** View lists online or in your degree audit report.
   - Critical & Creative Thinking list: FA2330, FA2520, FA2720, FA2820, HU2130, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300, TA9004L
   - Social responsibility & Ethical Reasoning list: EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500, SS2501, SS2502, SS2503, SS2504, SS2505, SS2600, SS2610, SS2700, TA9008L
   - **HASS lists:** at least 6 credits must be at Upper Level 3000-4999.
   - **HASS Composition/Communication:** HU2810, HU2830, HU3015, HU3120, HU3151, HU3693, HU3694, HU3832, HU4628, HU9305L, HU9305U
   - **HASS Social and Behavioral Science (EC/PSY/SS) choice:** __________
   - **HASS Humanities and Fine Arts (HU/FA) choice:** __________ Upper level if needed.
   - **HASS any list:** _________________ Upper level if needed.

2) **SELECT Approved Elective course** list: choose one course  
   - EE/EET3373, ENG2120, ENG3200, ENG4510, MEEM2110, MEEM2150, MEEM2201, MEEM2700, MY2100, MY4292, PH2300, PH2400, PH3300 (not required for biomedical or environmental applications concentrations)

3) **Remaining Approved Electives:** refer to your degree audit for list of valid courses. Ex: Engineering, Math, CS, Physics, Chem. Pass/fail courses do not count.

4) **EE Electives:** 15 credits (3-12 cr. w/ concentration) of EE lecture/lab coursework. Excludes research, pass/fail, project, co-op, or independent study credits. Look for semester offerings in the online Schedule of Classes. Look for pre-requisite and other course information by clicking the CRN, or in the online Course Descriptions.
   - EE electives are offered once per year, or in alternating years (ex. EE4240, EE5223, EE5250). Check online Course Descriptions and the Schedule of Classes for the most up-to-date course information.

5) **Engineering Design Requirements:** 4 – 6 credits
   - **Option 1:** “Senior Design”, 4 credits, is the year-long company sponsored project team. EE4901(2) and EE4910(2) 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). Reduces “Approved Electives” by 2 credits if applicable. ENT1960, ENT2950, and ENT2960 may not count in engineering design, but may be used in approved or free electives.

6) **Free Elective:** a good use of Free Elective: CH1153, MA1161 5th credit, Enterprise 2000-level project work, or excess transfer credits. Cannot use co-curricular activities.

**Concentration Electives:** See your Degree Audit Report in Banweb for list of valid electives with a concentration, or see the Degree Services .pdf audit for the BSEE with a concentration you are interested in: [http://www.mtu.edu/registrar/students/major-degree/audit/engineering/](http://www.mtu.edu/registrar/students/major-degree/audit/engineering/) A concentration is not required.