Approved Electives and Approved Math/Science electives
(includes Chemistry CH1100 and higher)

**12 credits are required.**  (13 credits required if you took EE2171)

1. **Approved Math & Science:** Choose a minimum of **5 credits** from the following:

   - Any MA course except 2 cr of MA1030.  Note: (1 cr MA1030, MA1031, MA1032 will count only if taken before Differential Calculus MA1160, MA1161);
   - 4 cr Max. MAA
   - Any BL course except BL3990
   - Any CH course numbered 1100 or above
   - Any PH course except PH2230
   - The following GE courses: GE2000, GE2050, GE2200, GE2300, GE2310, GE2640, GE2900, GE3100, GE3200, GE3300, GE3320, GE3600, GE3900, GE3920, GE4170, GE4500, GE4640, GE4931, GE4932, GE4933
   - One credit of MY 2100

2. **Choose remaining approved electives from above or the following:**

   - Any Math or Science elective listed above.
   - Any BA course except BA1700 and BA2100
   - Any CS course except CS1000
   - Any EC course
   - Any ENG course except ENG3000 and ENG3100
   - Any BE, CE, CM except CM3410, GE, MEEM, MG, MY course
   - Any EE course (maximum of 4 credits)
   - UN4000 Remote Sensing Seminar, UN4500 Technological Entrepreneurship
   - UN3002 or UN3003 Co-op (6 credits maximum).
   - ENT Enterprise modules, enterprise project work

**Suggestions:**

- CH1150 - General Chemistry (CH1100 may be a pre-req for courses you'll want later on: MEEM, MY, CE, ENG, etc)
- Or CH1150/51/53 – University Chemistry
- CS1141 C for java programmers:  pre-req=CS1122  Recommended for EE majors.
- (now obsolete: CS 1129 Intro to Comp. Sci. II in C++)
- EC 3400 Economic Decision Analysis
- MEEM 2700 Dynamics
- MY 2100 Intro to Material Science & Engineering  Chemistry is pre-req.
- MY 3700 Electronic, Optical & Magnetic Properties of Materials. MEEM2700 is pre-req.

If you plan to take the **Fundamentals of Engineering (FE)** Exam during your senior year, it would be beneficial for you to take courses from this list:

- ENG 2120 - Statics and Strength of Materials
- MEEM 2110 - Statics
- MEEM 2200 - Thermodynamics  Chemistry is pre-req.
- MEEM 3210 - Fluid Mechanics (has pre-requisites)
- EE4240 – Introduction to MEMS

**Application of Probability or statistics requirement:**

If you began **Fall 2006 thru Spring/Smr 2009**, you must take one of these courses for **EE Elective credit**:

EE4250, EE4256, EE4257, EE4272, EE4290, EE3180, or take EE3180 in place of MA3710/MA3720.

**Photonics Concentration Electives:**  Select 6 credits from the following with a minimum of 3 credits selected from **EE4256, EE4257, and EE4290.**  (Fall 2006 thru Spring/Smr 2009)

- EE4252 Digital Signal Processing  Fall
- EE4253 Real Time Signal Processing  Spring
- EE4256 Fourier Optics  Fall
- EE4257 Digital Image Processing  Spring
- EE4290 Optical Communication  Spring
- MY3700 Electronic, Optical, and Magnetic Properties of Materials  Spring
- PH3210 Optics  Fall
- PH4510 Introduction to Solid State Physics  Fall