Notes:
1. Four technical electives are required, with at least 2 in the major and at least 3 in engineering. EGN courses count as native to either engineering major.
2. Social sciences requirement: (ECO101J and ECO102J) or (EGN304 + any two J core courses)
3. (G,H,I) core group: 2 in the same letter or topically related
   - One writing intensive course (W core) must be taken

Advisor: ___________________  Student: ___________________  ID#: ________  Major: ______

Computer Engineering (+15–17)
- not required in EE-CEc (5 courses replaced by the courses below)
- required for a minor in EE (+ 2 ELE electives)

1. Fall: 16
   - COS 161 Algorithms in Programming
   - ELE 0xx, required for a minor in EE (+ 2 ELE electives)
   - ELE 271 Introduction to Microprocessors
   - ELE 262 Physical Electronics
   - ELE 342 Electronics I

2. Spring: 17
   - ELE 343 Electronics II
   - COS 285 Data Structures
   - ELE 314 Linear Signals and Systems
   - ELE 351 Electromagnetic Fields

3. Fall: 17
   - ELE 323 Electromechanical Energy Conversion
   - COS 301 Engineering Elective (ELE, MEE or EGN)
   - ELE 362 Materials Science

4. Spring: 17
   - COS 362 Materials Science
   - ELE 331 Engineering Elective (ELE, MEE or EGN)
   - ELE 380 Design Project II
   - ELE 381 Design Project III

Total Credits: 126

Electrical Engineering (+32)

1. Fall: 16
   - COS 161 Algorithms in Programming
   - ELE 0xx, required for a minor in EE (+ 2 ELE electives)
   - ELE 271 Introduction to Microprocessors
   - ELE 262 Physical Electronics

2. Spring: 17
   - ELE 342 Electronics I
   - COS 285 Data Structures
   - ELE 314 Linear Signals and Systems
   - ELE 351 Electromagnetic Fields

3. Fall: 17
   - ELE 323 Electromechanical Energy Conversion
   - COS 301 Engineering Elective (ELE, MEE or EGN)
   - ELE 362 Materials Science

4. Spring: 17
   - COS 362 Materials Science
   - ELE 331 Engineering Elective (ELE, MEE or EGN)
   - ELE 380 Design Project II
   - ELE 381 Design Project III

Total Credits: 128

Engineering Core (78 credits)

- EGN 100 Introduction to Engineering
- PHY 121K General Physics I + PHY 114K: lab I
- MAT 152D Calculus A
- ENG 100C College Writing
- COS 160 Structured Problem Solving: Java + COS 170: lab
- PHY 123 General Physics II + PHY 116: lab II
- MAT 153 Calculus B
- ELE 216 Circuits I: Steady-State Analysis
- MEE 230 Thermodynamics
- MEE 150 Applied Mechanics: Statics
- MEE 360 Fluid Mechanics
- MEE 332 Thermal Systems
- MAT 530 Differential Equations
- ENG 402 Design Project II
- MEE 370 Controlled Mechanisms
- ELE 403 Design Project III

Mechanical Engineering (+30)

- ECO 101J Introductory Macroeconomics
- ECO 102J Introductory Microeconomics
- MEE 360 Fluid Mechanics
- MEE 332 Thermal Systems
- MEE 270 Strength of Materials
- MEE 251 Mechanics
- MEE 373 Controlled Mechanisms
- MEE 304 Engineering Economics
- MEE 301 Design Pr I: Engineering Profession
- MEE 380 Theory of Probability and Statistics
- MEE 331 Engineering Elective (ELE, MEE or EGN)
- MEE 332 Engineering Elective (ELE, MEE or EGN)
- MEE 333 Engineering Elective (ELE, MEE or EGN)
- ENG 402 Design Project II
- MEE 381 Design Project III

USM core (+21)

3. MAT 153 Calculus B
4. ENG 100C College Writing
5. PHI 1_E Skills of Analysis Elective

Minor in EE: ELE xxx

Minor in MEE: MEE xxx

Elective (MEE or EGN)
- Junior:
  - COS 161 Algorithms in Programming
  - ELE 271 Introduction to Microprocessors
  - ELE 262 Physical Electronics
  - ELE 342 Electronics I
  - ELE 314 Linear Signals and Systems
  - ELE 351 Electromagnetic Fields
  - ELE 323 Electromechanical Energy Conversion
  - COS 301 Engineering Elective (ELE, MEE or EGN)
  - ELE 362 Materials Science
  - ELE 380 Design Project II
  - ELE 381 Design Project III
  - MEE 360 Fluid Mechanics
  - MEE 332 Thermal Systems
  - MEE 270 Strength of Materials
  - MEE 251 Mechanics
  - MEE 373 Controlled Mechanisms
  - ENG 402 Design Project II
  - MEE 381 Design Project III

Elective (G,H,I) Core Group: 2 in the same letter or topically related
- One writing intensive course (W core) must be taken

Notes:
1. Four technical electives are required, with at least 2 in the major and at least 3 in engineering. EGN courses count as native to either engineering major.
2. Social sciences requirement: (ECO101J and ECO102J) or (EGN304 + any two J core courses)
3. (G,H,I) core group: 2 in the same letter or topically related
   - One writing intensive course (W core) must be taken
Below are the possible combinations of courses to satisfy the technical elective requirements in each major. The student must pick one technical elective from each of the four columns in the respective major.

**Electrical Engineering major**  
(including the Computer Engineering concentration)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ELE342</td>
<td>ELE412</td>
<td>ELE442</td>
<td>ELE444</td>
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<tr>
<td>ELE343</td>
<td>ELE445</td>
<td>ELE363</td>
<td>ELE464</td>
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<tr>
<td>ELE342</td>
<td>ELE467</td>
<td>ELE468</td>
<td>ELE469</td>
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<tr>
<td>ELE314, MAT350</td>
<td>ELE483</td>
<td>ELE314, COS160</td>
<td>ELE314, COS160</td>
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<tr>
<td>ELE323</td>
<td>ELE324</td>
<td>ELE362, EGN362</td>
<td>ELE217, COS160</td>
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</table>

**Mechanical Engineering major**

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<th>Course</th>
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<tbody>
<tr>
<td>MEE360, MAT350</td>
<td>MEE432</td>
<td>MEE374</td>
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<tr>
<td>ELE217</td>
<td>EGN362</td>
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**ELE: Engineering courses that are distinctly electrical.**

- **ELE342**: Power Electronics
- **ELE342**: Analog Integrated Circuits and Design
- **ELE342**: Special Topics in CMOS Integrated Circuit Design
- **ELE342**: Microelectronic Fabrication
- **ELE342**: Digital Signal Processing
- **ELE342**: Digital Image Processing

**EGN: Engineering courses that contain elements of both electrical and mechanical, or that are applicable to both.**

- **ELE217, COS160**: Robot Modeling
- **ELE217, COS160**: Robot Intelligence
- **ELE217**: Control Systems
- **ELE323**: MEMS

**MEE: Engineering courses that are distinctly mechanical.**

- **MEE360, MAT350**: Heat Transfer
- **MEE374**: Fundamentals of Mechanical Vibrations
- **MEE375**: Advanced Thermal Systems
- **MEE361**: Physical Metallurgy

Required 300-level courses in one major count as electives in another major. Below is a list of additional engineering courses offered as technical electives. Prerequisites are listed above each course. Within a major cluster, each row depicts a specific subject area. The list is updated as new areas and new courses within an area are developed. Electives are offered on a rotation basis and in response to student interest. Please contact the Engineering Department to inquire about currently scheduled offerings. Eligible technical electives outside engineering include but are not limited to advanced courses in Mathematics, Physics, Chemistry and Computer Science.