Plan of Study for the Electrical Engineering SB Concentration
Effective for Students Declaring the Concentration after Nov 1, 2013

This Plan of Study Form is for a (Circle One): DECLARATION REVISION

The S.B. Program in Electrical Engineering must contain at least 20 half courses: 4 half-courses in mathematics, 4 half-courses in basic sciences, and 12 half-courses in engineering topics. Plans of Study will not be considered final until this form has been signed. The signature of this form ensures that the proposed plan meets the ABET distribution requirements.

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>Math</th>
<th>Science</th>
<th>Engr. Topics</th>
<th>Semester (Fall/Spring Year)</th>
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<tbody>
<tr>
<td>Mathematics Required</td>
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<tr>
<td>Math 1a – Intro to Calculus 1</td>
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<td>Math 1b – Intro to Calculus 2</td>
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<tr>
<td>AM 21a – Mathematical Methods in the Sciences 1</td>
<td>1.00</td>
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<td>(or Math 21a or 23a)</td>
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<tr>
<td>AM 21b – Mathematical Methods in the Sciences 2</td>
<td>1.00</td>
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<td>(or Math 21b or 23b)</td>
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<td>Mathematics Elective (if you started in AM/Math 21a)</td>
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<td>1.</td>
<td>1.00</td>
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<tr>
<td>Probability and Statistics</td>
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<tr>
<td>ES 150 – Intro to Probability with Engineering Applications</td>
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<tr>
<td>Physics</td>
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<tr>
<td>AP 50a – Physics as a Foundation for Sci &amp; Eng 1</td>
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<td>(or PS 12a, Physics 15a or 16)</td>
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<tr>
<td>AP 50b – Physics as a Foundation for Sci &amp; Eng 2</td>
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<tr>
<td>(or PS 12b or Physics 15b)</td>
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<tr>
<td>Science Electives See list on page 3</td>
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<td>2.</td>
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<tr>
<td>Computer Science CIRCLE ONE</td>
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<tr>
<td>CS 50 – Intro to Computer Science 1</td>
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<td>CS 51 – Intro to Computer Science 2</td>
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<tr>
<td>CS 61 – System Programming &amp; Machine Organization</td>
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</tbody>
</table>
### REQUIRED COURSES

(Circle course and % for course you are taking or plan to take in each category.)

<table>
<thead>
<tr>
<th>Semester (Fall/Spring Year)</th>
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#### Sophomore Forum

**Electrical Engineering Core**

- **ES 52** – The Joy of Electronics – Part 1
  or Physics 123 – Laboratory Electronics
- **ES 154** – Electronic Devices & Circuits
- **ES 156** – Signals & Systems

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#### Electrical Engineering Electives

See list on page 3

*Students should consult an advisor to select an appropriate set of Electrical/Engineering Electives*

1. 
2. 
3. 
4. 

#### Engineering (or Additional Electrical) Electives

See list on page 3

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<thead>
<tr>
<th>Semester (Fall/Spring Year)</th>
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#### Engineering Design

- **ES 96** – Engineering Problem Solving & Design Project
- **ES 100hf** – Engineering Design Projects

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### TOTALS

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Student signature

________________________________________                     Date: ______________

Assistant/Director of Undergraduate Signature

________________________________________                     Date: ______________

This plan does/does not meet the ABET distribution requirements

__________________________________________                 Date: ______________

**Assistant Dean for Education/Student Affairs Office**

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*Electrical Engineering SB*  
Rev. Nov 2013  
2/3
Mathematics Electives

- AM 104 – Series Expans & Complex Analysis
- AM 105 – Ordinary & Partial Diff Eq
- AM 106 – Applied Algebra
- AM 107 – Graph Theory & Combinatorics
- AM 147 – Nonlinear Dynamical Systems

Science Electives

Introductory Courses

- LS 1a - Intro to the Life Sciences
- or LS A – Foundational Chem & Bio
- PS 1 - Chemical Bonding, Energy, & Reactivity
- PS 10 - Quantum and Stat Found of Chem
- PS 11 – Found & Frontiers of Modern Chem
- Physics 15c – Wave Phenomena

Upper Level Courses

- AP 225 - Intro to Soft Matter
- Chemistry 160 - Quantum Chemistry
- EPS 109 – Earth Resources & the Enviro
- EPS 132 - Intro to Meteorology & Climate
- Physics 140 – Intro to Biophysics
- Physics 143a - Quantum Mechanics I
- Physics 151 – Mechanics
- Physics 153 – Electrodynamics

Electrical Engineering Electives

- AP 195 – Intro to Solid State Physics
- BE 130 – Neural Control of Movement
- CS 51 – Intro to Computer Science 2
- CS 61 - System Programming & Machine Org
- CS 141 – Computing Hardware
- CS 143 – Computer Networks
- CS 144r – Networks Design Projects
- CS 146 – Computer Architecture
- CS 148 – Design of VLSI Circuits & Systems
- CS 164 – Software Engineering
- CS 175 – Computer Graphics
- CS 179 - Design of Usable Interactive Sys
- CS 189 – Autonomous Multi-Robot Systems
- ES 50 – Intro to Electrical Engineering
- ES 151 – Applied Electromagnetism
- ES 155 – Biological Signal Processing
- ES 159 – Intro to Robotics
- ES 170 – Applied Quantum Mechanics
- ES 173 – Intro to Electronic & Photonic Dev
- ES 175 – Photovoltaic Devices
- ES 176 – Intro to MEMS
- ES 177 – Micro Fabrication Laboratory

Engineering Electives (Incomplete List)

- AM 111 – Intro to Scientific Computing
- AM 115 – Mathematical Modeling
- AM 121 – Intro to Optimization
- BE 110 - Physiological Systems Analysis
- BE 121 – Cell Engineering
- BE 125 – Tissue Engineering
- BE 191 – Intro to Biomaterials
- CS 109 – Data Science
- CS 124 – Data Structures & Algorithms
- CS 152 – Programming Languages
- CS 153 - Compliers
- CS 181 – Intelligent Machines: Perception, Learning, & Uncertainty
- CS 182 - Intelligent Machines: Reasoning, Actions, & Plans
- CS 187 – Computational Linguistics
- ES 51 – Computer Aided Machine Design
- ES 53 – Quant Physiology or Bioengineering
- ES 120 – Intro to the Mechanics of Solids
- ES 123 – Intro to Fluid Mech & Transport Processes
- ES 125 – Mechanical Systems
- ES 128 – Computational Solid & Structural Mechanics
- ES 139 – Innovation in Sci & Eng
- ES 162 – Hydrology & Environmental Geomechanics
- ES 163 – Pollution Control in Aquatic Ecosystems
- ES 164 – Environmental Chemistry
- ES 165 – Water Engineering
- ES 181 – Engineering Thermodynamics
- ES 190 – Intro to Materials Sci & Eng