Plan of Study for the Electrical Engineering Track of AB Engineering Science Concentration
Effective for Students Declaring the Concentration after July 1, 2016

DATE: _______________  NAME: __________________________
CLASS: _______________  EMAIL: __________________________

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

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>Semester (Fall/Spring Year)</th>
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</thead>
<tbody>
<tr>
<td><strong>Mathematics Required</strong> 4 half courses</td>
<td></td>
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<tr>
<td>Math 1a – Intro to Calculus 1</td>
<td></td>
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<tr>
<td>Math 1b – Intro to Calculus 2</td>
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<tr>
<td>AM 21a – Mathematical Methods in the Sciences 1</td>
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<tr>
<td>(or Math 21a or 23a)</td>
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<tr>
<td>AM 21b – Mathematical Methods in the Sciences 2</td>
<td></td>
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<tr>
<td>(or Math 21b or 23b)</td>
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<tr>
<td><strong>Physics</strong> 2 half courses</td>
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<tr>
<td>AP 50a – Physics as a Foundation for Science &amp; Engineering 1</td>
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<tr>
<td>(or PS 12a, Physics 15a or 16)</td>
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<tr>
<td>AP 50b - Physics as a Foundation for Science &amp; Engineering 2</td>
<td></td>
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<tr>
<td>(or PS 12b or Physics 15b)</td>
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<tr>
<td><strong>Computer Science</strong> CIRCLE ONE</td>
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<tr>
<td>CS 50 – Intro to Computer Science 1</td>
<td></td>
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<tr>
<td>CS 51 – Intro to Computer Science 2</td>
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</tr>
<tr>
<td>CS 61 – System Programming &amp; Machine Organization</td>
<td></td>
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<tr>
<td><strong>Sophomore Forum</strong></td>
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</tbody>
</table>

| **Electrical Engineering Core**                                                 |                             |
| ES 150 – Introduction to Probability with Engineering Applications               |                             |
| ES 154 – Electronic Devices and Circuits                                         |                             |
| ES 156 – Signals and Systems                                                     |                             |
Electrical Engineering Breadth CIRCLE TWO
- ES 52 - The Joy of Electronics – Part 1
  or ES 153 – Laboratory Electronics
- CS 141 – Computing Hardware
- ES 173 – Intro to Electronic & Photonic Devices
- ES 177 – Microfabrication Laboratory
- ES 151 – Applied Electromagnetism

Electrical Engineering Electives See list on page 3
1. 
2. 
3. 
4.

Student Signature

________________________________________                     Date: ____________

Assistant Director of Undergraduate Studies

________________________________________                     Date: ____________

Adviser indicate if a petition is needed: Yes ____ No ____

Director of Undergraduate Studies

________________________________________                     Date: ____________
Electrical Engineering Electives

Students choosing to Concentrate in *Electrical and Computer Engineering* in the *Engineering Sciences A.B. Program* have a broad set of *Engineering Electives* which they may take to satisfy their degree requirements.

The following courses may serve as *Engineering Electives*, only if taken during the Freshman or Sophomore years. Only one of these courses may be used as an *Engineering Elective*:

- ES 6 – Environmental Science & Technology
- ES 50 – Introduction to Electrical Engineering
- ES 53 – Quantitative Physiology as a Basis for Bioengineering

The following courses are intended to serve as a *sampling* of allowed *Engineering Electives*. Other courses may be allowed (including 200-level courses): students should confer with their *Concentration Advisors* to determine the suitability of a course as an *Engineering Elective*.

- AM 104 – Series Expansions & Complex Analysis
- AM 105 – Ordinary & Partial Differential Equations
- AM 108 – Nonlinear Dynamical Systems
- AP 195 – Intro to Solid State Physics
- Chemistry 160 – Quantum Chemistry
- CS 51 - Intro to Computer Science 2
- CS 141 - Computing Hardware
- CS 143 - Computer Networks
- CS 144r – Networks Design Projects
- CS 148 – Design of VLSI Circuits & Systems
- CS 161 – Operating Systems
- CS 175 – Computer Graphics
- CS 283 - Computer Vision
- ES 51 – Computer Aided Machine Design
- ES 52 – The Joy of Electronics – Part 1
- ES 91r – Supervised Reading & Research (one semester only)
- ES 120 – Intro to the Mechanics of Solids
- ES 121 – Intro to Optimization: Models & Methods
- ES 123 - Introduction to Fluid Mechanics & Transport Processes
- BE 110 - Physiological Systems Analysis
- ES 151 - Applied Electromagnetism
- ES 159 – Intro to Robotics
- ES 173 – Intro to Electronic & Photonic Devices
- ES 177 – Photonic & Electronic Device Laboratory
- ES 181 – Engineering Thermodynamics
- ES 190 – Intro to Materials Science & Engineering
- Physics 143a – Quantum Mechanics 1
- Physics 153 - Electrodynamics