Plan of Study for the Mechanical and Materials Science and Engineering Track of AB Engineering Sciences Concentration

Effective for Students Declaring the Concentration after July 1, 2018

DATE: _____ NAME: _____

CLASS: _____ EMAIL: _____

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

REQUIRED COURSES (Circle course and % for course you are taking or plan to take in each category.)	**Semester** (Fall/Spring Year)
Mathematics Required 4 courses Math 1a – Intro to Calculus 1 Math 1b – Calculus, Series, and Differential Equations AM 21a – Mathematical Methods in the Sciences 1 (or Math 21a or 23a) Math 21b – Linear Algebra & Differential Equations (or AM 21b or 23b)	_____ _____ _____ _____
Physics 2 courses PS 12a – Mech from an Analytic, Num & Exp Perspective (or Physics 15a or 16, AP 50a) PS 12b – E & M from an Analytic, Num & Exp Perspective (or Physics 15b or AP50b)	_____ _____
Computer Science CIRCLE ONE CS 50 – Intro to Computer Science 1 CS 51 – Intro to Computer Science 2 CS 61 – Systems Programming & Machine Organization	_____
Sophomore Forum	_____
Applied Mathematics See list on page 3 1.	_____
Mechanical Engineering Core ES 120 – Intro to the Mechanics of Solids ES 123 – Intro to Fluid Mechanics & Transport Processes ES 125 – Mechanical Systems ES 181 – Engineering Thermodynamics ES 190 – Intro to Materials Science & Engineering	_____ _____ _____ _____ _____

REQUIRED COURSES (Circle course and % for course you are taking or plan to take in each category.)	**Semester** (Fall/Spring Year)
Electronics* See list on page 3 1.	_____
Mechanical Engineering Electives* See list on page 3 1. 2.	_____ _____

* *For courses co-listed in another department, students must enroll in the Engineering Sciences offering. No more than two of Engineering Sciences 6, 50, 51, and 53 can count toward concentration credit.*

Student Signature

_____ Date: _____

Associate Director of Undergraduate Studies

_____ Date: _____

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

Director of Undergraduate Studies

_____ Date: _____

Applied Mathematics

- AM 104 – Series Expansions & Complex Analysis
- AM 105 – Ordinary & Partial Differential Equations
- AM 108 – Nonlinear Dynamical Systems
- AM 111 – Intro to Scientific Computing
- AM 120 – Applied Linear Algebra and Big Data

Electronics

- ES 50 – Introduction to Electrical Engineering
- ES 54 – Electronics for Engineers
- ES 151 – Applied Electromagnetism
- ES 153 – Laboratory Electronics
- ES 152 AND CS 141

Mechanical Engineering Electives

Only if taken during Freshman or Sophomore years:

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

- AP 195 – Intro to Solid State Physics
- BE 110 - Physiological Systems Analysis
- Chemistry 160 – Quantum Chemistry
- ES 109 – Earth Resources and the Environment
- ES 51 – Computer Aided Machine Design
- ES 91r – Supervised Reading and Research (one semester only)
- ES 96 – Engineering Problem Solving & Design Project
- ES 128 - Computational Solid and Structural Mechanics
- ES 131 – Introduction to Physical Oceanography and Climate
- ES 132 - Introduction to Meteorology and Climate
- ES 151 – Applied Electromagnetism
- ES 156 - Signals and Systems
- ES 159 – Intro to Robotics
- ES 162 - Hydrology and Environmental Geomechanics
- ES 173 – Intro to Electronic & Photonic Devices
- ES 177 – Photonic & Electronic Device Laboratory
- Physics 143a – Quantum Mechanics 1