Plan of Study — Mechanical Engineering S.B. Concentration

Effective for students declaring after August 1, 2026 · AY 2026–2027

Open in Adobe Acrobat Reader (best dropdown support) or Preview to fill in, then save. Approved courses and prerequisites: page 2.

Name: _____ **Class:** _____

Email: _____ **Date:** _____

This Plan of Study is a: ☑ Declaration ☐ Revision

ME Core track: ☑ Mechanical Systems ☐ Thermal Systems

8-SEMESTER COURSE SCHEDULE (type directly in any cell to change a course)

Fall 1	Spring 1	Fall 2	Spring 2	Fall 3	Spring 3	Fall 4	Spring 4

type any course — dropdown of approved courses (page 2) — or pick “Other” and type a petitioned course

REQUIRED COURSES

	SELECTED COURSES — click any field to edit
Mathematics (sequence by placement)	Math 1a | Math 1b | Math 21a | Math 21b
Physics (2 courses)	PS 12a | PS 12b
Chemistry / Advanced Science (2)	LS 1a | PS 11
Computer Science (1 course)	AM 10
Electronics (1 course)	ECE 50
ME Core — 6 required (track checked above)	ES 51 | ES 120 | ES 181 | ES 123 | ES 125 | ES 192
of which materials — choose one	ES 192
Track Elective (1 — list on page 2)	ES 128
General Engineering Elective (1 — page 2)	ES 183
Engineering Design (2: prereq + ES 100HF)	ES 55 | ES 100HF

Advisor notes: _____

Required Signatures

No concentration course may be taken Pass/Fail or SAT/UNS.

Signing confirms the plan meets the ABET distribution requirements (4 mathematics, 4 basic science, 12 engineering).

Student _____ Date: _____

Concentration Advisor _____ Date: _____

Sign directly on this PDF — locally in a PDF reader, or via Harvard DocuSign / Adobe Sign for a binding, audit-trailed signature.

Approved Courses & Planning Reference

Reference only — fill in the form on page 1. AY 2026–2027 requirements; the SEAS handbook governs.

Mathematics (2–4 courses, by placement)

- Sequence: Math Ma/Mb, Math 1a, Math 1b, Math 21a, Math 21b.
- Start where your placement puts you; everything from that point through Math 21b is required.
- Math 22a/22b are accepted in place of Math 21a/21b.

Applied Mathematics & Statistics

- AM 105 — Ordinary & Partial Differential Equations (Spring): required if you start at Math 1b or later.
- Probability & Statistics (one course): required if you start at Math 21a or later — AM 101 (Fall), ECE 150 (Spring), or STAT 110.

Physics (2 courses)

- Physics A: PS 12a, Physics 15a, Physics 16, or AP 50a.
- Physics B: PS 12b, Physics 15b, or AP 50b.

Chemistry / Advanced Science (2 courses)

- Introductory: LS 1a, LPS A, PS 1, PS 10, PS 11, CHEM 10, Physics 15c.
- Upper-level: CHEM 160, PHYS 19, PHYS 125, PHYS 143a, PHYS 151, PHYS 153.
- Only ONE life-science intro (LS 1a or LPS A) may count toward the two.

Computer Science (1 course)

- AM 10 (Fall), CS 32 (Spring), CS 50 (Fall/Spring), or SCI 5 (Spring).

Electronics (1 course)

- ECE 50 (Spring) — the usual choice.
- Or ECE 152 (Fall) together with CS 1140; CS 1140 then counts as the general engineering elective.

ME Core — 6 required courses

- Mechanical Systems track: ES 51, ES 120, ES 181, ES 123, ES 125, plus one materials course.
- Thermal Systems track: ES 183, ES 181, ES 120, ES 123, ES 125, plus one materials course.
- Materials (choose ONE): ES 190 — Intro to Materials Science & Engineering (Spring); ES 192 — Materials Selection & Design (Fall).
- Effective August 1, 2026 the materials course is part of the core — it is no longer an elective.

Track Elective — 1 course (Mechanical Systems track)

- ES 128 — Computational Solid & Structural Mechanics (Fall)
- ECE 155 — Systems and Control (Fall)
- ECE 159 — Introduction to Robot Manipulation (Spring)
- ES 183 — Introduction to Heat Transfer (Spring)
- ES 231 — Energy Technology (Spring)
- ES 220 — Fluid Dynamics (Spring)
- ES 240 — Solid Mechanics (Fall)

Track Elective — 1 course (Thermal Systems track)

- ES 51 — Computer Aided Machine Design (verify live offering)
- ES 128 — Computational Solid & Structural Mechanics (Fall)
- ECE 155 — Systems and Control (Fall)
- ES 231 — Energy Technology (Spring)
- ES 220 — Fluid Dynamics (Spring)
- ES 240 — Solid Mechanics (Fall)

General Engineering Elective — 1 course

- Must be a genuine engineering course: ECE 50, ECE 141, ECE 151, ECE 152, ECE 155, ECE 173, ECE 177, ES 53, ES 111, ES 115, ES 121, ES 162, ES 227, ES 231, ESE 160, ESE 166, CS 51, CS 61, CS 1140, AP 195, BE 110, BE 124, BE 128.
- NOT eligible: AM 101, AM 105, STAT 110, ECE 150, CHEM 160, PHYS 19/125/143a/151/153 — these are math or science, not engineering.

Engineering Design — 2 courses

- ES 55 — Fundamentals of Design (SOPHOMORE year — Fall 2 or Spring 2)
- ES 96 — Engineering Problem Solving & Design (JUNIOR year — Fall 3 or Spring 3)
- ES 227 — Medical Device Design (JUNIOR year, Spring; equivalent to ES 55, requires ECE 50 or ES 51)
- Then ES 100HF — Engineering Design Projects (senior year, full year).

Rules that trip students up

- ABET distribution: at least 20 half-courses — 4 mathematics, 4 basic science, 12 engineering topics.
- Petitioned substitutions: an approved course may stand in for an elective or a science/other requirement. Pick “Other” in the dropdown, type the course, and record the approval in Advisor notes.
- No concentration course may be taken Pass/Fail or SAT/UNS.
- No more than three of ESE 6, ECE 50, ES 51, ES 53 may count toward the concentration.
- ME does not participate in joint or double concentrations.
- File a revision any time your plan changes — keep it current.

Prerequisite planning

Physics A = PS 12a / Physics 15a / AP 50a · Physics B = PS 12b / Physics 15b / AP 50b · Co: = may be a co-requisite

Course	Offered	Math	Physics / other
ES 51	Fall, Spring	—	—
ES 120	Spring	Math 21a, Co: Math 21b	Physics A
ES 123	Spring	Math 21a, Math 21b	Physics A
ES 125	Fall	Math 21a, Math 21b	Physics A
ES 181	Fall	—	Physics A
ES 183	Spring	Math 21a, Math 21b	Physics A, ES 181
ES 190	Spring	Math 21a, Math 21b	Physics A, Physics B
ES 192	Fall	—	—
ES 55	Fall, Spring	—	sophomore year
ES 96	Fall, Spring	—	junior year
ES 227	Spring	—	ECE 50 or ES 51, junior year
ES 100HF	Fall, Spring	—	ES 55 or ES 96 or ES 227, senior year, full year
ECE 50	Spring	—	—
ECE 152	Fall	Math 1a, Math 1b	Co: Physics B
ES 128	Fall	Math 21a, Math 21b	Physics A, ES 120
ECE 155	Fall	Math 21a, Math 21b	—
ECE 159	Spring	—	Physics A, rec. CS 50
ES 231	Spring	Math 21a, Math 21b	—