Stanford University ♦ School of Engineering

Electrical Engineering
2023–2024 Program Sheet

This document must satisfy all requirements listed at UGHB.stanford.edu.

Turn in final version of program sheet to Laura Krebs (lwuet72@stanford.edu) no later than one month prior to the last quarter of senior year.

Follow all requirements as stated for the year of the program sheet used.

Name: _____ SU ID#: _____
Email: _____ Phone: _____
Todays Date: _____ B.S. expected (e.g. Spring 2023): _____

Mathematics and Science Requirements (minimum 40 units)

Dept	Course	Title	SoE Transfer/AP Approval			Unit	Grade
			P if Transfer	SoE Initials	Date	Total	
Mathematics (minimum 28 units)							
~~MATH~~	~~19/20/21~~	Calculus (req'd; see note 1)					
~~MATH~~	~~51~~	Linear Algebra, Multivariable Calculus, and Modern Applications (req'd; see note 2)					
~~MATH~~	~~53~~	Differential Equations with Linear Algebra, Fourier Methods, and Modern Applications (req'd; see note 2)					
~~_____~~		One Add'l Math Class from CS 103, ENGR 108, MATH 113					
~~EE~~	~~178~~	Probabilistic Systems Analysis (see note 3)					
		Mathematics Unit Total (28 units min)					
Science (3 courses, minimum 12 units)							
PHYS		Mechanics course (~~PHYSICS 41~~ or PHYSICS 61)					
~~EE~~	~~65~~	Modern Physics for Engineers (req'd; see note 4)					
		Science elective(s); see UGHB website, Approved Courses page					
		Science Unit Total (minimum 12 units)					
		Mathematics and Science Unit Total (minimum 40 units)					

Technology in Society Requirement

(1 course, minimum 3-5 units; UGHB website, Approved Courses page for list; See note 5)

NOTES

* **All courses taken for the major must be taken for a letter grade,** if that option is offered by the instructor.
* **All courses listed on this form can be included under only one category. There is no double-counting.**
* Minimum Cumulative GPA of 2.0 required for all courses in Engineering Topics.
* Transfer and AP credits in Math, Science, Fundamentals, and Technology in Society must be approved by the SoE Dean's Office; see the Petitions page at ughb.stanford.edu for links and directions. Transfer credits in Depth and Disciplinary Area must be approved by the advisor.
* All courses on this form must be listed under only one category: No double counting.

(1) MATH 19/20/21 or equivalent (10 units AP BC, or transfer, and placement into MATH 51/CME 100) is acceptable. If 6-8 units AP or IB credit are used, must take Math 21 (21 may not be skipped using Math Diagnostic Placement results). AP must be approved by SoE; see **https://ughb.stanford.edu/transfers-ap-exceptions** for instructions.

(2) CME 100 and CME 102 can be substituted for MATH 51 and MATH 53. MATH 52 can be substituted for MATH 51. MATH 51 and MATH 53 are recommended, in part, for providing substantial early exposure to linear algebra.

(3) Students are strongly encouraged to take EE 178 to learn key EE topics, especially those specializing in the Info Systems and Science disciplinary area

(4) As an alternative to EE 65, students may petitionto substitute PHYSICS 71 or the combination of PHYSICS 45 and PHYSICS 70 (last offered Aut 2022)

(5) To fulfill the requirement a TiS course must be on the SoE Approved Courses list the year it is taken.

Engineering Topics (Fundamentals+Core+Disciplinary Area+Electives; minimum 57 units)

Dept	Course	Title	SoE Transfer/AP Approval			Unit	Grade
			P if Transfer	SoE Initials	Date	Total	
Engineering Fundamentals (2 courses, minimum 8 units)							
~~CS~~	~~106B or B+M~~	Programming Abstractions (req'd)					
~~ENGR~~	~~40M or 76~~	EE-related fundamental (see note 6)					
						Engineering Fundamentals Unit Total	

Core EE Courses* *(5 courses, minimum 18 units)*

~~EE~~	~~42~~	Introduction to Electromagnetics and Its Applications (see note 7)					
EE	100	The Electrical Engineering Profession (see note 8)					
EE	101A	Circuits I					
~~EE~~	~~102A~~	Signal Processing and Linear Systems I					
~~EE~~	~~108~~	Digital System Design					
						Core EE Courses Unit Total	

DEPTH IN DISCIPLINE

Disciplinary Area *(4 courses, 15 units min. 1-2 Req'd courses, 1 WIM/Design/Capstone, 2 electives from Discipl. Area)*

Circle one disciplinary area: (I) Physical Tech & Science (II) Info Sys & Science (III) Hardware & Software Systems

		Required Course					
		WIM/Design/Capstone Course (choose from any disciplinary area)					
		Disciplinary Area Elective					
		Disciplinary Area Elective					
						Disciplinary Area Unit Totals	

Electives *(minimum 16 units; see Note 9)*

						Elective Area Unit Total (minimum 16 units)	
						Mathematics and Science (minimum 43 units)	
						Engineering Topics (minimum 57 units)	

PROGRAM APPROVALS

ADVISOR Printed Name: _____ Date: _____

Signature: _____

DEPARTMENT Printed Name: Laura Krebs (lwuet72@stanford.edu) Date: _____

Signature: _____

School of Engineering (signature not required prior to graduation)

Signature: _____ Date: _____

* Students preparing for advanced graduate study or wanting add'l depth in the core are encouraged to take some disciplinary area req'ts (EE 101B, 102B, 180; CS 107E or CS 107) beyond those required ; these may be counted as Electives.

(6) Recommended: ENGR 40M (pref. before EE 101A) or ENGR 76 (pref. before EE 102A)

(7) Students specializing in Physical Technology and Science (PT & S) must take EE 42 or EE 142. Students not specializing in PT & S may petition to use either Physics 43 or Physics 81 (formerly 63) in place of EE 42. All students are strongly encouraged to take EE 42 or EE 142 to learn key EE topics, including transmission lines, waveguides, and antennas.

(8) Juniors and seniors may petition for a 200-level seminar in their disciplinary area.

(9) May be from the disciplinary areas; from the multidisciplinary elective areas; or any combination of disciplinary and multidisciplinary areas. May include up to two additional ENGR Fundamentals (not from CS or EE) and any letter graded EE courses. Freshman and Sophomore seminars and EE 191 do not count toward the 57 units. Students may have fewer elective units if they have more units in their disciplinary area.