

**Stanford University ♦ School of Engineering**  
**Computer Science**  
**Systems Track**  
**2023-2024 Program Sheet**

*Final version of program sheet is due to the department 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 #: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
 Today's Date: \_\_\_\_\_ Month/Yr B.S. expected: \_\_\_\_\_

**Mathematics and Science Requirement**

Dept	Course	Title	Transfer/AP Approval by SoE			Unit	Grade
			✓ if Transfer	SoE Initials	Date		
<b>Mathematics (26 units minimum)</b>							
MATH	19	Calculus (see note 1)					
MATH	20						
MATH	21						
CS	103	Mathematical Foundations of Computing					
CS	109	Introduction to Probability for Computer Scientists					
<i>Plus two electives (see note 2)</i>							
<i>Mathematics Unit Total (26 units minimum)</i>							
<b>Science (11 units minimum)</b>							
PHYS	41	Mechanics (or PHYS 21 or 61)					
PHYS	43	Electricity and Magnetism (or PHYS 23 or PHYS 81/63)					
		Elective (see note 3)					
			<i>Science Unit Total (11 units minimum)</i>				
<i>(37 units min. Math/Sci combined)</i>							
<b>Technology in Society Requirement</b> <i>(1 course req'd from TiS Approved list at <a href="https://ughb.stanford.edu">ughb.stanford.edu</a> the year taken; see note 7)</i>							
<b>Engineering Fundamentals (10 units minimum)</b>							
CS	106B	Programming Abstractions					
ENGR	40M -or- 76	An Intro to Making: What is EE? -OR- Information Science & Engr					
<i>Engineering Fundamentals Total (10 units minimum)</i>							

**NOTES**

- \* All courses listed on this form can be included under only one category. There is no double-counting.
  - \* All courses listed on this form must be taken for a letter grade (unless taken Spring 2019-20, and Aut-Sum 2020-21)
  - \* This printed form must be signed by the departmental representative (SSO), with changes petitioned (see UGHB, Petitions page) and initialed/dated by SSO.
  - \* Minimum Grade Point Average (GPA) for all courses in ENGR Fundamentals and CS Core, Depth, and Senior Project (combined) is 2.0.
  - \* Students without prior programming experience should first take CS106A. The major otherwise requires at most 95.
  - \* Transfer and AP credits in Math, Science, Fundamentals, & TiS must be approved by the SoE Dean's Office: <https://ughb.stanford.edu/transfers-ap-exceptions> in UGHB for approval process. Transfer credits in Computer Science Core, Depth and Senior Project must be approved by the Computer Science office.
  - \* Courses must be taken for the number of units on the Program Sheet. CS103, 106B, 107, 109, 111, and 161 must be taken for 5 units.
- (1) MATH 19/20/21 or equivalent (10 units AP BC, or transfer, with 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 \* Transfer note above.
- (2) Math electives: Math 51, 52, 53, 104, 107, 108, 109, 110, 113; CS 157, 205L; PHIL 151; CME 100, 102, 104; ENGR 108.  
 Restrictions: CS 157 + Phil 151 may not be combined to satisfy the electives requirement. Students taking both Math 51 & 52 may not count CME 100 as an elective. Students who take both Math 51 & CME 100 will receive only 8 units credit in the major due to overlapping material.
- (3) Any course of 3 or more units from the SoE Science List (see Courses page at [ughb.stanford.edu](https://ughb.stanford.edu)), PSYCH 30, or AP Chemistry may be used.

**CS Systems Track Program Sheet (continued)**

**Systems Track Core, Depth, and Senior Project (43 units minimum)***Be advised: no course may be listed twice on the sheet; no double-counting.*

Dept	Course	Title	Transfer/Deviation Approval by Dept			Unit	Grade
			✓ if Transfer	Dept Initials	Date		
<b>Core (15 units minimum)</b>							
CS	107 or 107E	Computer Organization and Systems					
CS	111	Operating Systems Principles					
CS	161	Design and Analysis of Algorithms					
<b>Depth; Track and Electives (25 units and seven courses minimum)</b>							
CS		One of: CS 112 or 140E (Track Requirement A)					
		One of: CS 143, EE 180 (Track Requirement B)					
CS		Track Requirement C (see note 4)					
CS		Track Requirement C (see note 4)					
		Elective (see note 5)					
		Elective (see note 5)					
		Elective (see note 5)					
		Optional Elective					
<b>Senior Project (1 course required)</b>							
CS		At least 3 units of 191, 191W, 194, 194H, 194W, 210B, or 294 (see note 7)					
<i>Computer Science Core, Depth and Senior Project Total (43 units minimum)</i>							

**Program Approvals***Departmental*

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

*School of Engineering (No action required-office use only)*

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**NOTES (continued from page 1)**

- (4) Track Requirement C: Two courses selected from the Track Requirement B list or the following - CS 144, 145, 149, 155, 190, 217, 240 or 240LX, 242, 243, 244, 245; EE 271, 282
- (5) Track Electives: At least three additional courses selected from the Track Requirement C list, the General CS Electives list (see note 6), or the following: CS 241, 295, 340R, 343D, 349D, 349H, 448I; EE 108, 382A, 382C, 384S  
 \*Students may replace one track elective with a course found at <https://www.cs.stanford.edu/bachelors-eligible-humanities-electives>\*
- (6) General CS Electives: CS 108, 112, 123, 124, 131, 140E, 142, 143, 144, 145, 147, 147L, 148, 149, 151, 154, 155, 157 (or PHIL 151), 163, 166, 168, 173A, 177, 190, 195 (max 4 units), 197, 197C, 205L, 206, 210A, 212, 217, 221, 223A, 224N, 224R, 224S, 224U, 224V, 224W, 225A, 227B, 228, 229, 229M, 230, 231A, 231N, 232, 233, 234, 235, 237A, 237B, 238, 240, 240LX, 242, 243, 244, 244B, 245, 246, 247 (any suffix), 248 (any suffix), CS249I, 250, 251, 252, 253, 254, 254B, 255, 256, 257, 259Q, 261, 263, 265, 269I, 269O, 269Q, 270, 271, 272, 273B, 273C, 274, 275, 276, 278, 279, 281, 330, 333, 336, 342, 348 (any suffix), 351, 368, 398, 448B; CME 108; EE 180, 267, 282, 364A, 374; MS&E 234
- (7) The WiM req't may be met by taking CS 181W or 182W as TiS, or by Senior Project course (CS 191W, 194W, or 210B only)