**Stanford University ♦ School of Engineering**
# Computer Science
**Unspecialized 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: _____  SUID #: _____

Phone: _____  Email: _____

Today's Date: _____  Month/Yr B.S. expected: _____

## Mathematics and Science Requirement

| Dept | Course | Title | ✓ if Transfer | SoE Initials | Date | Unit | Grade |
|------|--------|-------|:---:|---|---|---|---|
| | | | | **Transfer/AP Approval by SoE** | | | |
| *Mathematics (26 units minimum)* | | | | | | | |
| MATH | 19 | Calculus (see note 1) | | | | | |
| MATH | 20 | | | | | | |
| MATH | 21 | | | | | | |
| CS | 103 | Mathematical Foundations of Computing | | | | | |
| CS | 109 | Introduction to Probability for Computer Scientists | | | | | |
| *Plus two electives (see note 2)* | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | *Mathematics Unit Total (26 units minimum)* | | | | |
| *Science (11 units minimum)* | | | | | | | |
| PHYS | 41 | Mechanics (or PHYS 21 or PHYS 61) | | | | | |
| PHYS | 43 | Electricity and Magnetism (or PHYS 23 or PHYS 81/63) | | | | | |
| | | Elective (see note 3) | | | | | |
| | | | *Science Unit Total (11 units minimum)* | | | | |
| | | | *(37 units min. Math/Sci combined)* | | | | |

**Technology in Society Requirement** *(1 course req'd from TiS Approved list at ughb.stanford.edu the year taken; see note 8)*

| | | | | | | | |
|------|--------|-------|---|---|---|---|---|
| | | | | | | | |

**Engineering Fundamentals** *(10 units minimum)*

| Dept | Course | Title | | | | Unit | Grade |
|------|--------|-------|---|---|---|---|---|
| CS | 106B | Programming Abstractions | | | | | |
| ENGR | 40M or 76 | An Intro to Making: What is EE? -*OR*- Information Science & Engr | | | | | |
| | | | *Engineering Fundamentals Total (10 units minimum)* | | | | |

## 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 units.
* 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 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), PSYCH 30, or AP Chemistry may be used.

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

**Unspecialized 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 | ✓ if Transfer | Dept Initials | Date | Unit | Grade |
|------|--------|-------|---------------|---------------|------|------|-------|
| | | | Transfer/Deviation Approval by Dept | | | | |
| **Core (15 units minimum)** | | | | | | | |
| CS | 107 or 107E | Computer Organization and Systems | | | | | |
| CS | 111 | Operating Systems Principles | | | | | |
| CS | 161 | Design and Analysis of Algorithms | | | | | |
| **Depth; Track and Electives (25 units and seven courses minimum)** | | | | | | | |
| CS | 154 | Intro Automata and Complexity Theory (Track Requirement A) | | | | | |
| CS | | One of CS 112, 140E, or 143 (Track Requirement B) | | | | | |
| | | Track Requirement C (see note 4) | | | | | |
| CS | | Track Requirement D (see note 5) | | | | | |
| CS | | Track Requirement E (see note 6) | | | | | |
| | | Elective (see note 7) | | | | | |
| | | Elective (see note 7) | | | | | |
| | | Optional Elective (see note 7) | | | | | |
| **Senior Project (1 course required)** | | | | | | | |
| CS | | At least 3 units of 191, 191W, 194, 194H, 194W, 210B, or 294 *(see note 8)* | | | | | |

Computer Science Core, Depth and Senior Project Total *(43 units minimum)*

## 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: One additional course from the Track Requirement B list or the following - CS 144, 155, 190, 242, 244; EE 180

( 5 )  Track Requirement D: Any one of CS 221, 223A, 228, 229, 231A

( 6 )  Track Requirement E: Any one of CS 145, 147, 148, 235, 248A

( 7 )  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

( 8 )  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)