Stanford University • School of Engineering
Computer Science
Theory Track
2021-2022 Program Sheet

*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 (Delete courses and units not taken)

<table>
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<tr>
<th>Dept</th>
<th>Course</th>
<th>Title</th>
<th>Transfer/AP Approval by SoE</th>
<th>Unit</th>
<th>Grade</th>
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<td>✅ SoE Initials Date</td>
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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 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)

CS 106 Programming Abstractions (B or X)
ENGR 40M An Intro to Making: What is EE?

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 except courses taken Spring 2019-20, and Autumn 2020-21 through Summer 2020-21.
* 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, so even with CS106A, the BSCS major respects the university's 100-unit limit.
* Transfer and AP credits in Math, Science, Fundamentals, & TiS must be approved by the SoE Dean's Office. Transfer credits in Computer Science Core, Depth, and Senior Project must be approved by the Computer Science undergraduate program office.
* Courses must be taken for the number of units on the Program Sheet. CS103, 106/B/X, 107, 109, 110, and 161 must be taken for 5 units.
1. Up to 10 units AP credit (with placement into MATH 51/CME 100) may be used, as long as at least 26 math units are taken. AP must be approved by SoE.
2. Math electives: Math 51, 52, 53, 104, 107, 108, 109, 110, 113; CS 157, 205L; PHIL 151; CME 100, 102, 104; ENGR 108 (or CME 103 or EE 103). Restrictions: CS 157+ Phil 151 may not be used in combination to satisfy the Math electives requirement. Students who have taken both Math 51 & 52 may not count CME 100 as an elective.
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. All AP credit must be approved by the SoE; see AP page https://ughb.stanford.edu/transfers-ap-exceptions in UGHB for approval process.
### CS Theory Track Program Sheet (continued)

**Theory Track Core, Depth, and Senior Project** *(43 units minimum)*

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**Core (15 units minimum)**
- CS 107 or 107E: Computer Organization and Systems
- CS 110 or 111: Principles of Computer Systems
- 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: Track Requirement B (see note 4)
- CS: Track Requirement C (see note 5)
- Elective (see note 6)
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- Elective (see note 6)
- Optional Elective

**Senior Project (1 course required)**
- CS: At least 3 units of 191, 191W, 194, 194H, 194W, 210B, 294 or 294W (see note 8)

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

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**Program Approvals**

**Departmental**
- Printed Name: ____________________________ Date: ________________
- Signature: ________________________________

**School of Engineering (No action required-office use only)**
- Printed Name: ____________________________ Date: ________________
- Signature: ________________________________

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**NOTES (continued from page 1)**

1. **Track Requirement B**: Any one of CS 168, 255, 261, 265, 268
2. **Track Requirement C**: Two courses selected from the Track Requirement B list or the following - CS 143, 151, 155, 157 (or PHIL 151), 163, 166, 205L, 228, 233, 235, 236, 242, 250, 251, 252, 254, 259 (with permission of undergraduate advisor), 263, 269I, 351, 353, 354, 355, 357, 358, 359 (with permission of undergraduate advisor), 369 (with permission of undergraduate advisor), MS&E 310
3. **Track Electives**: At least three additional courses selected from the Track Requirement B list, the Track Requirement C list, the General CS Electives list (see note 7), or the following - CS 254B, 269G; CME 302, 305; Phil 152
   *Students may replace one track elective with a course found at: http://www.cs.stanford.edu/humanities*
5. **Senior Project**: At least 3 units of 191W, 194W, 210B, or 294W only.

*The WIM req't may be met by taking CS 181W or 182W as a TiS course or through the Senior Project course (191W, 194W, 210B, or 294W only).*