Stanford University • School of Engineering
Computer Science
Computer Engineering Track
2022-2023 Program Sheet

*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 (Delete courses and units not taken)

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

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 61)
- PHYS 43 Electricity and Magnetism (or PHYS 23 or 63)

Elective (see note 3)

Science Unit Total (11 units minimum)

Technology in Society Requirement (1 course req’d from Approved TIS list at ughb.stanford.edu the year taken; see note 6)

Engineering Fundamentals (10 units minimum)

- CS 106B Programming Abstractions
- 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
* This printed form must be signed by the departmental representative. Changes must be petitioned (see UGHB pg 27-29) and initialed in ink.
* 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 adheres to 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, 106B/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. 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 and 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.
Computer Engineering Track Core, Depth, and Senior Project (43 units minimum)

Be advised: no course may be listed twice on the sheet; no double-counting.

Core (15 units minimum)

<table>
<thead>
<tr>
<th>Dept</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>107 or 107E</td>
<td>Computer Organization and Systems</td>
</tr>
<tr>
<td>CS</td>
<td>110 or 111</td>
<td>Operating Systems Principles</td>
</tr>
<tr>
<td>CS</td>
<td>161</td>
<td>Design and Analysis of Algorithms</td>
</tr>
</tbody>
</table>

Depth; Track and Electives (25 units and 7 courses minimum)

<table>
<thead>
<tr>
<th>Dept</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>108</td>
<td>Digital System Design (Track Requirement A)</td>
</tr>
<tr>
<td>EE</td>
<td>180</td>
<td>Digital Systems Architecture (Track Requirement A)</td>
</tr>
<tr>
<td>EE</td>
<td>Track Requirement B (see note 4)</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>Track Requirement B (see note 4)</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>Track Requirement C (see note 5)</td>
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</tr>
<tr>
<td>EE</td>
<td>Track Requirement C (see note 5)</td>
<td></td>
</tr>
</tbody>
</table>

Senior Project (1 course required)

CS At least 3 units of 191, 191W, 194, 194H, 194W, 210B, 294 or 294W (see note 6)

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 B: Two courses selected from the following: EE 101A, 101B, 102A, 102B

(5) Track Requirement C: Satisfy the requirements of one of the following concentrations:

- Digital Systems Concentration: EE 109, 271
  Plus one of: CS112, CS112E, CS140, or CS140E. *Note that CS112 can only be taken by those taking CS111, and
  CS140 can only be taken by those taking CS110

- Robotics and Mechatronics Concentration: CS 205L, 223A; ME 210 or CS225A

- Networking Concentration: CS112/112E/140/140E (same restrictions as above), 144
  plus one of: CS 240 or CS240LX, 241, 244, 244B; EE 179

(6) The WIM requirement may be met by taking CS 181W or 182W as a Technology in Society course or through the Senior Project course (191W, 194W, 210B, or 294W only).