

**Stanford University ♦ School of Engineering**  
**Computer Science**  
**Unspecialized Track**  
**2019-2020 Program Sheet**

*Final version of program sheet 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** (*Delete courses and units not taken*)

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 or 41E	Mechanics (or PHYS 21 or PHYS 61)					
PHYS	43	Electricity and Magnetism (or PHYS 23 or PHYS 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; must be on TiS Approved list at <a href="http://ughb.stanford.edu">ughb.stanford.edu</a> the year taken; see note 10 on WIM</i> )							
<b>Engineering Fundamentals (13 units minimum)</b>							
CS	106	Programming Abstractions (B or X)					
ENGR	40	Introductory Electronics (ENGR 40A and 40M also allowed; see note 4)					
		Elective: May be an ENGR Fundamentals or an additional CS Depth course (see note 5)					
<i>Engineering Fundamentals Total (13 units minimum)</i>							

**NOTES**

- \* **All courses listed on this form must be taken for a letter grade (if offered) and can be included under only one category.**
- \* This printed form must be signed by the departmental representative. Changes must be petitioned (see UGHB website, Petitions page) and initialed in
- \* Minimum Grade Point Average (GPA) for all courses in ENGR Fundamentals and CS Core, Depth, and Senior Project (combined) is 2.0.
- \* 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) Math 19/20/21 or Math 41/42 or AP credit may be used, as long as at least 26 math units are taken. AP Calculus 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, 103 (or EE 103), 104.  
 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 Approved Courses page at [ughb.stanford.edu](http://ughb.stanford.edu)), PSYCH 30, or AP Chemistry.
- (4) Students who take ENGR 40A or 40M for fewer than 5 units are required to take 1-2 additional units of ENGR Fundamentals (13 units minimum), or 1-2 additional units of Depth (26-27 units minimum for track and elective courses).
- (5) See Approved Courses page at [ughb.stanford.edu](http://ughb.stanford.edu) for approved ENGR Fundamentals list. May not be any CS 106.

## 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	Transfer/Deviation Approval by Dept			Unit	Grade
			✓ if Transfer	Dept Initials	Date		
<b>Core (15 units minimum)</b>							
CS	107or107E	Computer Organization and Systems					
CS	110	Principles of Computer Systems					
CS	161	Design and Analysis of Algorithms					
<b>Depth; Track and Electives (25 units and seven courses minimum)</b>							
CS	154	Intro Automata and Complexity Theory (Track Requirement A)					
CS		One of CS 140 or 140E, 143 (Track Requirement B)					
		Track Requirement C (see note 6)					
CS		Track Requirement D (see note 7)					
CS		Track Requirement E (see note 8)					
		Elective (see note 9)					
		Elective (see note 9)					
		Optional Elective (see note 9)					
<b>Senior Project (1 course required)</b>							
CS		At least 3 units of 191, 191W, 194, 194H, 194W, 210B, 294 or 294W (see note 10)					
<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)

- (6) Track Requirement C: One additional course from the Track Requirement B list or the following - CS 144, 155, 190, 242, 244; EE 180
- (7) Track Requirement D: Any one of CS 221, 223A, 228, 229, 231A
- (8) Track Requirement E: Any one of CS 145, 147, 148, 235, 248
- (9) At least two courses from the General CS Electives list: CS 108, 124, 131, 140 (or 140E), 142, 143, 144, 145, 146, 147, 148, 149, 151, 155, 157 (or PHIL 151), 166, 168, 190, 195 (4 units maximum) 197, 205L, 210A, 217, 221, 223A, 224N, 224S, 224U, 224W, 225A, 227B, 228, 229, 229T, 230, 231A, 231N, 232, 233, 234, 235, 236, 237A, 237B, 238, 240, 242, 243, 244, 244B, 245, 246, 247, 248, 251, 252, 254, 254B, 255, 261, 264, 265, 269I, 269Q, 270, 272, 273A, 273B, 274, 276, 278, 279, 330, 336, 348B, 348C, 348E, 348K, 352, 353, 369L, 398; CME 108; EE 180, 282, 364A
- (10) 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).