

Stanford University ♦ School of Engineering
Computer Science
Graphics Track
2018-2019 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 BS 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		
<i>Mathematics (26 units minimum)</i>							
MATH		Calculus (see note 1)					
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>							

Science (*11 units minimum*)

PHYS	41 or 41E	Mechanics (or PHYS 21 or 61)					
PHYS	43	Electricity and Magnetism (or PHYS 23 or 63)					
		Elective (see note 3)					
<i>Science Unit Total (11 units minimum)</i>							
<i>(37 units min. Math/Sci combined)</i>							

Technology in Society Requirement (*1 course req'd; must be on Approved list in UGHB Fig. 4-3 the year taken; see note 10*)

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Engineering Fundamentals (*13 units minimum*)

CS	106	Programming Abstractions (B or X)					
ENGR	40M or 40A	Introductory Electronics (ENGR 40 also allowed; see note 4)					
		Elective: May be an ENGR Fundamentals or an add'l 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 in only one category.**
 - * This printed form must be signed by the department representative. Changes must be petitioned (see ughb.stanford.edu/petitions) 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.
 - * 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, & Senior Project must be approved by the CS undergraduate program office.
 - * Courses must be taken for the higher number of units offered. CS 103, 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, 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 (Fig. 4-2 in the UGHB), Psych 30, or AP Chemistry may be used.
 - (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 Fig. 4-4 in the UGHB for approved ENGR Fundamentals list. May not be any CS 106.

CS Graphics Track Program Sheet (continued)

CS Graphics Track Core, Depth, and Senior Project (43 units minimum)

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

Dept	Course	Title	Transfer/Deviation Approval by Dept			Unit	Grade
			✓ if Transfer	Dept Initials	Date		
Core (15 units minimum)							
CS	107 or 107E	Computer Organization and Systems					
CS	110	Principles of Computer Systems					
CS	161	Design and Analysis of Algorithms					
Depth; Track and Electives (25 units and seven courses minimum)							
CS	148	Introduction to Computer Graphics (Track Requirement A)					
CS	248	Three-Dimensional Computer Graphics (Track Requirement A)					
		Track Requirement B (see note 6)					
CS		Track Requirement C (see note 7)					
CS		Track Requirement C (see note 7)					
		Elective (see note 8)					
		Elective (see note 8)					
		Optional Elective (see note 9)					
Senior Project (1 course required)							
CS		At least 3 units of 191, 191W, 194, 194H, 194W, 210B, 294 or 294W (see note 10)					

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)

- (6) Track Requirement B: Any one of CS 205L; CME 104, 108; MATH 52, 113. (CS 205L is strongly recommended as a preferred choice.)
Note that students taking CME 104 are also required to take its prerequisite course, CME 102.)
- (7) Track Requirement C: Any two of CS 131 or 231A, 146, 233, 268, 348A, 348B, 348C, 348K, 448
- (8) Track Electives: At least two add'l courses selected from the Track Requirement B list, C list, General CS Electives list (see note 9), or the following: ARTSTUDI 160, 170, 179; CME 302, 306; EE 168, 262, 264, 278, 368; ME 101; PSYCH 30, 221
- (9) General CS Electives: CS 108, 124, 131, 140 or 140E, 141, 142, 143, 144, 145, 147, 149, 151, 154, 155, 157 (or PHIL 151), 166, 168, 190, 195 (4 units maximum), 205B, 205L, 210A, 217, 221, 223A, 224N, 224S, 224U, 224W, 225A, 227B, 228, 229, 229T, 230, 231A, 231B, 231M, 231N, 232, 233, 234, 236, 238, 240, 242, 243, 244, 244B, 245, 246, 247, 251, 252, 254, 255, 261, 262, 263, 264, 265, 266, 267, 269I, 270, 272, 273A, 273B, 274, 276, 278, 279, 348B, 348C, 352, 369L; CME 108; EE 180, 282, 364A
- (10) WIM requirement: may be met by taking CS 181W as a Technology in Society course or the Senior Project course (191W, 194W, 210B, or 294W only).