

**Stanford University ♦ School of Engineering**  
**Computer Science**  
**Artificial Intelligence Track**  
**2017-2018 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		Calculus (see note 1)					
CS	103	Mathematical Foundations of Computing					
CS	109	Introduction to Probability for Computer Scientists					
<b>Plus two electives (see note 2)</b>							
<i>Mathematics Unit Total (26 units minimum)</i>							
<b>Science (11 units minimum)</b>							
PHYS	41	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>							
<b>Technology in Society Requirement</b> ( <i>1 course req'd; course must be on Approved list in UGHB Fig. 4-3 the year taken; see note 10</i> )							
<b>Engineering Fundamentals (13 units minimum)</b>							
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 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 Petitions page at [ughb.stanford.edu](http://ughb.stanford.edu)) 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 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. 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, 104, 108, 109, 110, 113; CS 157, 205A; PHIL 151; CME 100, 102, 103 (or EE103), 104. Completion of Math 52 & 53 will (together) count as one Math elective. 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. 3-4 in the UGHB for approved ENGR Fundamentals list. May not be any CS 106.

## CS Artificial Intelligence Track Program Sheet (continued)

### AI Track Core, Depth, and Senior Project (43 units minimum)

*Be advised: no course may be listed twice; 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	107 or 107E	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	221	AI: Principles and Techniques (Track Requirement A)					
CS		Track Requirement B (see note 6)					
CS		Track Requirement B (see note 6)					
		Track Requirement C (see note 7)					
		Elective (see note 8)					
		Elective (see note 8)					
		Elective (see note 8)					
		Optional Elective					
<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 B: Two courses, each from a different area:  
 Area I) AI Methods [CS 228, 229, 234, 238]; Area II) Natural Language Processing: [CS 124, 224N, 224S, 224U];  
 Area III) Vision: [CS131, 231A, 231N]; Area IV) Robotics: [223A]
- (7) Track Requirement C: One additional course from the Track Requirement B list, or from the following:  
 AI Methods: [157, 205A, Stats 315A, Stats 315B]; Vision: [231B, 231M, 331A];  
 Comp Bio: [262, 279, 371, 374]; Information and the Web: [276, 224W]; Other: [227B, 277, 379]  
 Robotics and Control: [327A, 329 (with advisor approval), ENGR 205, EE 209, MS&E 251, MS&E 351];
- (8) Track Electives: At least three add'l courses selected from the Track Req't B list, C list, the General CS Electives list (see Note 9) or the following: CS 238, 275, 326, CS334A or EE 364A; CS 428; EE 278, EE 364B; ECON 286; MS&E 252, 352, 355; PHIL 152; PSYCH 202, 204A, 204B, 209; STATS 200, 202, 205
- (9) General CS Electives: CS 108, 124, 131, 140 or 140E, 142, 143, 144, 145, 147, 148, 149, 154, 155, 157 (or PHIL 151), 164, 166, 167, 168, 190, 205A, 205B, 210A, 223A, 224N, 224S, 224U, 224W, 225A, 227B, 228, 229, 229T, 231A, 231B, 231M, 231N, 232, 233, 234, 238, 240, 240H, 242, 243, 244, 244B, 245, 246, 247, 248, 249A, 251, 254, 255, 261, 262, 263, 264, 265, 266, 267, 269I, 270, 272, 273A, 273B, 274, 276, 279, 348B, 348C, 352; CME 108; EE 180, 282, 364A
- (10) The WIM requirement may be met by taking CS 181W as a Technology in Society course or through the Senior Project course (CS 191W, 194W, 210B, or 294W only).