

**Stanford University ♦ School of Engineering**  
**Computer Science**  
**Human-Computer Interaction Track**  
**2023-2024 Program Sheet**

*Final version of program sheet is due to the department no later than one month prior to the last quarter of senior year.*

Name: \_\_\_\_\_ SUID #: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
 Today's Date: \_\_\_\_\_ Month/Yr B.S. expected: \_\_\_\_\_

**Mathematics and Science Requirement**

Dept	Course	Title	Transfer/AP Approval by SoE			Unit	Grade
			✓ if Transfer	SoE Initials	Date		
<i>Mathematics (26 units minimum)</i>							
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>							
<i>Science (11 units minimum)</i>							
PHYS	41	Mechanics (or PHYS 21 or 61)					
PHYS	43	Electricity and Magnetism (or PHYS 23 or PHYS 81/63)					
		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 from Approved TiS list at <a href="https://ughb.stanford.edu">ughb.stanford.edu</a> the year taken; see note 8)</i>							
<b>Engineering Fundamentals</b> <i>(10 units minimum)</i>							
CS	106B	Programming Abstractions					
ENGR	40M or 76	An Intro to Making: What is EE? -OR- Information Science+ENGR					
<i>Engineering Fundamentals Total (10 units minimum)</i>							

**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 (unless taken Spring 2019-20, and Aut-Sum 2020-21)
- \* This printed form must be signed by the departmental representative (SSO), with changes petitioned (see UGHB, Petitions page) and initialed/dated by SSO.
- \* Minimum Grade Point Average (GPA) for all courses in Engineering Funds 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.
- \* Transfer and AP credits in Math, Science, Fundamentals, & TiS must be approved by the SoE Dean's Office: <https://ughb.stanford.edu/transfers-ap-exceptions> in UGHB for approval process. Transfer credits in Computer Science Core, Depth and Senior Project must be approved by the Computer Science office.
- \* Courses must be taken for the number of units on the Program Sheet. CS 103, 106B, 107, 109, 111 and 161 must be taken for 5 units.
- (1) MATH 19/20/21 or equivalent (10 units AP BC, or transfer, with placement into MATH 51/CME 100) is acceptable. If 6-8 units AP or IB credit are used, must take Math 21 (21 may not be skipped using Math Diagnostic Placement results). AP must be approved by SoE; see \* Transfer note above.
- (2) Math electives: Math 51, 52, 53, 104, 107, 108, 109, 110, 113; CS 157, 205L; PHIL 151; CME 100, 102, 104; ENGR 108.  
 Restrictions: CS 157 + Phil 151 may not be combined to satisfy the electives requirement. Students taking both Math 51 & 52 may not count CME 100 as an elective. Students who take both Math 51 & CME 100 will receive only 8 units credit in the major due to overlapping material.
- (3) Any course of 3 or more units from the SoE Science List (see Courses page at [ughb.stanford.edu](https://ughb.stanford.edu)), PSYCH 30, or AP Chemistry may be used.

## CS HCI Track Program Sheet (continued)

### Human-Computer Interaction 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	107 or 107E	Computer Organization and Systems					
CS	111	Operating Systems Principles					
CS	161	Design and Analysis of Algorithms					
<b>Depth; Track and Electives (25 units and seven courses minimum) see note 6</b>							
CS	147	Introduction to HCI Design (Track Requirement A)					
CS	247	HCI Design Studio (Track Requirement A, any suffix)					
CS	347	HCI: Foundations and Frontiers (Track Requirement A)					
CS	142 or 147L	Web Applications (Track Requirement B)					
		HCI Mezzanine (Track Requirement C, see note 5)					
		Elective: select from note 5 or note 6					
		Elective: select from note 5 or note 6 or note 7					
		Optional Elective: select from note 6 or note 7					
<b>Senior Project (1 course required)</b>			<i>Total depth units (25 minimum)</i>				
CS		At least 3 units of 191, 191W, 194, 194H, 194W, 210B, or 294 (see note 8)					
<i>Computer Science Core, Depth and Senior Project Total (43 units minimum)</i>							

#### HCI Preparation Outside of the CS Department

HCI is an interdisciplinary field. As you fulfill your WAYS requirements at Stanford, the HCI faculty suggest you choose WAYS courses that build competency in the non-CS HCI disciplines. Common paths include behavioral science (e.g., Psychology, and media psychology courses in Communications) and design (e.g., d.school, Product Design), but HCI also intersects with fields such as Art Practice, STS, MS&E, Electrical Engineering, Education, and Music.

#### 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) Some HCI project courses are limited enrollment. Be careful not to create a degree plan that depends on a limited-enrollment course.
- (5) HCI Mezzanine: HCI Mezzanine courses denote upper-division HCI courses that cover large bodies of knowledge in HCI in depth: CS 177, 278, 448B
- (6) Track Elective: Any one of CS 177, 194H, 206, 210A, 247 (any suffix not satisfying Track Req A), 377 (any suffix for three or more units)
- (7) General CS Electives: CS 108, 112, 123, 124, 131, 140E, 142, 143, 144, 145, 147, 147L, 148, 149, 151, 154, 155, 157 (or PHIL 151), 163, 166, 168, 173A, 177, 190, 195 (max 4 units), 197, 197C, 205L, 206, 210A, 212, 217, 221, 223A, 224N, 224R, 224S, 224U, 224V, 224W, 225A, 227B, 228, 229, 229M, 230, 231A, 231N, 232, 233, 234, 235, 237A, 237B, 238, 240, 240LX, 242, 243, 244, 244B, 245, 246, 247 (any suffix), 248 (any suffix), CS249I, 250, 251, 252, 253, 254, 254B, 255, 256, 257, 259Q, 261, 263, 265, 269I, 269Q, 269Q, 270, 271, 272, 273B, 273C, 274, 275, 276, 278, 279, 281, 330, 333, 334A, 336, 342, 348 (any suffix), 351, 368, 398, 448B; CME 108; EE 180, 267, 282, 364A, 374; MS&E 234  
 \*Students may replace one track elective with a course found at <https://www.cs.stanford.edu/bachelors-eligible-humanities-electives>\*
- (8) The WIM req't may be met by taking CS 181W or 182W as TiS, or by Senior Project course (CS 191W, 194W, or 210B only)