

**Stanford University ♦ School of Engineering**  
**Computer Science**  
**Biocomputation Track**  
**2016-2017 Program Sheet**

*Final version of program sheet due to the department 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/YrB.S. expected: \_\_\_\_\_

**Mathematics and Science Requirement**

Dept	Course	Title	Transfer/AP Approval by SoE		Unit	Grade
			✓ if Transfer	SoE Initials      Date		
<i>Mathematics (23 units minimum)</i>						
MATH	19	Calculus (see note 1)			3	
MATH	20	Calculus			3	
MATH	21	Calculus			4	
CS	103	Mathematical Foundations of Computing			5	
CS	109	Introduction to Probability for Computer Scientists			5	
STAT		One of: Stat 141, 203, 205, 215				
<i>Mathematics Unit Total (23 units minimum)</i>						

*Science (22 units minimum)*

PHYS	41	Mechanics			4	
CHEM	31A/B or X	Chemical Principles			5 or 10	
CHEM	33	Structure and Reactivity			5	
BIO or	41, 42 or	Principles of Biology or			10	
HUMBIO	2A,3A,4A	Genetics, Evolution & Ecology/Cell & Dev Biology/The Human Organism			or 15	
<i>Science Unit Total (24 units minimum)</i>						
<i>(47 units min. Math/Sci combined)</i>						

**Technology in Society Requirement (1 course required; see UGHB Figure 3-3 for approved list; see note 7)**

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**Engineering Fundamentals (8 units minimum)**

CS	106	Programming Methodology (B or X)			5	
		Elective (see note 2; CS 106A, B or X not allowed)				
<i>Engineering Fundamentals Total (8 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 departmental representative. Changes must be petitioned (see UGHB pg 27-29) and initialed in ink.
  - \* Minimum Grade Point Average (GPA) for all courses in Engineering Fundamentals and Computer Science Depth (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 Depth 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 41, 42 may be taken instead of Math 19, 20, 21 as long as at least 24 math units are taken.
- (2) One course required; may not be CS 106A, B or X. See Engineering Fundamentals Fig. 3-4 in the UGHB for approved list.

## CS Biocomputation Track Program Sheet (continued)

### CS Biocomputation Track Core, Depth, and Senior Project (39 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
			Dept Initials	Date		
<b>Core (15 units minimum)</b>			✓ if Transfer			
CS	107 or 107E	Computer Organization and Systems			5	
CS	110	Principles of Computer Systems			5	
CS	161	Design and Analysis of Algorithms			5	
<b>Depth (21 Units minimum)</b>						
CS		One of: CS 221, 228, 229, 231A				
CS		One of: CS 262, 270, 273A, 274, 275, 279				
CS		One of (if not selected above) CS 221, 228, 229, 231A 262, 270, 273A, 274, 275, 279, 124, 145, 147, 148, 248				
		Restricted Elective (see note 3)				
		Restricted Elective (see note 4)				
		Restricted Elective (see note 5)				
		Restricted Elective (see note 6)				
<b>Senior Project (1 course required)</b>						
CS		At least 3 units of 191, 191W, 194, 194H, 194W, 210B, 294 or 294W (see note 7)			3	
<i>Computer Science Core and Depth Total (39 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)

- (3) One course selected from: CS 108, 124, 131, 140, 142, 143, 144, 145, 147, 148, 149, 154, 155, 157 (or PHIL 151), 164, 166, 167, 168, 190, 205A, 205B, 210A, 221, 223A, 224N, 224S, 224U, 224W, 225A, 227B, 228, 229, 229T, 231A, 231B, 231M, 231N, 232, 233, 240, 240H, 242, 243, 244, 244B, 245, 246, 247, 248, 249A, 251, 254, 255, 261, 262, 263, 264, 265, 266, 267, 270, 272, 273A, 273B, 274, 275, 276, 279, 348B, 348C, 371, 374; CME 108; EE180, 263, 282, 364A; BioE 101; MS&E 152, 252; Stats 206, 315A, 315B; BMI 231, 260; GENE 211
- (4) One course selected from: CS 145, 147, 221, 228, 229, 262, 270, 273A, 273B, 274, 275, 279, 371, 374; EE 263, 364A; MS&E 152, 252; Stats 206, 315A, 315B; BMI 231, 260; GENE 211
- (5) One course selected from footnote 4 or BIOE 222A, 222B; ChemEng 150, 174; AppPhys 294; Bio 104, 118, 129A, 129B, 188, 189, 214, 217, 230; Chem 135, 171; BIOC 218, 241; Sbio 228
- (6) One course selected from: BioE 220, 222A, 222B; ChemEng 150, 174; CS 262, 274, 279, 371, 374; ME 281; AppPhys 294; Bio 104, 112, 118, 129A, 129B, 158, 183, 188, 189, 214, 217, 230; Chem 135, 171; BIOC 218, 241; Dbio 210; GENE 211; Sbio 228; Surg 101
- (7) The WIM requirement may be met by taking CS 181W as a Technology in Society course or through the Senior Project course (191W, 194W, 210B, or 294W only).