

# DEPARTMENT OF COMPUTER SCIENCE

## MSCS Program Sheet (2018-19)

### Theoretical Computer Science Specialization: Single Depth

Name: \_\_\_\_\_ Adviser: \_\_\_\_\_ Date: \_\_\_\_\_

Student ID#: \_\_\_\_\_ Email: \_\_\_\_\_ Proposed date for degree conferral: \_\_\_\_\_ HCP? \_\_\_\_\_ Coterm? \_\_\_\_\_

#### GENERAL INSTRUCTIONS

Before the end of your first quarter, complete a program sheet by filling in the number, name and units of each course you intend to take for your degree. Program sheets, as well as foundation course waiver forms, may be submitted electronically on the Gates Information Network at <http://gin.stanford.edu/> using your CS ID and password (click on the 'Dashboard' link). See <http://cs.stanford.edu/degrees/mscs/programsheets/psguide1819.pdf> for detailed instructions.

#### FOUNDATIONS REQUIREMENT

You must satisfy the requirements listed in each of the following areas; all courses taken elsewhere must be approved by your adviser on a foundation course waiver form. Do not enter anything in the "Units" column for courses taken elsewhere.

Note: If you are amending an old program sheet, enter "on file" in the approval column for courses that have already been approved.

| Required:  | Equivalent elsewhere (course numbers/titles/institution) | Approval | Grade | Units |
|--|--|----------|-------|-------|
| Logic, Automata & Complexity (CS103)             |  |          |       |       |
| Probability (CS109, Stat116, CME106, or MS&E220) |  |          |       |       |
| Algorithmic Analysis (CS161)                     |  |          |       |       |
| Computer Organ & Sys (CS107 or 107E)             |  |          |       |       |
| Principles of Computer Systems (CS110)           |  |          |       |       |

**TOTAL UNITS USED TO SATISFY FOUNDATIONS REQUIREMENT** (May not exceed **10** units.)

#### SIGNIFICANT IMPLEMENTATION REQUIREMENT

At least one course in your MS program should be designated as satisfying the "Significant Implementation Requirement". Note that this course will also be used to satisfy some other requirement (i.e., Breadth, Depth, or Elective). This requirement ensures that you have taken part in some form of substantial software development as part of the MSCS program. Letter grade only.

| Course Number: | Title: | Grade |
|----------------|--------|-------|
|                |        |       |

***Courses that may be used to satisfy the significant implementation requirement include:*** CS 140, 140E, 143, 144, 145, 148, 190, 210B, 221, 227B, 243, 248, 341, and 346 (any deviations from this list must be approved by the Associate Chair for Education). Courses meeting the Significant Implementation Requirement must be taken at Stanford. Students who previously took at least two of these courses at Stanford as undergraduates may request a waiver of this requirement.

#### BREADTH REQUIREMENT

Choose three from list below:

(Breadth courses must be taken for at least three units.)

Grade Units

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|--|--|--|--|
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|  |  |  |  |
|  |  |  |  |

**TOTAL UNITS USED TO SATISFY BREADTH REQUIREMENT (Letter grades only.)**

***Courses that may be used to satisfy the Theoretical Computer Science breadth requirement include:*** CS 124, 140 or 140E, 143, 144 or EE 284, 145, 147, 148, 149, 155, 157, 205L, 221, 223A, 224N, 224S, 224U, 224W, 227B, 229, 231A or 231B, 234, 240, 242, 243, 244, 244B, 270, 273A, 274, 276, 279; CME 108, 302; EE 180, 282.

**UNITS FOR THE THEORETICAL COMPUTER SCIENCE SINGLE DEPTH SPECIALIZATION**

The courses you submit for your depth must meet the following requirements. Any deviations from the stated requirements must be noted and approved by your adviser in the Adviser Notes box provided (maximum of one adviser-approved deviation allowed). Courses taken for your Stanford undergraduate degree do not need to be repeated. Enter course selection in the table below:

|                      |
|----------------------|
| <b>Adviser Notes</b> |
|----------------------|

- a) CS 154\*\*, 261 (students with equivalent course work may waive \*\* courses with adviser approval)
- b) A total of at least 27 units from category (a) and the following: CS 151, 166, 168, 228, 233, 236, 246, 250, 251, 252, 254, 255, 257, 262, 263, 264, 265, 266, 267, 268, 269G, 269I, 269O, 334A or EE 364A, 341, 345, 352, 354, 355, 357, 358, 359\*, 362, 364A, 366, 367, 368, 369\*, 374, 393\*, 395\*, 399\*, 468\*; Man. Sci. 310, 319 (courses with \* notation require approval of MS adviser)

Note: Multiple CS359, CS369, and/or CS468 courses may be taken as long as they are each on different topics (denoted by different letter suffixes).

| Course number  | Title (Depth courses must be taken for at least 3 units.) | Grade | Units |
|--|---|-------|-------|
|  |   |       |       |
|  |   |       |       |
|  |   |       |       |
|  |   |       |       |
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|  |   |       |       |
|  |   |       |       |
| <b>TOTAL SPECIALIZATION UNITS APPLIED TO MSCS (must total at least 27 units) Letter grades only.</b> |   |       |       |

**ELECTIVES**

List here any additional courses used to complete the 45-unit requirement for the MSCS degree. You may count up to a maximum of **three units** of 500-level CS seminars, CS300, EE380, EE385A, or other 1-2 unit seminars offered in the School of Engineering, as Electives toward the MS degree. Electives must be technical courses numbered above 100, related to the degree program, and approved by the adviser and MS program administrator. CS courses numbered above 110, excluding CS196 or CS198, are pre-approved as MS electives.

| Course number                               | Title | Grade | Units |
|---|-------|-------|-------|
|   |       |       |       |
|   |       |       |       |
|   |       |       |       |
|   |       |       |       |
| <b>TOTAL ELECTIVE UNITS APPLIED TO MSCS</b> |       |       |       |

**TOTAL UNITS APPLIED TO MSCS**

**ADDITIONAL REQUIREMENTS**

- All courses submitted for the MSCS degree must be numbered 100 or greater.
- At most 10 units of Foundations requirement courses may be counted toward your 45 units.
- At most 3 units of CS/EE/Engineering seminars may be counted toward your 45 units.
- At least 36 units submitted for the MSCS degree, including all courses taken for breadth and depth, must be taken for a letter grade.
- The average grade in the courses submitted for the MSCS must be at least a B (3.0 in Stanford's GPA scale).
- Units previously applied toward BS requirements may not also be counted toward the MSCS.
- You must complete at least 45 graduate units at Stanford before receiving the MSCS degree.

Adviser's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Department approval (Claire Stager): \_\_\_\_\_ Date: \_\_\_\_\_

FOR DEPARTMENT USE: UNITS \_\_\_\_\_ CR/NC \_\_\_\_\_ GPA \_\_\_\_\_