

# Computer Science: Combined Bachelor of Science & Masters of Science (290BS)

## Version for Students In Fall 2008 or Spring 2009

Revision of June 25, 2008

*This degree program requires 151 SH and co-op division N  
At least 32 SH must be Masters level courses in Computer Science*

The College of Computer and Information Science reserves the right to modify the curriculum described in this document or the individual courses as necessary in the future.

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| <b>Computer Science: Undergraduate Level Courses</b>  |
| <b>45 or 46 SH: 10 @ 4 SH, 5 or 6 @ 1 SH</b>  |
| <i>Required Computer Science Courses (32 or 33 SH)</i>  |
| CS U200 Discrete Structures & CS U201[0 SH]   |
| CS U211 Fund of Computer Science 1 & CS U212 [1 SH]   |
| CS U213 Fund of Computer Science 2 & CS U214 [1 SH]   |
| CS U221 CS/IS Overview 1 [1 SH]   |
| CS U222 CS/IS Overview 2 [1 SH]   |
| or  |
| CS U223 CS/IS Co-op Preparation [1 SH]  |
| CS U290 Logic and Computation & CS U291 [1 SH]  |
| CS U370 Object-Oriented Design  |
| CS U380 Computer Organization   |
| CS U390 Theory of Computation   |
| CS U670 Software Development  |
| CS U600 Senior Seminar [1 SH]   |
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| <i>CS Electives (8 SH)</i>  |
| CS Elective 1   |
| CS Elective 2 ( <i>Capstone</i> )   |
| <i>CS elective: CS U400 or higher, IS U535 or IS U570, or additional Masters Level CS electives</i>   |
| <i>Note on Capstone:</i>  |
| <i>One CS Elective must be a CS course that satisfies the university Capstone Requirement.</i>  |
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| <b>Computer Science: Masters Level Courses</b>  |
| <b>32 SH: 8 @ 4 SH</b>  |
| <i>Required Masters Level CS Core Courses (12 SH)</i>   |
| CS G111 Principles of Programming Languages   |
| CS G112 Computer Systems  |
| CS G113 Algorithms  |
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| <i>Masters Level CS Electives (20 SH)</i>   |
| MS Elective 1   |
| MS Elective 2   |
| MS Elective 3   |
| MS Elective 4   |
| MS Elective 5   |
| <i>The Masters Level CS electives may be chosen from either Masters courses or from those PhD level courses for which the student is qualified.</i> |
| <i>2 of the 5 Masters Level CS electives must be in one of the following concentrations:</i>  |
| <i>Artificial Intelligence</i>  |
| <i>Database Management</i>  |
| <i>Graphics</i>   |
| <i>Information Security</i>   |
| <i>Networks</i>   |
| <i>Programming Languages</i>  |
| <i>Software Engineering</i>   |
| <i>Systems</i>  |
| <i>Theory</i>   |

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| <b>English (8 SH: 2 @ 4 SH)</b>  |
| ENG U111 College Writing   |
| ENG U302 Adv Writing in the Technical Professions  |
| <i>With permission, may substitute ENG U301 for ENG U302</i>   |
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| <b>Mathematics (16 SH: 4 @ 4 SH)</b>   |
| MTH U241 Calculus 1  |
| MTH U242 Calculus 2  |
| MTH U371 Linear Algebra  |
| MTH U481 Probability and Statistics  |
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| <b>Science (10 SH: 2 @ 4 SH and 2 @ 1 SH)</b>  |
| Science 1 & Science Lab 1 [1 SH]   |
| Science 2 & Science Lab 2 [1 SH]   |
| <i>You must complete a pair from the same science.</i>   |
| <i>See the next page for the list of permitted pairs</i>   |
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| <b>Electrical &amp; Computer Engineering (4 SH: 1 @ 4 SH)</b>  |
| ECE U230 Computer Architecture for CS  |
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| <b>General Requirements(4 SH: 1 @ 4 SH)</b>  |
| SOC U528 Computers & Society   |
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| <b>General Electives (32 SH: 8 @ 4 SH)</b>   |
| Elective 1: Level 1 Arts/Humanities Core   |
| Elective 2: Level 1 Social Sciences Core   |
| Elective 3   |
| Elective 4   |
| Elective 5   |
| Elective 6   |
| Elective 7   |
| Elective 8   |
| <i>The general electives must be consistent with the policy on general electives articulated by the College of Computer and Information Science on the college web site.</i>   |
| <i>2 of the general electives must be used to satisfy:</i>   |
| <i>Level 1 Arts/Humanities Core</i>  |
| <i>Level 1 Social Sciences Core</i>  |
| <i>Breadth-or-Depth Requirement: Among the 6 remaining general electives, either:</i>  |
| <i>3 must fall into Arts, Humanities, or Social Sciences</i>   |
| <i>or</i>  |
| <i>3 must be in one discipline outside CS/IS and at least one of these electives must be at an intermediate level</i>  |
| <i>The Comparative Cultures Requirement must be satisfied. If this is done by taking a course then this must also be one of the general electives. A comparative cultures course may be counted as 1 of the 3 courses in Arts, Humanities, or Social Sciences in the breadth-or-depth requirement.</i> |

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| <b>Science Details (10 SH: 2 @ 4 SH and 2 @ 1 SH)</b>                             |
| Science 1 & Science Lab 1 [1 SH]  |
| Science 2 & Science Lab 2 [1 SH]  |
| <i>You must complete a pair from the same science.</i>                            |
| <i>The following is a list of permitted pairs with labs.</i>                      |
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| <i>For Biology, take:</i>   |
| BIO U111 General Biology 1 & U112   |
| <i>Then choose one from:</i>  |
| BIO U113 General Biology 2 & U114   |
| BIO U301 Genetics & Molecular Biology & U302                                      |
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| <i>For Chemistry, take:</i>   |
| CHM U211 General Chemistry 1 & U212 & U213  |
| CHM U214 General Chemistry 2 & U215 & U216  |
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| <i>For Earth &amp; Environmental Sciences, take one or both of the following:</i> |
| ENV U200 Dynamic Earth & U201   |
| ENV U220 History of Earth & Life & U221   |
| <i>If you choose only U200/U201, then choose one from:</i>                        |
| ENV U310 Earth Materials & U311   |
| ENV U340 Earth Landforms & Processes & U341                                       |
| ENV U520 Applied Hydrogeology & U521  |
| ENV U544 Sedimentation & U545   |
| ENV U546 Coastal Processes & U547   |
| ENV U560 Geographic Information Systems & U561                                    |
| <i>If you choose only U220/U221, then choose:</i>                                 |
| ENV U542 Fossils and Paleontology & U543  |
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| <i>For Physics, take one of the paired sequences:</i>                             |
| A: PHY U161 Physics 1 & U162  |
| A: PHY U165 Physics 2 & U166  |
| B: PHY U145 Physics for Life Sciences 1 & U146                                    |
| B: PHY U147 Physics for Life Sciences 2 & U148                                    |
| C: PHY U151 Physics for Engineering 1 & U152 & U153                               |
| C: PHY U155 Physics for Engineering 2 & U156 & U157                               |