

## B.S. Dual Major for Computer Science and Biology (283BS) For Students Entering in Fall 2008 or Spring 2009

Revision of August 23, 2008

*This degree program requires 141 SH of credit*

The College of Computer and Information Science and the Department of Biology reserve 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</b>  | <b>Biology</b>  |
| <b>41 or 42 SH: 9 @ 4 SH, 5 or 6 @ 1 SH</b>  | <b>32-34 SH: 7 @ 4 SH, 4-6 @ 1 SH</b>   |
| <i>Computer Science Required Courses (24 SH)</i>   | <i>Biology Required Courses (19 SH)</i>   |
| CS U200 Discrete Structures & CS U201 [0 SH]   | BIO U101 Principles of Biology 1 & BIO U102 [1 SH]  |
| CS U211 Fund of Computer Science 1 & CS U212 [1 SH]  | BIO U103 Principles of Biology 2 & BIO U104 [1 SH]  |
| CS U213 Fund of Computer Science 2 & CS U214 [1 SH]  | BIO U301 Genetics and Molecular Bio & BIO U302 [1 SH]   |
| CS U221 CS/IS Overview 1 [1 SH]  | BIO U701 Biology Capstone   |
| CS U222 CS/IS Overview 2 [1 SH]  |   |
| or   | <i>Integrative Course (Choose one – 4 or 5 SH)</i>  |
| CS U223 CS/IS Co-op Preparation [1 SH]   | BIO G308 Genome and Proteome Analysis <i>or</i>   |
| or   | BIO G309 Protein Structure and Systems Biology <i>or</i>  |
| BIO U100 College: An Introduction [1 SH]   | BIO U521 Exp Design Marine Ecology & BIO U522[1 SH]   |
| BIO U106 Introduction to Experiential Education [1 SH]   |   |
| CS U290 Logic and Computation & CS U291 [1 SH]   | <i>Biology Elective Courses (9-10 SH)</i>   |
| CS U370 Object-Oriented Design   | <i>Complete 2 Biology courses (with labs if offered) at the level BIO U311 or above</i>   |
| CS U430 Database Design  | <i>At least 1 of the 2 electives must come from the following list:</i>   |
| CS U670 Software Development   | BIO U311 Ecology & BIO U312 [1SH]   |
| CS U600 Senior Seminar [1 SH]  | BIO U313 Plant Biology & BIO U314 [1SH]   |
|  | BIO U315 Invertebrate Zoology & BIO U316 [1SH]  |
| <i>Integrative Courses (8 SH)</i>  | BIO U317 Vertebrate Zoology & BIO U318 [1SH]  |
| CS U390 Theory of Computation  | BIO U319 Regulatory Cell Biology & BIO U320 [1SH]   |
| CS U690 Algorithms and Data  | BIO U321 Microbiology & BIO U322 [1SH]  |
|  | BIO U323 Biochemistry & BIO U324 [1SH]  |
| <b>English (8 SH: 2 @ 4 SH)</b>  | BIO Elective 1  |
| ENG U111 College Writing   | BIO Elective 2  |
| ENG U302 Adv Writing in the Technical Professions  |   |
| <i>With permission, may substitute ENG U301 for ENG U302</i>   | <i>Students are normally expected to take at least 32 SH in Biology not including BIO U100 and BIO U106 if these are selected as options for introductions to college and co-op</i> |
|  |   |
| <b>Mathematics (12 SH: 3 @ 4 SH)</b>   | <b>Chemistry</b>  |
| MTH U151 Calculus and Differential Eqns for Biology 1  | <b>20 SH: 4 @ 4 SH, 4 @ 1 SH</b>  |
| MTH U152 Calculus and Differential Eqns for Biology 2  | <i>Complete the following courses with corresponding labs and recitations</i>   |
| MTH U481 Probability and Statistics  | CHM U211 General Chemistry 1 & CHM U212 [1 SH] & CHM 213 [0 SH]   |
|  | CHM U214 General Chemistry 2 & CHM U215 [1 SH] & CHM 216 [0 SH]   |
| <b>General Requirements (4 SH: 1 @ 4 SH)</b>   | CHM U311 Organic Chemistry 1 & CHM U312 [1 SH]  |
| SOC U528 Computers and Society   | CHM U313 Organic Chemistry 2 & CHM U314 [1 SH]  |
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| <b>General Electives (24 SH: 6 @ 4 SH)</b>   |   |
| Elective 1: Arts/Humanities Core   |   |
| Elective 2: Social Sciences Core   |   |
| Elective 3   |   |
| Elective 4   |   |
| Elective 5   |   |
| Elective 6   |   |
| <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>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.</i>                       |   |