## Department of Computer & Information Science - UMass Dartmouth
### Requirements for Bachelor of Science in Computer Science

**Updated 2/7/08**

<table>
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<tr>
<th>Student Name</th>
<th>Last Name</th>
<th>First Name</th>
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<th>Date Entered</th>
<th>Advisor</th>
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Completion of this form assures satisfaction of all CIS Department and University graduation requirements, including General Education.

### I. CIS Core Courses (Grade of "C" or better)
- CIS 180 – Object Oriented Programming I (4)
- CIS 181 – Object Oriented Programming II (4) (Pre: CIS 180)
- CIS 190 – Introduction to Procedural Programming (4)
- CIS 272 – Introduction to Computing Systems (4) (Co: CIS 190, MTH 181)
- CIS 273 – Computer Organization and Design (4) (Pre: CIS 272)
- CIS 280 – Software Specification and Design (4) (Pre: CIS 181)
- CIS 360 – Algorithms and Data Structures (3) (Pre: CIS 181)
- CIS 361 – Models of Computations (3) (Pre: CIS 181, MTH 182)
- CIS 481 – Parallel and Distributed Software Systems (3) (Pre: CIS 280, CIS 370)
- CIS 498 – Software Engineering Project I (4) (Pre: CIS 280, CIS 362)
- CIS 499 – Software Engineering Project II (3) (Pre: CIS 498)

### II. CIS Electives 4 courses required, (Grade of "C" or better)
- CIS 314 – Computer Architecture (4) (Pre: CIS 273, CIS 360)
- CIS 410 – Programming Language Design (3) (Pre: CIS 360)
- CIS 412 – Artificial Intelligence (3) (Pre: CIS 360)
- CIS 421 – Introduction to Theory of Computation (3) (Pre: CIS 361)
- CIS 422 – Design of Parallel Algorithms (4) (Pre: CIS 360)
- CIS 430 – Data Mining and Knowledge Discovery (3) (Pre: CIS 360)
- CIS 431 – Human Computer Interaction (4) (Pre: CIS 362)
- CIS 452 – Database Systems (3) (Pre: CIS 280)
- CIS 454 – Computer Graphics (3) (Pre: CIS Jr./Sr.)
- CIS 455 – Bioinformatics (3) (Pre: CIS 360, CIS 362)
- CIS 464 – Computer Game Design (3) (Pre: CIS 360)
- CIS 465 – Topics in Computer Vision (3) (Pre: CIS 360)
- CIS 466 – Introduction to Mobile Robotics (3) (Pre: CIS 370)
- CIS 467 – Image Analysis and Processing (3) (Pre: CIS 360)
- CIS 471 – Compiler Design (3) (Pre: CIS 361)
- CIS 475 – Computer Networks (3) (Pre: CIS 370)
- CIS 476 – Network Programming (3) (Pre: CIS 370)
- CIS 477 – Computer and Information System Security (3) (Pre: CIS 350, CIS 370)
- CIS 490 – Machine Learning (3) (Pre: CIS 360)

### III. Mathematics Requirements
- MTH 111 – Calculus I (4)
- MTH 112 – Calculus II (4) (Pre: MTH 111)
- MTH 181 – Discrete Structures I (3)
- MTH 182 – Discrete Structures II (3) (Pre: MTH 181)
- MTH 331 – Probability (3) (Pre: MTH 122)

### IV. Science/Quantitative Requirements
- PHY 113 or CHM 151/161 or BIO 121/131 (4) (Circle one)
- PHY 114 or CHM 152/162 or BIO 122/132 (Must be continuation of above) (4)
- CIS 362 – Empirical Methods for Computer Science (3) (Pre: MTH 331)
- ____________________ Science Elective (3)

### V. English Requirements
- ENL 101 – Critical Writing and Reading I (3)
- ENL 102 – Critical Writing and Reading II (3)
- ENL 266 – Technical Communications (3)

### VI. Ethics and Social Responsibility
- CIS 381 – Social and Ethical Aspects of Computing (3)

### VII. Cultural and Artistic Literacy (Area C, at most 2 from same dept.)
- ____________________ (3)
- ____________________ (3)

### VIII. Global Awareness (Area G)
- ____________________ (3)

### IX. Diversity (Area D)
- ____________________ (3)

### X. Free Electives
- ____________________ (3)
- ____________________ (3)

### XI. GPA of 2.000 or better

**Notes:** Any CIS core course or technical elective that is a prerequisite to another CIS course, must be passed with a grade of C or better in order to satisfy the prerequisite.