# Computer Science

**Department of Computer Science and Information Systems**

**Department Chair:** Suzanne Mello-Stark

**Computer Science Program Faculty: Associate Professors Henry,** Liu, Mello-Stark;

Students **must** consult with their assigned advisor before they will be able to register for courses. *Note:* Students may not count toward the major more than two courses with grades below C-.

Computer Science B.A.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 209 | Programming Implementations using Discrete Structures | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
|  |  |  |  |
| CSCI 313 | Computer Organization and Architecture | 4 | F, Sp |
| CSCI 325 | Organization of Programming Language | 3 | F (even years), Sp |
| CSCI 401W | Software Engineering | 3 | F (even years), Sp |
| CSCI 402  CSCI 423 | Cyber Security Principles  Analysis of Algorithms | 4  4 | F, Sp  F (odd years), Sp |
| CSCI 435 | Operating Systems | 4 | F, Sp (even years) |

THREE COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| CIS 416  CIS 421  CIS 455W  CSCI 309 | Web Design  Networks and Infrastructure  Database Programming  Object Oriented Design | 4  4  4  4 | Sp  F, Sp  F, Sp  F, Sp |
| CSCI 415 | Software Testing | 4 | Sp |
|  |  |  |  |
| CSCI 427 | Artificial Intelligence Foundations | 4 | F, Sp |
| CSCI 428  CSCI 432 | Machine Learning  Network and Systems Security | 4  4 | Sp  Sp |
|  |  |  |  |
|  |  |  |  |
| CSCI 467 | Computer Science Internship | 4 | As needed |
| CSCI 476 | Advanced Topics in Computer Science | 4 | Sp |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |

IT IS RECOMMENDED that students also take:

|  |  |  |  |
| --- | --- | --- | --- |
| COMM 208 | Public Presentations | 4 | F, Sp |
| ENGL 230W | Workplace Writing | 4 | F, Sp, Su |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |

Total Credit Hours: 50

Computer Science B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 209 | Programming Implementations using Discrete Structures | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
|  |  |  |  |
| CSCI 313 | Computer Organization and Architecture | 4 | F, Sp |
| CSCI 325 | Organization of Programming Language | 3 | F (even years), Sp |
| CSCI 401W  CSCI 402 | Software Engineering  Cyber Security Principles | 3  4 | F (even years), Sp  F, Sp |
| CSCI 423 | Analysis of Algorithms | 4 | F (odd years), Sp |
| CSCI 435 | Operating Systems | 4 | F, Sp (even years) |

THREE COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| CIS 416  CIS 421  CIS 455W  CSCI 309 | Web Design  Networks and Infrastructure  Database Programming  Object Oriented Design | 4  4  4  4 | Sp  F, Sp  F, Sp  F, Sp |
| CSCI 415 | Software Testing | 4 | Sp |
|  |  |  |  |
| CSCI 427 | Artificial Intelligence Foundations | 4 | F, Sp |
| CSCI 428  CSCI 432 | Machine Learning  Network and Systems Security | 4  4 | Sp  Sp |
|  |  |  |  |
|  |  |  |  |
| CSCI 467 | Computer Science Internship | 4 | As needed |
| CSCI 476 | Advanced Topics in Computer Science | 4 | Sp |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| ENGL 230W | Workplace Writing | 4 | F, Sp, Su |
|  | -Or- |  |  |
| ENGL 231W | Multimodal Writing | 4 | Alternate years |
|  |  |  |  |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHIL 206 | Ethics | 3 | F, Sp |
|  | -Or- |  |  |
| PHIL 207 | Technology and the Future of Humanity | 3 | Sp |

TWO COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |
| MATH 300W | Bridge to Advanced Mathematics | 4 | Sp |
| MATH 314 | Calculus III | 4 | F, Sp |
| MATH 324 | College Geometry | 4 | Sp |
| MATH 417 | Introduction to Numerical Analysis | 4 | Sp (as needed) |
| MATH 418 | Introduction to Operations Research | 3 | Sp (even years) |
| MATH 431 | Number Theory | 3 | F, Sp |
| MATH 436 | Discrete Mathematics | 3 | F, Sp |
| DATA 445 | Advanced Statistical Methods | 4 | Sp |

ONE OF THE FOLLOWING TWO-COURSE SEQUENCES

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 111 | Introductory Biology I | 4 | F, Sp, Su |
|  | -And- |  |  |
| BIOL 112 | Introductory Biology II | 4 | F, Sp, Su |
|  |  |  |  |
|  | -Or- |  |  |
|  |  |  |  |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -And- |  |  |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
|  |  |  |  |
|  | -Or- |  |  |
|  |  |  |  |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
|  | -And- |  |  |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Note: Connections courses cannot be used to satisfy these requirements.

Note: Eight credit hours from BIOL 111; CHEM 103; MATH 212, MATH 240; or PHYS 101 may be counted toward the Natural Science and Mathematics categories of General Education.

Total Credit Hours: 75-77

Computer Science Minor

Course Requirements

The minor in computer science consists of a minimum of 21 credit hours (six courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |

and three additional computer science courses (9-12 credits) at 200 level or above.

Total Credit Hours: 21-24



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