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## GENERAL INFORMATION

## Bachelor of Science (B.S.)

The B.S. degree is offered in the following areas:

•     Accounting

•     Art Education

•     Artificial Intelligence

•     Behavioral Health Studies

School of Business

Marianne Raimondo, Dean

Undergraduate Degree Programs

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Accounting | B.S. |  |
| Artificial Intelligence (p. ) | B.S. |  |
| Computer Information Systems  (p. ) | B.S. |  |
| Computer Science (p. ) | B.A. |  |
| Computer Science (p. ) | B.S. |  |
| Cybersecurity (p. ) | B.S. |  |
| Economics | B.A. |  |
| Finance | B.S. |  |
| Health Care Administration | B.S. |  |
| Management | B.S. | General Management |
|  | B.S. | Human Resource Management |
|  | B.S. | Operations Management |
| Marketing | B.S. |  |
| Sports Management (p. ) | B.S. |  |

*Note: Minors are offered in all the degree programs listed above, as well as an Applications of Artificial Intelligence minor, a Data Analytics* (p. )*minor, an International Business minor and a Web Development* (p. )*minor. Honors programs are also offered in these degree programs, except for health care administration.*

– PLEASE NOTE –

All undergraduate full-degree programs require the completion of at least 120 credit hours, including (1) General Education requirements, (2) the College Writing Requirement, (3) the College Mathematics Milestone, and (4) the course requirements listed under each program. For more details on graduation requirements, see Academic Policies and Requirements.

Graduate Degree Programs

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Health Care Administration | M.S. |  |
| Operations Management | M.S. | PROGRAM SUSPENDED |
| Professional Accountancy | M.P.Ac. | Accounting |
|  | M.P.Ac. | Personal Financial Planning |

General Information

The School of Business houses four departments: (1) the Department of Accounting (2) the Department of Computer Science & Information Systems (3) the Department of Economics and Finance and (4) the Department of Management and Marketing. The school also houses and coordinates the Health Care Administration major.

Writing Requirement

A graded writing assignment is required in **every** course.

Suggested Sequence of Courses

Majors in the School of Business are designed primarily for upper-division students. Entering students should plan to complete their General Education Core and Distribution Requirements during their first two years. These courses provide excellent and necessary preparation for the major and its requirements.

In the first year, students may not take courses in the departments (except ECON 200, ECON 214, and ECON 215) but are strongly encouraged to complete MATH 177.

Students entering their second year may enroll in a variety of required courses at the 200-level, including introductory courses in their major.

In the third year, students with junior standing and with 60 credit hours or more may enroll in 300-level courses in the School of Business. Students with 45 credit hours or more may enroll in 300-level CIS electives, FIN 301, MGT 201, and MKT 201. At this time, students begin to take courses to fulfill the requirements of their major.

Retention Requirements

1. Satisfactory completion (passing grade) of the college writing requirement.

2. A minimum cumulative grade point average of 2.00.

3. Students majoring in accounting, management, and marketing must achieve satisfactory completion of ACCT 201, ACCT 202; CIS 252; ECON 214, ECON 215; and MATH 177 and MATH 248.

The appropriate department within the School of Business, in cooperation with the Records Office, will monitor the standards for all declared majors and notify those students who fail to meet the requirements. The appropriate department within the School of Business will also establish and maintain an Appeals Committee to receive, review, and determine the outcome of petitions by students for retention under extenuating circumstances. Preregistration course reservations will be canceled for any student who has been notified that he or she no longer meets the retention standards.

AFTER ACCOUNTING

# ARTIFICIAL INTELLIGENCE

**Department of Computer Science and Information Systems**

**Department Chair:** Suzanne Mello-Stark

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

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-.

able to register for courses.

Artificial Intelligence B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 141 | Application and Impact of Artificial Intelligence | 4 | F |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 209 | Programming Implementation of Discrete Structures | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
| CSCI 342W | Social and Ethical Issues in Technology | 4 | Sp |
| CSCI 427 | Artificial Intelligence Foundations | 4 | F |
| CSCI 428 | Machine Learning | 4 | Sp |

THREE COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 348 | Artificial Intelligence in Gaming | 4 | As needed |
| CSCI 443 | Natural Language Processing | 4 | As needed |
| CSCI 444 | Image Processing and Computer Vision | 4 | As needed |
| CSCI 445 | Reinforcement Learning and Autonomous Systems | 4 | As needed |
| CSCI 446 | Cognitive Robotics | 4 | As needed |
|  |  |  |  |

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| CIS 470 | Data Analytics | 4 | F |
| CIS 472 | Data Visualization | 4 | As needed |
| DATA 245 | Principles of Data Science | 4 | F, Sp |
| DATA 345 | Applied Linear Algebra for Statistical Learning | 4 | F |
| DATA 445 | Advanced Statistical Methods | 4 | Sp |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |

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: 52

applications of Artificial Intelligence MINOr

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 141 | Application and Impact of Artificial Intelligence | 4 | F |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
| CSCI 209 | Discrete Structures Using Python | 4 | F, Sp |
| CSCI 342W | Social and Ethical Issues in Technology | 4 | Spring |
| CSCI 348 | Artificial Intelligence in Gaming | 4 | As needed |

**Total Credit Hours: 20**

Artificial Intelligence MINOr

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
|  | -or- |  |  |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 209 | Programming Implementation of Discrete Structures | 4 | F, Sp |
|  | -or- |  |  |
| MATH 436 | Discrete Mathematics | 3 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
| CSCI 427 | Artificial Intelligence | 4 | F, |
| CSCI 428 | Machine Learning | 4 | Sp |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |

**Total Credit Hours: 27-28**

# Computer Information Systems

**Department of Computer Science and Information Systems**

**Department Chair:** Suzanne Mello-Stark

**Computer Information Systems Program Faculty: Professor**Bain**; Assistant Professors** Perry, Wood  
  
Students must consult with their assigned advisor before they will be able to register for courses.

Computer Information Systems B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| ACCT 201 | Principles of Accounting I: Financial | 3 | F, Sp, Su |
| CIS 252 | Introduction to Information Systems | 4 | F, Sp, Su |
| CIS 301 | Introduction to Computer Programming in Business | 4 | F, Sp |
| CIS 320 | Information Technology: Hardware and Software Systems | 4 | As needed |
| CIS 421 | Networks and Infrastructure | 4 | F, Sp |
| CIS 440 | Issues in Computer Security | 4 | F, Sp |
| CIS 455W | Database Programming | 4 | F, Sp |
| CIS 462W | Applied Software Development Project | 4 | F, Sp |
| ECON 214 | Principles of Microeconomics | 3 | F, Sp, Su |
| FIN 301 | Financial Management | 4 | F, Sp, Su |
| MGT 201W | Foundations of Management | 4 | F, Sp, Su |
| MKT 201W | Introduction to Marketing | 4 | F, Sp, Su |

and TWO ADDITIONAL COURSES in computer information systems or computer science at the 300-level or above (for a total of 8 credits.)

COGNATES

|  |  |  |  |
| --- | --- | --- | --- |
| ENGL 230W | Workplace Writing | 4 | F, Sp, Su |
| MATH 177 | Quantitative Business Analysis | 4 | F, Sp, Su |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |

Note: MATH 177: Fulfills the Mathematics category of General Education.

Note: MATH 248: Fulfills the Advanced Quantitative Scientific Reasoning category of General Education.

Note: ECON 215 may be substituted for ECON 214 in consultation with advisor.

Total Credit Hours: 66

Computer Information Systems Minor

Students must consult with their assigned advisor before they will be able to register for courses.

Course Requirements

A minor in computer information systems consists of a minimum of 20 credit hours (five courses), as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| CIS 252 | Introduction to Information Systems | 4 | F, Sp, Su |
| CIS 440 | Issues in Computer Security | 4 | F, Sp |
| CIS 455W | Database Programming | 4 | F, Sp |

AND TWO ADDITIONAL courses from Computer Information Systems at the 300-level or above.

Total Credit Hours: 20

Data Analytics Minor

Students must consult with their assigned advisor before they will be able to register for courses.

Course Requirements

A minor in data analytics consists of a minimum of 24 credit hours (six courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 177 | Quantitative Business Analysis | 4 | F, Sp, Su |
|  | -Or- |  |  |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
|  |  |  |  |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |
|  |  |  |  |
| CIS 252 | Introduction to Information Systems | 4 | F, Sp, Su |
|  |  |  |  |
| CIS 301 | Introduction to Computer Programming in Business | 4 | F, Sp |
|  | -Or- |  |  |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
|  |  |  |  |
| CIS 470 | Introduction to Data Analytics | 4 | F |
| CIS 472 | Data Visualization | 4 | As needed |

Total Credit Hours: 24

# Computer Science

**Department of Computer Science and Information Systems**

**Department Chair:** Suzanne Mello-Stark

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

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 | Discrete Structures Using Python | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
| CSCI 309 | Object-Oriented Design | 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 423 | Analysis of Algorithms | 4 | F (odd years), Sp |
| CSCI 435 | Operating Systems | 4 | F, Sp (even years) |

THREE COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 305 | Functional Programming | 4 | As needed |
|  | -Or- |  |  |
| CSCI 402 | Cyber Security Principles | 4 | F, Sp |
|  | -Or- |  |  |
| CSCI 416 | Web Design | 4 | Sp |
|  |  |  |  |
| CSCI 415 | Software Testing | 4 | Sp |
| CSCI 422 | Introduction to Computation Theory | 4 | Sp (As needed) |
| CSCI 427 | Artificial Intelligence Foundations | 4 | F, Sp |
| CSCI 428 | Machine Learning | 4 | F, Sp |
| CSCI 437 | Network Architectures and Programming | 4 | As needed |
| CSCI 455 | Introduction to Databases | 4 | F |
| CSCI 467 | Computer Science Internship | 4 | As needed |
| CSCI 476 | Advanced Topics in Computer Science | 4 | Sp |

Note: Students cannot receive credit for more than ONE from CSCI 305, CSCI 402, and CSCI 416 to satisfy this elective requirement.

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: 49-51

Computer Science B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 209 | Discrete Structures Using Python | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
| CSCI 212W | Data Structures | 4 | F, Sp |
| CSCI 309 | Object-Oriented Design | 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 423 | Analysis of Algorithms | 4 | F (odd years), Sp |
| CSCI 435 | Operating Systems | 4 | F, Sp (even years) |

THREE COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 305 | Functional Programming | 4 | As needed |
|  | -Or- |  |  |
| CSCI 402 | Cyber Security Principles | 4 | F, Sp |
|  | -Or- |  |  |
| CSCI 416 | Web Design | 4 | Sp |
|  |  |  |  |
| CSCI 415 | Software Testing | 4 | Sp |
| CSCI 422 | Introduction to Computation Theory | 4 | Sp (As needed) |
| CSCI 427 | Artificial Intelligence Foundations | 4 | F, Sp |
| CSCI 428 | Machine Learning | 4 | Annual |
| CSCI 437 | Network Architectures and Programming | 4 | As needed |
| CSCI 455 | Introduction to Databases | 4 | F |
| CSCI 467 | Computer Science Internship | 4 | As needed |
| CSCI 476 | Advanced Topics in Computer Science | 4 | Sp |

Note: Students cannot receive credit for more than ONE from CSCI 305, CSCI 402, and CSCI 416 to satisfy this elective requirement.

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: 76-78

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

Web Development Minor

The minor in web development consists of a minimum of 20 credit hours (five courses), as follows:

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 102 | Computer Fundamentals for Cyber Security | 4 | F, Sp |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
|  | -Or- |  |  |
| CIS 301 | Introduction to Computer Programming in Business | 4 | F, Sp |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
|  |  |  |  |
| CSCI 324 | Dynamic Web Development | 4 | F |
|  | -Or- |  |  |
| CIS 324 | Dynamic Web Development | 4 | F |
|  |  |  |  |
| CSCI 416 | Web Design | 4 | Sp |
|  | -Or- |  |  |
| CIS 416 | Web Design | 4 | Sp |

Total Credit Hours: 20

# Cybersecurity

**Department of Computer Science and Information Systems**

**Department Chair:** Suzanne Mello-Stark

**Cybersecurity Program Faculty: Professor** Bain**; Associate Professors** Liu, Mello-Stark**; Assistant Professors** Henry, Wood

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-.

Cybersecurity B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CIS 252 | Introduction to Information Systems | 4 | F, Sp, Su |
| CIS 320 | Information Technology: Hardware and Software Systems | 4 | As needed |
| CIS 347 | Basic Cryptography Techniques | 4 | F, Sp |
| CIS 421 | Networks and Infrastructure | 4 | F, Sp |
| CIS 440 | Issues in Computer Security | 4 | F, Sp |
| CIS 462W | Applied Software Development Project | 4 | F, Sp |
| CSCI 102 | Computer Fundamentals for Cyber Security | 4 | F, Sp |
|  |  |  |  |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
|  | -Or- |  |  |
| CIS 301 | Introduction to Computer Programming in Business | 4 | F, Sp |
|  |  |  |  |
| CSCI 402 | Cyber Security Principles | 4 | F, Sp |
| CSCI 410 | Digital Forensics | 4 | F |
| CSCI 432 | Network and Systems Security | 4 | Sp |

**and TWO ADDITIONAL COURSES in computer information systems or computer science at the 300-level or above (for a total of 8 credits).**

Cognates

Note: MATH 177: Fulfills the Mathematics category of General Education.  
  
Note: MATH 248: Fulfills the Advanced Quantitative Scientific Reasoning category of General Education.

|  |  |  |  |
| --- | --- | --- | --- |
| MGT 201W | Foundations of Management | 4 | F, Sp, Su |
| MATH 177 | Quantitative Business Analysis | 4 | F, Sp, Su |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |
|  |  |  |  |
| PHIL 206 | Ethics | 3 | F, Sp |
|  | -Or- |  |  |
| PHIL 207 | Technology and the Future of Humanity | 3 | Sp |
|  |  |  |  |

Total Credit Hours: 67

Cybersecurity Minor

Course Requirements

The minor in cyber security consists of 20 credit hours (five courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 102 | Computer Fundamentals for Cyber Security | 4 | F, Sp |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
| CSCI 402 | Cyber Security Principles | 4 | F, Sp |
| CSCI 410 | Digital Forensics | 4 | F |
| CSCI 432 | Network and Systems Security | 4 | Sp |

Total Credit Hours: