[ARCHIVED CATALOG]

Computer Information Systems, BS

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Delivery Area: Online

Bachelor Degree Requirements:

- Minimum 121 Credit Hours
- Writing Intensive Course
- Minimum Cumulative G.P.A.: 2.00
- 30 Credit Hours of Residency Courses
- 9 Credits of Upper-Level Major Residency Courses
- Minimum G.P.A. in the Major: 2.00

Program Major Requirements (87-88 Credit Hours):

- BUA 223 - Principles of Management **3 CR**
- BUA 365 - Organizational Behavior **3 CR**
- CIS 101 - Introduction to Computer Science **3 CR**
- CIS 110 - Programming Fundamentals **3 CR**
- CIS 120 - Introduction to Data Structures **3 CR**
- CIS 131 - Web Applications and Development **3 CR**
- CIS 135 - Introduction to Information Systems & Applications Development **3 CR**
- CIS 150 - Introduction to Data Science **3 CR**
- CIS 221 - Linux **3 CR**
- CIS 240 - Networking Concepts **3 CR**

- CIS 255 - Database Design **3 CR**

- CIS 330 - Systems Analysis **3 CR**

- CIS 460 - Computers & Culture **3 CR**

- CIS 470 - Project Management **3 CR**

- ISS 210 - Introduction to Information Systems Security **3 CR**

- MAT 115 - Elementary Statistics I **3 CR**

- Complete any two 300-level or higher CIS or ISS courses **6 CR**

Complete one of the following courses:

- CIS 380 - Internship **3 CR**

- CIS 480 - Internship **3 CR**

Complete any 200-level programming course (3):

- CIS 212 - Introduction to Visual Basic Programming **3 CR**

- CIS 214 - Introduction to Java Programming **3 CR**

- CIS 215 - Introduction to C++ Programming **3 CR**

- CIS 216 - Programming in C# and .NET **3 CR**

Complete one of the following concentrations:

- **General Concentration (27-28 cr):**
  - CIS 218 - Introduction to SQL
  - CIS 220 - Information Technology Hardware and Systems Software
  - CIS 333 - Web Programming: PHP
  - CIS 345 - Virtual Systems
  - complete any upper-level (300-400) ISS elective
  - MAT 261 - Applied Linear Algebra
  - MAT 280 - Discrete Mathematical Structures
  - Complete one of the following:
    - CIS 350 - Database Management
    - any upper-level (300-400) DSC course
- **Data Science Concentration (27-28 cr):**
  - CIS 218 - Introduction to SQL
  - CIS 352 - Data Visualization
  - MAT 280 - Discrete Mathematical Structures

- Complete one of the following:

    - CIS 449 - Introduction to R Programming and Data Analysis

    - CIS 454 - Advanced Python for Data Science

- Complete five of the following:

    - CIS 350 - Database Management

    - CIS 351 - Database Management Systems: Oracle

    - CIS 354 - Algorithms and Data Structures

    - CIS 355 - Introduction to Sensors

    - CIS 360 - Geographical Information Systems

    - CIS 370 - Statistical Quality Control

    - CIS 450 - Data Mining

    - CIS 452 - Advanced Oracle Programming and Application Development

    - CIS 461 - Spatio-Temporal Information Science

    - DSC 289 - Topics in Data Science

    - DSC 325 - Introduction to Machine Learning

    - DSC 389 - Topics in Data Science

    - DSC 489 - Topics in Data Science

    - ISS 350 - Databases and Database Security

    - ISS 372 - The Internet of Things (IoT)

- **Information Systems Security Concentration (27 cr):**

    - ISS 220 - Security Risk Management

    - ISS 232 - Introduction to Cyber Forensics

    - ISS 240 - Security Policy and Governance

    - ISS 310 - Information Security Architecture

    - ISS 320 - Security Monitoring

    - ISS 360 - Incident Response

    - ISS 410 - Cybersecurity I

    - ISS 412 - Cybersecurity II

    - ISS 470 - Information Systems Security Management

- **Networking Concentration (27 cr):**

    - CIS 241 - Routing and Switching

    - CIS 245 - Wireless Networking

    - CIS 340 - Scaling Networking

    - CIS 341 - TCP/IP

    - CIS 345 - Virtual Systems

- - CIS 348 - Connecting Networks
  - CIS 440 - Network Security
  - MAT 280 - Discrete Mathematical Structures
  - Complete one of the following:
    - CIS 244 - Windows Server Administration
    - CIS 246 - Linux Server Administration
- **Software Development Concentration (27 cr):**
  - CIS 218 - Introduction to SQL
  - CIS 315 - Software Quality Assurance
  - CIS 353 - Principles of Human Computer Interaction and User Design
  - CIS 354 - Algorithms and Data Structures
  - CIS 410 - Software Engineering
  - Complete one of the following:
    - MAT 261 - Applied Linear Algebra
    - MAT 280 - Discrete Mathematical Structures
  - Complete one of the following sequences:
    - **Visual Basic:** CIS 212 - Introduction to Visual Basic Programming & CIS 312 - Advanced Visual Basic Programming
    - **Java:** CIS 214 - Introduction to Java Programming & CIS 314 - Advanced Java Programming
    - **Scientific Programing:** CIS 449 - Introduction to R Programming and Data Analysis & CIS 454 - Advanced Python for Data Science
    - **Web Programming:** CIS 333 - Web Programming: PHP & CIS 334 - PHP and MySQL
- **Web Development Concentration (27 cr):**
  - CIS 218 - Introduction to SQL
  - CIS 231 - Java Script
  - CIS 251 - Web Authoring Tools
  - CIS 333 - Web Programming: PHP
  - CIS 334 - PHP and MySQL
  - CIS 338 - Content Management Systems (CMS)
  - CIS 339 - Web Development Frameworks
  - CIS 353 - Principles of Human Computer Interaction and User Design
  - CIS 438 - Electronic Commerce

Other Program Requirements (6 Credit Hours)

- ENG 317W - Professional Writing **3 CR**
- MAT 112 - College Algebra **3 CR**

Remaining General Education Requirements (26 Credit Hours):

This section is waived for those who hold a prior bachelors degree from a regionally accredited institution.

- Complete any 100-level Communications course (3)

- ENG 101 - College Writing **3 CR**

- complete any 100-level Laboratory Science course **4 CR**

Complete one of the following Fine Arts electives (3):

- ARC 100 - Architectural Design Studio for the Non-Majors **3 CR**

- ARH xxx any Art History course

- ART xxx any Art course

- DRA xxx any Drama course

- ENG 351W - Creative Writing **3 CR**

- ENG 452W - Creative Writing II **3 CR**

- MUH 1xx any 100-level Music History course

- MUS 1xx any 100-level Music course

Complete two of the following Humanities electives (6):

- AME xxx any American Studies course

- ARH 105 - History of Art and Architecture I **3 CR**

- ARH 106 - History of Art and Architecture II **3 CR**

- ASL 1xx/2xx any 100- or 200-level ASL course

- DRA xxx any Drama course

- ENG xxx any English course (except ENG 100, ENG 101, ENG 210W, ENG 317W or ENG 320W)

- FRE xxx any French course

- HGH xxx any Holocaust, Human Rights & Genocide course

- HTY xxx any History course

- HUM xxx any Humanities course

- MUH xxx any Music History course

- PHI xxx any Philosophy course (except PHI 335)

- SPA xxx any Spanish course

- WGS xxx any Women and Gender Studies course

Complete two of the following Social Science electives (6):

- ANT 1xx any 100-level Anthropology course

- ECO 1xx any 100-level Economics course

- ECO 201 - Macroeconomics **3 CR**

- ECO 202 - Microeconomics **3 CR**

- JUS 1xx any 100-level Justice Studies course

- POS 1xx any 100-level Political Science course

- PSY 1xx any 100-level Psychology course

- SOC 1xx any 100-level Sociology course

- SSC 1xx any 100-level Social Science course

General Electives (1-2 Credit Hours):

- Complete 1-2 credits of any 100-level or higher general elective to reach the required 121 credits **1-2 CR**

General Education:

It is the intention of the University of Maine at Augusta that every degree graduate will be prepared to function in our society as an effective and informed citizen. To this end, the faculty has designed a set of minimum expectations that students are expected to satisfy. The aspirations are defined by core skills, competencies, and abilities as well as knowledge based learning experiences that are the grounds for the General Education Requirements. To learn more, visit www.uma.edu/academics/general-education/

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