COMPUTER INFORMATION SYSTEMS, BACHELOR OF SCIENCE

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 (78 CREDIT HOURS):
- ❑ BUA 223 Principles of Management (3)
- ❑ BUA 365 Organizational Behavior (3)
- ❑ CIS 101 Introduction to Computer Science (3)
- ❑ CIS 110 Programming Fundamentals (3)
- ❑ CIS 131 Web Applications and Development (3):
- ❑ CIS 135 Introduction to Information Systems & Applications Development (3)
- ❑ CIS 221 Operating Systems: UNIX (3)
- ❑ CIS 240 Networking Concepts (3)
- ❑ CIS 330 Systems Analysis (3)
- ❑ CIS 350 Database Design and Management (3)
- ❑ CIS 380 or 480 Internship (3)
- ❑ CIS 460 Computers & Culture (3)
- ❑ CIS 470 Project Management (3)
- ❑ ISS 210 Introduction to Information Security (3)
- ❑ Complete any two 200-level or higher CIS or ISS courses (6)
- ❑ Complete any three 300-level or higher CIS or ISS courses (9)

Complete one of the following pathways/concentrations:

No Concentration:
- ❑ Complete any three 200-level or higher CIS or ISS courses (9)
- ❑ Complete any four 300-level or higher CIS or ISS courses (12)

Database Concentration:
- ❑ CIS 351 Database Management Systems: Oracle (3)
- ❑ CIS 352 Data Visualization (3)
- ❑ CIS 450 Data Mining (3)
- ❑ ISS 350 Database Security (3)
- ❑ Complete any three 300-level or higher CIS or ISS electives, with advisor approval (9)

Information Systems Security Concentration:
- ❑ ISS 220 Security Risk Management (3)
- ❑ ISS 230 System Forensics I (3)
- ❑ ISS 310 Information Security Architecture (3)
- ❑ ISS 320 Security Analytics (3)
- ❑ ISS 410 Cyber Security I (3)
- ❑ ISS 412 Cyber Security II (3)
- ❑ ISS 470 Information Security Management (3)

Networking Concentration:
- ❑ CIS 241 Network Administration (3)
- ❑ CIS 340 Advanced Networking (3)
- ❑ CIS 341 TCP/IP (3)

- ❑ CIS 440 Introduction to Network Security (3)
- ❑ ISS 410 Cyber Security I (3)
- ❑ ISS 412 Cyber Security II (3)
- ❑ Complete any CIS or ISS elective, with advisor approval (3)

Software Development Concentration:
- ❑ CIS 212 Intro to Visual Basic Programming (3)
- ❑ CIS 214 Introduction to Java Programming (3)
- ❑ CIS 215 Introduction to C++ Programming (3)
- ❑ CIS 312 Advanced Visual Basic (3)
- ❑ CIS 314 Advanced Java Programming (3)
- ❑ CIS 354 Algorithms and Data Structures (3)
- ❑ CIS 410 Software Engineering (3)

Web Development Concentration:
- ❑ CIS 231 JavaScript (3)
- ❑ CIS 243 XML Programming (3)
- ❑ CIS 251 Web Authoring Tools (3)
- ❑ CIS 333 PHP (3)
- ❑ CIS 338 Content Management (3)
- ❑ CIS 438 Electronic Commerce (3)
- ❑ ISS 452 Securing Web Applications & Social Networking (3)

GENERAL EDUCATION REQUIREMENTS (40 CREDIT HOURS):
- ❑ Complete any 100-level Communications course (3)
- ❑ ENG 101 College Writing (3)
- ❑ ENG 317W Professional Writing (3)
- ❑ Complete one of the following Fine Arts electives (3):
    ART 1xx any 100-level Art course
    DRA xxx any Drama course
    ENG 351 Creative Writing I
    ENG 452 Creative Writing II
    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 & Architecture I
    ARH 106 History of Art & Architecture II
    DRA xxx any Drama course
    ENG xxx any English course (except ENG 101 or 317w)
    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 135 or 335)
    SPA xxx any Spanish course
    WGS xxx any Women and Gender Studies course
- ❑ MAT 112 College Algebra (3)
- ❑ MAT 115 Elementary Statistics I (3)
- ❑ MAT 261 Applied Linear Algebra (3)
- ❑ MAT 280 Discrete Mathematical Structures I (3)
- ❑ Complete any 100-level Laboratory Science course (4)

❑ 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
  ECO 202 Microeconomics
  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 (3 CREDIT HOURS):

❑ Complete any 100-level or higher general elective (3)

Students are encouraged to contact their faculty advisor and the Advising Center for academic advising and support services throughout their stay at UMA.