

# Master of Science – Applied Computer Science

## 2025-2026

DEGREE REQUIREMENTS	BADGE REQUIREMENTS
<p style="text-align: center;"><b><u>Admission Requirements</u></b></p> <p>Candidates must satisfy all of the following:</p> <ol style="list-style-type: none"> <li><b>Grade point average of 3.0</b> (on a 4.0 scale) from all undergraduate coursework. Those with a GPA below 3.0 must contact the College of Computing for advising.</li> <li><b>Resume</b> detailing work experiences and accomplishments.</li> <li><b>Recommendations:</b> submit acceptable recommendations from at least two individuals attesting to the likelihood of the candidate's successful completion of the program.</li> </ol> <p style="text-align: center;"><b><u>Degree Requirements</u></b></p> <p>All candidates for the degree must complete 33 credits as indicated below. All courses are 3 credits each.</p> <p style="text-align: center;"><b>Core Requirements (9 credits)</b></p> <p>Students are required to complete one course in three of the following categories.</p> <p><b>Data Engineering:</b>          CIS 660 Data Engineering*          CIS 673 Principles of Database Design*</p> <p><b>Networking:</b>          CIS 654 Computer Networking*          CIS 656 Distributed Systems*</p> <p><b>Management of Systems Development:</b>          CIS 641 Systems Analysis and Design*          CIS 642 IS Project Management*</p> <p><b>Software Engineering:</b>          CIS 518 Secure Software Engineering*          SE 512 Requirements Specification* (CIS 612)**          SE 513 Software Testing* (CIS 613)**          SE 522 Software Architecture and Design (CIS 622)**</p> <p style="text-align: center;"><b>Elective Requirements (9 - 12 credits)</b></p> <p>Any 500- or 600-level CIS course can be used as an elective toward the M.S. ACS degree, except CIS 500.</p> <p style="text-align: center;"><b>Capstone Requirements (3 or 6 credits)</b></p> <p>Each candidate must complete either the project course or the thesis two-course option.          CIS 693 Master's Project</p> <p><b>OR</b></p> <p>CIS 690 Thesis Research Preparation    <b>AND</b>          CIS 695 Master's Thesis</p> <p style="text-align: center;"><b>Badge Requirements (9 credits)</b></p> <p>All candidates are required to complete at least one of the badges shown in the next column.</p> <p><small>*overlaps with 1 or more badge requirements          **may be listed under a CIS designation</small></p>	<p><b>Biomedical Informatics:</b>          CIS 661 Introduction to Medical and Bioinformatics          CIS 665 Clinical Information Systems  <b>AND</b> one of the following:          CIS 635 Knowledge Discovery and Data Mining          CIS 660 Data Engineering*          CIS 671 Information Visualization</p> <p><b>Cybersecurity:</b>          CIS 615 Information Security Principles  <b>AND</b> two of the following:          CIS 518 Secure Software Engineering*          CIS 553 Ethical Hacking          CIS 555 Applied Cryptography          CIS 616 Data Security and Privacy          CIS 617 Digital Forensics and Investigations          CIS 619 Data Analytics for Cybersecurity</p> <p><b>Data Analytics:</b>          CIS 635 Knowledge Discovery and Data Mining          CIS 671 Information Visualization  <b>AND</b> one of the following:          CIS 677 High-Performance Computing          CIS 678 Machine Learning</p> <p><b>Database Management:</b>          CIS 673 Principles of Database Design  <b>AND</b> two of the following:          CIS 635 Knowledge Discovery and Data Mining          CIS 660 Data Engineering*          CIS 665 Clinical Information Systems          CIS 671 Information Visualization          CIS 676 Database Architecture          CIS 679 Special Topics in Database Management</p> <p><b>Distributed Computing:</b>          CIS 654 Computer Networking*          CIS 656 Distributed Systems*          CIS 658 Web Architectures</p> <p><b>Information Systems Management:</b>          CIS 641 Systems Analysis and Design*          CIS 642 IS Project Management*          CIS 643 Information Systems Policy and Strategy</p> <p><b>Software Design and Development:</b>          SE 511 Introduction to Software Engineering (CIS 611)**  <b>OR</b> CIS 641 Systems Analysis and Design*          CIS 657 Mobile Application Development  <b>OR</b> CIS 658 Web Architectures          CIS 660 Data Engineering  <b>OR</b> CIS 673 Principles of Database Design*</p> <p><b>Software Engineering:</b>          Choose three of the following:          CIS 518 Secure Software Engineering*          SE 511 Introduction to Software Engineering (CIS 611)**          SE 512 Requirements Specification* (CIS 612)**          SE 513 Software Testing* (CIS 613)**</p> <p><b>Web and Mobile Computing:</b>          CIS 655 Cloud Application Development          CIS 657 Mobile Application Development          CIS 658 Web Architectures</p> <p><small>*overlaps with 1 or more core requirements</small></p>