

Master of Science – Applied Computer Science

2025-2026

DEGREE REQUIREMENTS	BADGE REQUIREMENTS
<p style="text-align: center;"><u>Admission Requirements</u></p> <p>Candidates must satisfy all of the following:</p> <ol style="list-style-type: none"> 1. Grade point average of 3.0 (on a 4.0 scale) from all undergraduate coursework. Those with a GPA below 3.0 must contact the College of Computing for advising. 2. Resume detailing work experiences and accomplishments. 3. Recommendations: submit acceptable recommendations from at least two individuals attesting to the likelihood of the candidate's successful completion of the program. <p style="text-align: center;"><u>Degree Requirements</u></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;">Core Requirements (9 credits)</p> <p>Students are required to complete one course in three of the following categories.</p> <p>Data Engineering:</p> <ul style="list-style-type: none"> CIS 660 Data Engineering* CIS 673 Principles of Database Design* <p>Networking:</p> <ul style="list-style-type: none"> CIS 654 Computer Networking* CIS 656 Distributed Systems* <p>Management of Systems Development:</p> <ul style="list-style-type: none"> CIS 641 Systems Analysis and Design* CIS 642 IS Project Management* <p>Software Engineering:</p> <ul style="list-style-type: none"> 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 style="text-align: center;">Elective Requirements (9 - 12 credits)</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;">Capstone Requirements (3 or 6 credits)</p> <p>Each candidate must complete either the project course or the thesis two-course option.</p> <p style="text-align: center;">CIS 693 Master's Project</p> <p>OR</p> <p style="text-align: center;">CIS 690 Thesis Research Preparation AND CIS 695 Master's Thesis</p> <p style="text-align: center;">Badge Requirements (9 credits)</p> <p>All candidates are required to complete at least one of the badges shown in the next column.</p>	<p>Biomedical Informatics:</p> <ul style="list-style-type: none"> CIS 661 Introduction to Medical and Bioinformatics CIS 665 Clinical Information Systems <p>AND one of the following:</p> <ul style="list-style-type: none"> CIS 635 Knowledge Discovery and Data Mining CIS 660 Data Engineering* CIS 671 Information Visualization <p>Cybersecurity:</p> <ul style="list-style-type: none"> CIS 615 Information Security Principles <p>AND two of the following:</p> <ul style="list-style-type: none"> 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>Data Analytics:</p> <ul style="list-style-type: none"> CIS 635 Knowledge Discovery and Data Mining CIS 671 Information Visualization <p>AND one of the following:</p> <ul style="list-style-type: none"> CIS 677 High-Performance Computing CIS 678 Machine Learning <p>Database Management:</p> <ul style="list-style-type: none"> CIS 673 Principles of Database Design <p>AND two of the following:</p> <ul style="list-style-type: none"> 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>Distributed Computing:</p> <ul style="list-style-type: none"> CIS 654 Computer Networking* CIS 656 Distributed Systems* CIS 658 Web Architectures <p>Information Systems Management:</p> <ul style="list-style-type: none"> CIS 641 Systems Analysis and Design* CIS 642 IS Project Management* CIS 643 Information Systems Policy and Strategy <p>Software Design and Development:</p> <ul style="list-style-type: none"> SE 511 Introduction to Software Engineering (CIS 611)** OR CIS 641 Systems Analysis and Design* CIS 657 Mobile Application Development OR CIS 658 Web Architectures CIS 660 Data Engineering OR CIS 673 Principles of Database Design* <p>Software Engineering:</p> <p>Choose three of the following:</p> <ul style="list-style-type: none"> 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>Web and Mobile Computing:</p> <ul style="list-style-type: none"> CIS 655 Cloud Application Development CIS 657 Mobile Application Development CIS 658 Web Architectures

*overlaps with 1 or more badge requirements

**may be listed under a CIS designation

*overlaps with 1 or more core requirements