

Master of Science – Software Engineering

2025-2026

REQUIREMENTS	SOFTWARE ENGINEERING TRACKS
<u>Admission Requirements</u> 1. Grade point average of 3.0 (B) from all undergraduate coursework. 2. Resume detailing work experiences and accomplishments. 3. Personal statement of career goals and background experiences, including an explanation of how this program will help achieve educational and professional objectives. 4. Recommendations: Two professional or academic recommendations received online, addressing the candidate's potential for graduate study completion. You will provide the emails of two references, and they will be sent a link to complete their online recommendation. 5. Candidates must possess knowledge of a programming language equivalent to 2 or 3 undergraduate courses. 6. Candidates must possess knowledge of applied statistics. <u>Degree Requirements</u> The artificial intelligence (M.S.) program requires a minimum of 33 credits. Core Courses (12 credits) Required: • SE 511 Introduction to Software Engineering • SE 512 Requirements Specification Choose 2 of the following courses: • SE 513 Software Testing • SE 522 Software Architecture and Design • SE 530 Software Construction and Delivery • SE 537 Software Quality Assurance Electives Requirements (3-6 credits) Any 500 or 600 level CIS course can be used as an elective. Students will require 3 additional elective credits if the project option of the capstone is chosen. Capstone Requirements (3 or 6 credits) Each candidate must complete either the project course or the thesis sequence. Please contact the graduate program director one semester prior to starting any of these. Project course: • CIS 693 Master's Project Thesis sequence: • CIS 690 Thesis Research Preparation • CIS 695 Master's Thesis Software Engineering Track Courses (12 credits) All candidates are required to complete one of the listed tracks (see next column)	Artificial Intelligence and Software Development Choose 2 or 3 of the following: • AI 501 Introduction to Artificial Intelligence • CIS 671 Information Visualization • CIS 678 Machine Learning Choose 1 or 2 of the following: • AI 502 Introduction to Generative AI • AI 511 AI Ethics and Bias • AI 531 Natural Language Processing • AI 541 Edge AI • AI 545 Machine Learning Operations • AI 551 Reinforcement Learning • SE 536 Data Analytics in Software Engineering • SE 537 Software Quality Assurance Data Driven Software Development Choose 4 of the following: • CIS 635 Data Mining • CIS 654 Computer Networking • CIS 655 Cloud Applications Development • CIS 660 Data Engineering • CIS 671 Information Visualization • CIS 678 Machine Learning • SE 536 Data Analytics in Software Engineering Full-Stack Development Choose 4 of the following: • CIS 641 Systems Analysis and Design • CIS 655 Cloud Applications Development • CIS 657 Mobile Applications Development • CIS 658 Web Architectures • SE 531 Software Virtualization • SE 537 Software Quality Assurance IoT and Cloud Computing Required: • CIS 654 Computer Networking • CIS 655 Cloud Applications Development Choose 2 of the following: • AI 541 Edge AI • SE 531 Software Visualization • SE 536 Data Analytics in Software Engineering Software Security and Assurance Choose 2 or 3 of the following: • CIS 615 Information Security Principles • CIS 616 Data Privacy and Security • CIS 619 Data Analytics for Cybersecurity Choose 1 or 2 of the following: • CIS 518 Secure Software Engineering • CYB 520 Trustworthy AI • SE 537 Software Quality Assurance