ARTIFICIAL INTELLIGENCE, MS

The Master of Science in Artificial Intelligence (MSAI) prepares students to design, develop, and deploy intelligent systems that address complex real-world challenges. The program integrates rigorous foundations in machine learning, data science, and computational methods with hands-on, project-based learning experiences. Students gain both the theoretical depth and applied expertise needed to build scalable, responsible AI solutions. This program prepares students to develop AI-driven solutions in various domains, including healthcare, finance, cybersecurity, and automation. Graduates leave prepared to contribute thoughtfully and effectively to the rapidly evolving field of artificial intelligence.

Admission Requirements

In addition to Roosevelt University's customary graduate admissions requirements, including a completed bachelor's degree, the MSAI program includes several program-specific academic prerequisites to ensure students are prepared for the mathematical and computational rigor of the curriculum.

Applicants must have an undergraduate GPA of 2.7

Applicants are expected to have demonstrated prior coursework or knowledge in the following areas:

- Calculus: Understanding of derivatives and integrals, equivalent to successful completion of Calculus I (MATH 231 CALCULUS I or MATH 202 APPLIED CALCULUS FOR HEALTH SCIENCE AND BUSINESS) or a comparable course.
- Linear Algebra: Familiarity with vectors and matrices, as covered in Linear Algebra (MATH 246 LINEAR ALGEBRA) or a similar linear or matrix algebra course.
- Discrete Mathematics: Foundational knowledge of graphs and combinatorics, such as that offered in Discrete Structures (MATH 245 DISCRETE STRUCTURES) or equivalent.
- Introductory Programming: Basic programming experience in any modern language, equivalent to Computer Science I (CST 150 COMPUTER SCIENCE I) or another introductory programming course.

These prerequisites ensure that admitted students are prepared to succeed in the program's core coursework, which includes mathematically intensive topics such as machine learning, deep learning, and optimization, as well as computationally intensive work in artificial intelligence systems and applications. Students who are otherwise admissible but lack one or more of these prerequisites may be advised to complete bridge courses prior to or during the early stages of the program.

Degree Completion Requirements

To earn the MS in Artificial Intelligence, students must complete at least 30 credit hours of course work, including four required courses, four 400-level CST electives, and either two courses for thesis or project work as a capstone requirement or two additional 400-level CST electives. Courses must be chosen in consultation with an advisor.

Any courses that were taken as part of the undergraduate program may not be repeated for graduate credit. Because of the rapidly changing nature of this field of study, computing courses taken more than four years ago cannot be counted towards degree requirements unless the student has been continuously registered during the time-frame in question (excluding summers).

An overall grade point average of B (3.0) or higher must be maintained in graduate-level courses with no more than two grades of C. A graduate course can only be repeated once; no more than two courses can be repeated.

Requirements

Code	Title	Credit Hours
Core Courses:		
CST 411	INTELLIGENT SYSTEMS	3
CST 421	DATA MINING	3
CST 461	DEEP LEARNING	3
CST 486	INFORMATION RETRIEVAL	3
Select four 400 level Computer Science graduate courses as electives, to develop specialized skills or pursue advanced topics in artificial intelligence.		**12**
Project/Thesis/Course Options		**6**
Total Credit Hours		**30**

A student must choose one of the following three options as part of the degree requirements.

1. **Thesis option**. A student must select a willing faculty mentor from the CS division and register for CST 485 THESIS/PROJECT RESEARCH in their second-to-last semester. During the last semester, they must register for CST 490 MASTERS THESIS.
2. **Project option**. A student must select a willing faculty mentor from the CS division and register for CST 485 THESIS/PROJECT RESEARCH in their second-to-last semester. During the last semester, they must register for CST 499 MASTERS PROJECT.
3. **Course option**. A student must select a minimum of 6 semester hours (in addition to the 12 semester hours electives already described) of 400 level Computer Science graduate courses as electives.

Note(s):

- Students must get consent to register for CST 494, CST 495, CST 485, CST 499 from a faculty member from the CS division. At the end of each of these courses, a committee consisting of minimum 3 members (where the majority of the members must be from the CS division AND at most two of the members can be from outside the division) will review the work performed and approve for successful completion of these courses.
- For students choosing the all courses option at most 9 semester hours may be counted towards the degree from among CST 494 Internship, CST 495 Independent Study, and CST 48x Special Topics. Students choosing the thesis or project capstone may have at most 6 semester hours counted towards the degree from among CST 494 Internship, CST 495 Independent Study, and CST 48x Special Topics.
- A student who has chosen the thesis or a project options, but who has not yet completed it, must maintain continuous registration during fall and spring semesters until completion of the project by registering for the appropriate zero-credit course (course number followed by "Y"). Students who have not maintained continuous registration for thesis or other final projects will be required to register for all intervening fall and spring semesters prior to graduation.

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1

Fall	Credit Hours	Spring	Credit Hours
CST 4XX	3	CST 411	3
CST 4XX	3	CST 461	3
CST 4XX	3	CST 4XX	3
	9		**9**

Year 2

Fall	Credit Hours	Spring	Credit Hours
CST 486	3	CST 421	3
CST 485	3	CST 490	3
	6		**6**

Total Credit Hours 30