**Graduate Advising Handbook**

Master of Science in
Artificial Intelligence

This handbook represents our best efforts to provide accurate information, but all information contained in this document is subject to change.

 

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**Introduction**

The Master of Science (MS) degree program in Artificial Intelligence at RIT consists of a set of required IDAI core courses, multiple elective courses, and the completion of a capstone course or a thesis. Five core courses provides students with essential and transferable skills and knowledge about fundamentals of AI, mathematics for AI, machine learning, research methods in AI, and ethical-societal principles in AI. Deepening knowledge, students select a personalized set of electives courses from relevant areas (machine learning, robotics, natural language and speech processing, neuromorphic computing, sociotechnical analytics and policy for AI, or vision).

This program has been designed to support three important outcomes for our graduates. The outcomes are:

* Students can demonstrate foundational skills in artificial intelligence
* Students can apply artificial intelligence skills within a specified domain area
* Students can evaluate and investigate an active area of research in artificial intelligence

*Related MS Programs at RIT:*

* Applied Statistics (College of Science)
* Information Sciences and Technologies (College of Computing and Information Sciences)
* Data Science (College of Computing and Information Sciences)
* Computer Science (College of Computing and Information Sciences)
* Computer Engineering (College of Engineering)
* Electrical Engineering or Microelectronic Engineering (College of Engineering)
* Experimental Psychology (College of Liberal Arts)
* Human-Computer Interaction (College of Computing and Information Sciences)
* Industrial and Systems Engineering (College of Engineering)

**General Information**

Applications for admission are processed in fall and early spring, and graduate students generally begin their programs of study in the MS in the Fall semester. If students have been assigned pre-program bridge coursework at the point of admissions, it is completed online during the Short Summer I term in the summer prior to commencing the MS coursework, with a minimum final grade of B required to pass bridge coursework. Other course offerings are limited during the summer term. There is not a specific deadline for applications, but the number of students accepted each year is limited and you are strongly encouraged to apply early. In addition, applicants should be aware that there is some lead time to process your application. It is advantageous to apply early. Applications are submitted online and more information on how to apply can be obtained from the program’s website (<https://www.rit.edu/study/artificial-intelligence-ms>) or from:

Graduate Enrollment Services

Rochester Institute of Technology

Bausch & Lomb Center

58 Lomb Memorial Drive

Rochester, New York

14623-5604

gradinfo@rit.edu

[http://www.rit.edu](http://www.rit.edu/)

**Learning Format**

The program is offered in-person at the RIT main campus in Rochester, New York. International students seeking an I-20 to reside in the United States while studying in this program should note that they usually enroll for nine (9) credits per semester, and are required to be enrolled for at least six (6) credits per semester in on-campus courses.

Online courses do not qualify for the 6-credit requirement. A required weekly recitation allows blended-format courses, which meet both on campus and online, to count toward the 6-credit residency requirement.

**Entrance Requirements**

The applicant should have a baccalaureate degree and a cumulative grade-point average of 3.0 (B) or above from an accredited institution of higher education using the US system of grading, or equivalent in another system. In the British system, students should have at least a first class degree. Knowledge of computing, programming, and a substantial foundation in mathematics are expected.

This program welcomes students from multiple disciplinary backgrounds. One or both of two pre-program summer bridge courses in mathematics (MATH 620) and in programming for data (ISCH 620) may be assigned to admitted students, depending on prior preparation. These courses are designed to assist students in meeting the computing and mathematics prerequisites for the MS program.

**Transfer Credits**

A student may propose to transfer into the in MS in Artificial Intelligence program up to six graduate semester credits that were taken at another university with a grade of B or better. Courses must have been taken within the past two years. The MS in AI graduate director will evaluate these proposals. Official transcripts along with the syllabi of the transfer courses must be sent to:

Graduate Enrollment Services

Rochester Institute of Technology

Bausch & Lomb Center

58 Lomb Memorial Drive

Rochester, New York

14623-5604

gradinfo@rit.edu

[http://www.rit.edu](http://www.rit.edu/)

**GRE Scores**

GRE scores are required from applicants whose undergraduate degrees are from institutions abroad. Other applicants may wish to include GRE scores to enhance their applications (e.g., when the undergraduate GPA is less than 3.0). Official test results must be submitted to:

Graduate Enrollment Services

Rochester Institute of Technology

Bausch & Lomb Center

58 Lomb Memorial Drive

Rochester, New York

14623-5604

gradinfo@rit.edu

[http://www.rit.edu](http://www.rit.edu/)

**TOEFL Scores**

English language testing scores, such as the *Test of English as a Foreign Language* (TOEFL) score, is required for every applicant for whom English is not their native language with a score of at least 88 on the internet-based test. Exceptions can be made for an applicant whose academic record is exceptionally strong. Upon arrival at RIT, students whose native language is not English may be required to take the *Michigan English Test* and follow the recommendations of RIT’s English Language Center.

**Financial Aid and Employment Opportunities**

Information on tuition, registration student services, etc. can be found online at [*http://www.rit.edu/grad*](http://www.rit.edu/grad). RIT offers various forms of financial aid for graduate students.

The School of Information (iSchool) awards partial tuition merit-based scholarships each year. Merit-based scholarships are based on the applicant’s application, including grades, courses taken, academic record, letters of recommendation, and GRE scores. The continuation of this scholarship depends on maintaining good academic standing with at least a  3.0/4.0 (B average) and adhering to RIT’s academic honesty expectations. The scholarship applies to credit-bearing courses.

In addition, iSchool employs several graduate students. Positions may offer a scholarship and/or provide an hourly wage based on hours of work. The amount depends on departmental needs and the applicant’s qualifications. We require very specific skills for these assignments as well as in-person interviews. We make position assignments during the academic year for the following fall semester, although openings may unexpectedly occur. If you wish to be considered, please make sure that we have received your full application by March 1st of the preceding school year.

* Qualified graduate students may apply to be lab assistants and graders.
* A student can earn income each semester by working on campus. For more information visit the Office of Student Employment located in room 1350 in the University Services Center (USC), 585-475-2631 or visit <http://www.rit.edu/emcs/seo>.

**Curriculum**

The MS in AI program of study consists of 30 credits. At the end, you will pursue a capstone or a thesis.

**Bridge, Core, and Elective Courses and Culminating Experience**

*Bridge Courses (0-2 summer courses, as assigned)*

There are prerequisite skills a student must possess prior to beginning the MS in AI degree program. Students who are admitted, but lack these skills, will be required to make up the prerequisite skills before beginning the degree program. Examples are listed below.

* OOP, data structures, algorithms ISCH 620 Graduate Intro. to Programming with Data
* Calculus, statistics, matrix/discrete theory MATH 620 Introductory Mathematics for AI

NOTE 1: Depending on area, multiple courses may be expected (e.g., programming, calculus). Contact the gradute program director.

*Core Courses:*

* IDAI 610 Fundamentals of Artificial Intelligence -- 3 credits
* IDAI 620 Mathematical Methods for Artificial Intelligence -- 3 credits
* IDAI 700 Ethics of Artificial Intelligence -- 3 credits
* IDAI 710 Fundamentals of Machine Learning -- 3 credits
* IDAI 720 Research Methods for Artificial Intelligence -- 3 credits

*Elective Courses (choose 3 or 4)*

Students matriculated in this degree will complete three elective courses in the thesis option (9 credits) or four elective courses in the capstone option (12 credits).

Approved elective courses are on the MS in AI website, grouped under six themes: *machine Learning, natural language and speech processing, neuromorphic computing, robotics*, *sociotechnical analytics and policy of artificial intelligence*, and *vision*. Students can choose electives grouped under different themes: <https://www.rit.edu/study/artificial-intelligence-ms#curriculum>.

In rare cases, students can petition for approval to include another course complementary to the degree program as an elective.

*Culminating Experience (choose 1)*

* Capstone option
	+ IDAI 780 Capstone Project -- 3 credits
	+ Another elective course -- 3 credits
* Thesis option
	+ IDAI 790 Research and Thesis -- 6 credits

Your program of study must follow one of the paths outlined above. Only the MS in AI graduate director can approve changes of a student’s program of study.

### Any grade lower than C is considered failing and the course will not fullfill a program requirement. However, they are calculated into the graduate GPA. If a student receives a C-, D, or F grade they should meet with the MS in AI academic advisor as soon as possible to discuss the repercussions and create a recovery plan.

**Cooperative Education**

Graduate students are eligible for *optional* co-op work consisting of up to two semesters of full-time employment. A co-op position is not assured. To be eligible, a student must have completed assigned bridge coursework and between 15 credits to two semesters of MS on-campus coursework, be a full-time student in good standing (cumulative GPA of 3.0 or better or a semester GPA of 3.0 or better in the semester immediately preceding the requested co-op term), and attend a co-op orientation at RIT. Information is available from the Office of Career Services and Cooperative Education (<https://www.rit.edu/emcs/oce/>).

Co-op positions must be secured by the beginning of the academic term in which you wish to co-op. **Permission for mid-semester co-ops will not be granted**. The minimum is **35 hours of co-op work per week** for the semester's duration (summer, fall, or spring). When the student secures an approved co-op offer, the student must then report the co-op through RIT’s co-op office’s website. Once reviewed by their office, the iSchool can enroll you in co-op.

**Probation and Suspension**

Any matriculated graduate student whose Program Grade Point Average falls below a 3.0 (B average) after 12 semester credit hours have been completed will be placed on probation and counseled by the departmental advisor concerning continuation in the graduate program. Those students placed on probation must raise their Program Cumulative GPA to the 3.0 level within 9 semester credit hours or risk suspension from the graduate program. Should it be necessary to suspend a graduate student for academic reasons, the student may apply for readmission to the dean of the college or designee (department head, program director, etc.) upon demonstration of adequate reason for readmission. Re-admission is **not** guaranteed.

**Student Advising**

**Faculty Advisor**

Students are assigned to the MS in AI graduate director as a faculty advisor. Faculty can provide the best advice about career paths, academic choices, and routes to a successful career after graduation. Students may also approach any faculty member with whom they feel comfortable, for advice, or for advising a thesis.

**Graduate Academic Advising**

A graduate academic advisor is available to assist and advise graduate students and is able to answer day-to-day questions, such as deciding what to take next term, dealing with a course that you’re having trouble in, completing the paperwork that goes along with being a student at RIT, or just to talk with when you’re feeling a bit overwhelmed.

**MS Capstone or Thesis**

The Master’s thesis or capstone is the culminating experience of the MS program. There are two options for how students may fulfill this requirement for their degree: the capstone project option or the thesis option.

***Capstone Project Option***

A capstone project is a large body of work, which you undertake in IDAI 780. This will involve a nontrivial computational or theoretical project, associated assignments, written reporting, and presenting. Details will be provided by your IDAI 780 Capstone Project instructor. Original insight into a problem is desirable. You will receive information on the capstone report form from the IDAI 780 instructor, and it will at least include:

* motivating the project and enumerating its contributions
* describing background and relevant prior work in the area
* detailing the methods, resources, and evaluation used
* describing the deliverables of the capstone
* discussing the significance of the outcomes and deliverables
* reflecting on limitations and ethical impacts
* providing appropriately referenced citations

***Thesis Option***

A small number of students, especially those with an interest in AI research or doctoral study, may choose the thesis option. The thesis topic and committee must be approved by the graduate director. As compared to a capstone, a thesis deals with research questions and involves original insight at the Master’s level, and it requires enrollment in IDAI 790 Thesis and Research (6 credits). The expectations for background research and justification are substantially higher for a thesis. It is expected that the quality of research produced in a thesis would be suitable for submission as a research paper to a conference, a journal, or other form of public dissemination, and in general, students who are pursuing a thesis option are expected to submit their research to such venues. Additionally, the difference between a capstone and thesis is the nature of the work involved. A thesis explores an area of theoretical or use-inspired original research. From the perspective of the novelty of the project and its overall contribution to knowledge in the field, the requirements are higher for the thesis. It requires more depth and the student should develop a substantial understanding of the topic through background library research, their own original research, which mostly includes computational experimentation, etc. There is both a formal presentation component (thesis defense) and a formal written component (thesis manuscript) for students in the thesis option. The Master’s thesis will be deposited in the RIT library. For additional process details, please contact the graduate director prior to enrolling in IDAI 790.

**Full Time Equivalency**

Continued, active registration at RIT can be important for students who must maintain full-time student status, such as students with loans to repay or foreign student visas to maintain. Students working on their thesis or capstone may be registered for fewer than 9 credits. To be considered a full-time student even though you are registered for fewer than 9 credits, you must complete a *full-time equivalency form*. The iSchool allows you to apply for full-time equivalency for a maximum of one year. You must have a GPA of at least 3.0. Please see theMS in AI academic advisor or graduate director to complete this documentation.

**Miscellaneous Information**

**iSchool Student Services Office**

The iSchool Student Services office is in Golisano Hall (GOL/070, Room 2100). The phone number is 585-475-2700; office hours are 8:30am to 4:30pm Monday through Friday. The office maintains records for each matriculated graduate student. Bring your policy and procedure questions to the staff in this office (e.g., grade problems, transfer of programs, transfer of credit, forms, registration). This office can assist with change of program, intent to graduate, add or drop a course, and register for project or thesis.

To help us maintain accurate records, make sure we have the correct spelling of your name, your current address, your student number, and your day and evening telephone numbers.

**The 7-year Rule for Completing a Degree**

You may not use any courses for graduation that were taken more than seven years ago (this rule does not apply to bridge courses).

**Guidelines for Petitioning for an Extension Beyond the 7-year Limit**

In cases where the fulfillment of degree requirements extends beyond the 7 year limit, the MS in AI graduate director must petition the Graduate Council for a formal extension.

*Please note the following important requirements for these petitions:*

Application for an extension should be submitted to the MS in AI graduate director at least one full semester prior to the expiration of the seven-year time limit.

When a student’s program is projected to exceed the seven-year limit, they should not be encouraged to take courses or work on a thesis or final project until a decision has been made by the Graduate Council.

A student can apply through the MS in AI graduate director for an extension of the 7-year rule.

*The student has the following options to provide evidence that the student’s knowledge of the course(s) beyond the seven year limit are current:*

* A student can retake the course(s) at RIT and pass the course with a passing grade.
* A student can retake the course(s) at another institution and pass the course with a passing grade. The MS in AI graduate director must approve the course selection, before the student is allowed to register.

*Documents in the petition submitted to the chair of Graduate Council by the MS in AI graduate director should include the following:*

* Petition support signed by Dean’s office.
* Detailed plan for completion of degree, addressing each unmet requirement. Generally, no more than one calendar year’s extension will be granted.
* Circumstances that delayed completion of degree.
* RIT graduate transcript (and, where relevant, undergraduate transcript).
* Current résumé.
* A copy of the thesis description or final project proposal (if completed).
* A list of courses that will be older than seven years (and by how much) at the projected date of graduation. At the time of certification, the Director of Graduate Programs will provide written documentation of the currency of overdue courses.
* Letter of support from the MS in AI graduate director or faculty advisor.

**Loss of Student Status**

*You may be withdrawn from the program if:*

* You fail to register for courses for three successive semesters.
* You have not registered for capstone (IDAI 780) or thesis (IDAI 790) within one year after completing your coursework.
* You have not completed your thesis or project within one year after registering for project or thesis.

*If you are in danger of being withdrawn, please see the MS in AI graduate director.* If you are withdrawn your academic status will become inactive.

**Academic Honesty**

Academic honesty is an expectation of all students at RIT. Any act of improperly representing another person’s or an automated system’s work as one’s own is an act of academic dishonesty. The RIT code of academic conduct is documented in the university’s Policies and Procedures manual:

<http://www.rit.edu/academicaffairs/policiesmanual/sectionD/D8.html>

<http://www.rit.edu/academicaffairs/policiesmanual/sectionC/C0.html>

 **RIT Non Discrimination Statement**

RIT does not discriminate. RIT promotes and values diversity within its workforce and provides equal opportunity to all qualified individuals regardless of race, color, creed, age, marital status, sex, gender, religion, sexual orientation, gender identity, gender expression, national origin, veteran status, or disability.

**Appendix A – Frequently Asked Questions**

**Frequently Asked Questions**

1. **Is there a scholarship available?** All full-time and some part-time students who do not have significant outside sources of funding and who have strong academic and/or employment backgrounds are eligible to receive a scholarship. Once assigned, this scholarship is for two semesters of support.

2. **What about my scholarship if my studies exceed two semesters?** While economic contingencies cannot be foreseen, scholarships are generally renewed as long as the student is making steady progress on the degree and remains in good standing (attains a GPA of 3.0 or better). You must request such a renewal/ requests for renewals must be made, in writing, using the RIT Graduate Scholarship Application form (see the Student Services office) at least one semester before the extension is desired.

3. **Does scholarship cover courses taken in summer terms?** Usually not. However, upon request, the graduate director or academic advisor may extend a scholarship to cover summer term courses.

4. **Are there graduate assistantships available?** The department offers a small number of graduate assistantships (GA) positions yearly. To apply, you must fill out and submit an application to the graduate coordinator no later than **March 1st** for the next academic year. Assistantships are granted for a maximum of two semesters.

5. **May I work (co-op) as part of my studies?** Graduate co-op is available. It is optional and you may do at most one (1) co-op semester prior to capstone completion. You must meet the requirements for co-op and ensure that your job is appropriate before beginning work. See the graduate coordinator and our representatives from Career Services and Cooperative Education for assistance with this. However, it is important that working does not interfere with completing your MS requirements and obtaining the degree.

6. **How do I get started with a thesis?** You will likely have ideas from your coursework, and you can always seek the help of a faculty member with whom you have a good relationship. You can also complete a capstone.

7. **I am an international student. Are there special study rules I should know about?** Yes. International students must take at least 6 credits per term on campus.

8. **May I take other courses in place of those indicated for the program?** Possibly – depending upon the reason and your background. Any and all changes to your plan of study must be pre-approved by the MS in AI graduate director or academic advisor. If this occurs, you would take another course instead. This does not apply to any prerequisite courses.