

Comparing the IDAI 780 Capstone Project Course and the IDAI 790 Research and Thesis: How to Decide?

The following table summarizes some key differences between the IDAI 780 and IDAI 790 options, to help students select which option is best for them and understand the requirements for each.

	Capstone course option	Thesis option
<i>How popular is this option?</i>	Most students in the AI program are expected to select the course option for their capstone experience.	A small number of students may select the Thesis option – maybe the student is already engaged in some research with a faculty member or has an interest in graduate education beyond their MS degree.
<i>How much effort should the capstone experience be for this option?</i>	The capstone project course is a three-credit course, with corresponding effort.	Thesis requires the effort devoted to two (2) three-credit courses.
<i>How do students begin to pursue this option?</i>	Students enroll in the IDAI 780 Capstone Project course, in which they develop and implement a project.	Students interested in the thesis option are encouraged to learn about the research expertise of MS in AI faculty (see the list on the program website) as early as possible and arrange with a faculty member about serving as their thesis advisor the semester prior to enrolling in IDAI 790 Research and Thesis, completing the corresponding form (<i>Planning and Proposal Approval Form for IDAI 790 Research and Thesis</i>). Students often engage in an ongoing research project of the faculty advisor or identify an original research topic that intersects with the expertise of the faculty advisor.
<i>What are the outputs and artifacts?</i>	The IDAI 780 Capstone Project course will include assignments provided by the instructor, including delivering presentations and writing reports. The culminating milestone is a high-quality technical report about the project in addition to a poster presentation to MS in AI faculty at the end of the term.	IDAI 790 Research and Thesis involves regular one-on-one work with the thesis faculty advisor. The two culminating milestones are an oral or signed defense and a written thesis, submitted three weeks before the defense. The defense must be scheduled before the end of the semester and details provided for public announcement no later than two weeks before the defense. The deposit takes place before the semester’s deposit deadline.
<i>What is the course that students enroll in during the semester(s) when the main effort of this capstone is occurring?</i>	IDAI 780 (3 credits) – Commonly, students enroll in these 3 credits during a single semester.	IDAI-790 (6 credits) – Commonly, students enroll in these credits in their final spring semester. Subject to approval from the student’s faculty thesis advisor, they may enroll in 6 credits spread across terms (3 + 3).

	Capstone course option	Thesis option
<i>When may I register?</i>	Students must have completed IDA 720 with a passing grade prior to registering for IDAI 780 or IDAI 790.	
<i>When must a proposal be written?</i>	Students already prepared a proposal in IDAI 720 and may use this for their capstone project. Alternatively, the student may use a capstone project described by the IDAI 780 instructor.	The thesis plan is a written one-page document appended to the required <i>Planning and Proposal Approval Form for IDAI 790 Research and Thesis</i> . It must be approved (signed by the MS in AI graduate director, the faculty advisor, and the members of the thesis committee), before the student is permitted to enroll in IDAI 790. The student is expected to provide their committee and the MS in AI graduate director and academic advisor with a thesis draft in progress by the midpoint of their progress through the six credits of IDAI 790, with at least half of the anticipated thesis chapters drafted, and should receive feedback from both advisor and committee members to prepare for the final thesis document and the defense.
<i>How is the final report deposited for this option?</i>	The final report is submitted to the IDAI 780 instructor who transfers the report to iSchool and the MS in AI graduate director.	The student's final thesis document will be bound and reside in RIT's library archives. Digital copies must be provided to iSchool and the MS in AI graduate director. See the "Final Thesis Deliverables" section for details.
<i>How many members are on the committee?</i>	Not applicable.	One faculty advisor as chair, plus two readers (committee members).
<i>When is the committee formed?</i>	Not applicable.	The student must identify a faculty member who is willing to serve as the advisor for the thesis project as early as possible (generally, at least the semester prior to enrollment in IDAI 790). The entire committee and the MS in AI graduate director must approve the student's thesis proposal; so, the entire committee must have been formed at this time. The thesis planning document is due one week before the semester begins when the student enrolls in IDAI 790. This is a hard deadline.
<i>How am I graded?</i>	IDAI 780 uses the standard grading scale with <i>A</i> through <i>F</i> letter grades, including plus and minus grading.	For IDAI 790, the possible grade outcomes of the thesis defense are <i>pass</i> , <i>pass with revisions</i> , or <i>fail</i> . If <i>pass with revisions</i> , then changes must be completed and approved

	Capstone course option	Thesis option
		by the advisor or committee prior to thesis deposit.
<i>Academic honesty</i>	Any acts of plagiarism or other acts of academic dishonesty will result in an automatic <i>F</i> for IDAI 780 or IDAI 790. If you have any questions regarding plagiarism, you should contact your committee chair before writing or delivering your presentation.	

Additional Information for Thesis

The purpose of a Master’s thesis is to independently create and present a large, interesting piece of original work. The thesis will also be of educational value to the student.

By forming your committee and registering for IDAI 790 you have effectively created a contract between your advisor, committee, and yourself. Your advisor will put time into guiding thesis activities. Failure to complete your thesis within the agreed upon schedule may result in a grade of F. In this case, you will need to write a new proposal, form a new committee, and register for IDAI 790 again, or change into IDAI 780. In both situations, the F grade will remain on your transcript. Additionally, by signing your proposal the committee members agree to serve on your committee for one semester. After that time, they can resign from the committee if they feel the student is not making adequate progress.

Students choosing the project or thesis option must form a committee, composed of three faculty: the faculty advisor, who is also in the role of chair, and two readers as committee members. The function of the faculty advisor is to direct the technical aspects of your project and to ensure that your thesis meets the program’s technical and administrative requirements. The advisor must be on the MS in AI faculty. Readers from the MS in AI faculty are encouraged but the graduate director may make an exception for readers from other units.

The advisor (chair), readers (committee members), and MS in AI graduate director must sign off on your thesis plan document with its appended proposal before you register for thesis. It is most important that you establish a committee before you begin serious work on your thesis project. Failure to do this may cause significant delay in the completion of your degree.

You should meet with your advisor at least twice monthly, and often the advisor will ask you do so weekly. This includes providing progress reports. At the mid-point, you should share a draft of the thesis with at least half of the thesis chapters including a timeline for thesis completion with your advisor and your committee members. They will provide feedback on your progress or may report concerns they may have to your advisor. Your committee must be provided with your final thesis three weeks prior to your defense.

Instructions on what to include in your proposal is in the thesis planning form. Please note that the process of developing and writing a proposal that your faculty will approve is a non-trivial task that will require substantial time and effort. Therefore, it is the responsibility of the student to begin working on this proposal well in advance of the semester when thesis credits are desired. If a student waits until a few weeks before the semester to begin work on a proposal or to begin contacting faculty members, it is extremely unlikely that a proposal will be successfully completed and signed before the beginning of the semester. In addition, if your research involves the participation of human subjects, then you will need to obtain Institutional Review Board (IRB) approval before you can begin your work. It is strongly recommended that you write and submit an application to the IRB at least two months before you plan on beginning any recruitment, pilot testing, or studies with human participants – otherwise, you may experience a delay in your ability to complete your proposed project.

The signed and approved proposal is required in advance of registration. Alternatively, the student will need to wait until a later semester to enroll in project or thesis credits, after their proposal is signed and approved. Students who would like to register for thesis credits in spring semester should not wait until the end of fall to begin the planning. Because an MS in AI program faculty member is monitoring your work, and others are signing off on your thesis plan, this rules out submitting a proposal for work that has already been completed.

If you wish to complete a thesis that extends a project from an internship or an employer, please note that the report and artifacts such as code, must be made available for other students to read in the future. The committee sets the requirements - not the employer. It is your responsibility to assure that your employer's requirements for confidentiality are respected. As an additional consideration regarding confidentiality, your final defense presentation is announced and open to the public. Your final thesis will be deposited in the RIT library and available to anyone who requests it.

Approaching the End of Your Capstone, Preparing to Schedule Your Defense

As the student is nearing the conclusion of IDAI 790, the student must submit their final thesis and schedule their defense presentation, following the timeline below. (Because the end of the semester is busy for faculty, it would be ideal for the student to provide the thesis to their advisor and committee even earlier than the dates below.)

(At least) A Month Prior to the Desired Defense Date: The student should provide a full draft of their thesis to their committee chair, who may give the student advice on improvements that are necessary to the document, prior to sharing it with the entire committee.

(At least) Three Weeks Prior to the Desired Defense Date: The student should provide a full draft of their completed thesis to their entire committee. If the student has not already done so, they should ask their committee members for their time availability to identify a good date and time for the defense. The committee members may decide that the student's report is not at a sufficient level of completeness or quality, and they may ask for revisions or additions prior to agreeing that the student is ready to hold a defense presentation. (The committee may later ask for additional revisions or additions to the document at the time of the student's defense presentation.)

(At least) Two Weeks Prior to the Desired Defense Date: If committee members have not communicated to the student and advisor with that the student's thesis is not at a sufficient level of completeness and quality to hold for the defense, then the student should communicate to the iSchool office that they would like to schedule the defense. Please see the details in the "Checklist for the Defense" section below.

On the Day of the Defense: The committee may determine that the student must make additional revisions or additions to the final thesis (or some aspect of the work that had been proposed). The entire committee may ask to see and approve a final version of the thesis that satisfies their concerns (or they may delegate this responsibility to the chair of the committee only), depending on the severity of the revisions required.

After the Defense: If the student passes the defense, and if any revisions or additions to the report had been requested by the committee, the student must prepare a final version of the thesis to address these concerns. The student must provide this thesis to their advisor for their/the committee's approval, prior to producing the final electronic or paper copies of the report. If you are hoping to graduate during a particular semester, you must consult the academic advisor and iSchool office to ensure that you provide the appropriate final deliverables in time to graduate. Thesis students must meet with the library to deposit your final thesis document. Please see the details in the "Final Thesis Deliverables" section below.

Checklist for the Defense (Thesis)

The last step in the process is the defense. After the student has completed the write up of their work and the chair and the readers have approved it, the student defends their work during a 50-minute presentation (usually 30 min presentation + 20 min Q&A). The defense is open to the public.

The student is required to follow the procedures outlined below:

- Schedule the defense and register that scheduling with the department office; assure all committee members are able to attend; reserve the room with the department staff.
- Assure that the room has all the facilities you require (board, markers, projectors, ethernet connection, etc.).
- Provide announcement details at least two weeks prior to the event.
- Verify with the program staff that all necessary paperwork has been completed (including current application for graduation).
- Review your presentation with at least one of your committee members (typically the advisor/chair) before presenting it formally. The defense should take 50 minutes, but you must allow time for questions and discussion. When you rehearse, it should take no more than 30 minutes.
- A rehearsal is highly recommended. Ask a friend or two or a member of your committee to sit through a complete presentation. This is the only way you will know how long it takes and will help in locating the bugs (demos that fail, typos, faulty visuals, etc.) in your presentation.
- Prepare handouts for your presentation consisting of copies of your slides or notes. Discuss with your committee chair how many copies to prepare.
- Usually the defense is held in-person. You may still share a Zoom link with members of the public (including family and friends). If the advisor and committee approve, and there is a rationale for a completely online defense on Zoom, then the graduate director can approve a Zoom-only defense. All members of the committee must be in attendance at the defense.

Final Thesis Deliverables

After passing your defense presentation and after preparing a final version of your thesis (that addresses any concerns to your committee's satisfaction), then you should print and prepare the final versions of your deliverables for the RIT library and the MS in AI program. The program provides templates for (1) how your cover page should appear for a thesis, and (2) an approval page for your advisor to circulate with places for signatures from your advisor and your committee members: https://www.rit.edu/computing/school-of-information#current_students [the MS in AI templates are under the *Forms* section in *Student Resources*].

The final documentation for a thesis requires that you arrange for a bound copy of the thesis for the RIT Library. You may also wish to present your advisor with a bound copy (making it three copies, counting your own). In addition, provide the program staff and the graduate director with copies for the archive of:

- the thesis binding receipt
- the thesis abstract
- the thesis cover page
- the signed thesis approval page
- a digital file, which has the following content:
 - Final thesis in PDF: The filename has to be *report.pdf*
 - Your thesis proposal in PDF: The filename has to be *proposal.pdf*
 - Defense announcement in plain text or PDF: The filename has to be *announcement.pdf/announcement.txt*
 - Any electronic files, code, or other materials your committee has asked you to provide.

For the thesis, the RIT library requires that the printed version of your document that is given to the library already have **signatures from your committee members**. Your advisor should make arrangements to obtain these signatures from the committee after you have printed the final version of your report, and prior

to your depositing the report at the library. Some students bring copies of their thesis signature page, printed on Library-approved-quality paper to their defense, and if the committee is satisfied with the thesis or has only minimal requested revisions/additions, the committee members might agree to sign several copies of the cover page on this day. Then, the student could use this signed cover page as they prepare and print the final version of their thesis document, prior to binding the pages in a library-approved manner.

You will not be certified for your degree until these steps have been completed.