

## Guidance for Conducting and Reporting for the MSAI Capstone Oral Exam

### Purpose

The Capstone Oral Examination serves as an integrative assessment of the student's mastery of the knowledge and skills acquired through their Program of Study (POS). It is conducted by the students' Advisory Committee and evaluates the students' ability to synthesize and articulate concepts from multiple AI subfields represented in their coursework.

*Note – the Capstone Oral Exam is separate from the thesis defense and focuses on coursework, not thesis progress or results.*

### Timing and Scheduling

- **Schedule after having an approved Program of Study form on file and before the thesis defense.** Note that the student must have an advisory committee on file, as this is a prerequisite for the Program of Study submission.

- Passing this Oral exam will be a requirement for conducting the thesis defense.

Typically, we expect the exam to be conducted weeks before the thesis defense.

- The exam typically lasts 60 minutes.

- The student coordinates scheduling with their advisory committee. The oral exam can be conducted in a closed-door setting and does not need to be publicly announced.

However, it is the student's responsibility that the schedule for Oral exam (date, time, venue) is informed to the Director of Graduate Studies (DGS) by email at least one day prior to the exam.

### Exam Format

1. Conducted by the students' advisory committee; all committee members must be present.

2. Structure: Q&A-based (open-ended descriptive/explanatory questions), drawing from at least two distinct courses from the Program of Study, with the majority of the questions coming from the Core AI courses.

3. Questions are mainly focused on the students' Core AI requirements.

- a. At least four questions must be asked:

- b. At least two questions must be from the Core AI courses that all our MSAI students take:**

- i. **CSCI 6380 Data Mining or CSCI(ARTI) 8950 Machine Learning;**

- ii. **CSCI(PHIL) 6550 Artificial Intelligence;**

- iii. **PHIL(LING) 6510 Deductive Systems**

- c. Up to two questions may be chosen from the student's Elective courses
  - i. Please check the Group A or B elective courses list from <https://ai.uga.edu/ms-artificial-intelligence>
  - ii. These questions could also be from approved substitution courses in the student's program of study
4. Questions are not shared beforehand.
5. Suggested Format:
  - Introduction (5 mins)
  - Questioning – 5+ questions (30-40 mins)
  - Deliberation within the committee (10–15 mins)
  - Feedback to the student on the outcome of the exam (5 mins)

### Evaluation and Voting

The committee members must reach a majority consensus on the satisfactory (or unsatisfactory) outcome for each question. **A majority of the questions must be satisfactory to pass the oral exam.**

If it fails, a second attempt may be made after 4 weeks. After two failures, a remedial course (grade B or higher) is required to satisfy the exam requirement.

### Reporting the Outcome

The Advisory Committee chair (i.e., the Major Professor) must report the outcome of the exam to the Director of Graduate Studies (DGS) within five business days via email.

Include the signed form, which is shared on the program's graduate student forms webpage: <https://ai.uga.edu/graduate-student-forms>

- The form will contain the details of the following:
  - Student name, email address, Matric Term, Current Term, Intended Graduation Term
  - Date, time, duration, and venue of the Oral exam
  - Committee members' presence and voting
  - **Courses/topics covered in the exam (please classify each question with its course association and Core AI or Elective)**
    - Individual question-level outcomes
    - Include the specifics of the main 4 questions, with at least 2 drawn from the Core AI courses.
  - Signatures by all committee members

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### Best Practices for Faculty on the Advisory Committee

- Review the students' Program of Study beforehand. Each student may have a different program of study. Most of their core AI courses would be similar, with possibly significant changes in their elective courses.
- Ask balanced questions reflecting both breadth and depth. Prepare questions from at least two distinct courses in the Program of Study.
- Encourage conceptual synthesis, not rote recall.
- Maintain a professional, developmental tone.
- Provide constructive feedback that supports readiness for thesis work and professional practice.

### Best Practices for Students

#### General Advice

- The exam is separate from the thesis defense and focuses on coursework, not thesis results.
- Preparation should be broad and integrative, not course-by-course memorization.
- The committee is evaluating readiness for mastery of AI knowledge, not perfection in a specific course.

#### Before the Exam

1. Review Your Program of Study Thoroughly
  - Revisit syllabi, lecture notes, and key assignments from all courses listed on your POS.
  - Be prepared to answer questions from at least two different courses.
2. Focus on Core Concepts and Connections
  - Prioritize understanding foundational principles, not memorization.
  - Practice explaining how concepts from different courses relate to one another (e.g., theory → methods → applications).
3. Be Able to Explain, Not Just Apply
  - Expect “why” and “how” questions in addition to technical ones.
  - Be ready to explain assumptions, limitations, and tradeoffs of methods or models.

4. Review Key Mathematical and Algorithmic Foundations
  - Refresh essential math, algorithms, and theoretical results relevant to your coursework.
  - You may be asked to reason through problems conceptually, even without formal derivations.
5. Practice Verbal Explanations
  - Practice explaining technical ideas clearly and concisely out loud.
  - Avoid overly informal language; aim for professional, academic communication.

### During the Exam

6. Listen Carefully to Each Question
  - Take a moment to clarify the question if needed before answering.
  - It is acceptable to ask for clarification or restatement.
7. Structure Your Answers
  - Start with a high-level explanation, then add detail.
  - When appropriate, discuss assumptions, examples, or limitations.
8. Demonstrate Integration Across Courses
  - When possible, connect ideas across different classes (e.g., how a learning algorithm connects to optimization or representation choices).
  - Showing synthesis is often more valuable than depth in a single narrow detail.
9. Be Honest About Uncertainty
  - If you do not know an answer, explain what you *do* know and how you would approach the problem.
  - Avoid guessing or overstating your confidence.
10. Maintain Professional Composure
  - Stay calm, respectful, and engaged throughout the exam.
  - The committee's goal is to assess readiness, not to be adversarial.

### After the Exam

11. Receive Feedback Constructively
  - Listen carefully to any feedback provided by the committee.
  - Use it to strengthen your preparation for thesis research or future professional work.
12. Understand the Outcome and Next Steps
  - If you pass, you may proceed toward your thesis defense.
  - If a re-examination or remedial coursework is required, work with your advisor and the DGS to develop a clear plan for remediation.