

Applied Mathematics PhD Candidacy Examination Guidelines

The Candidacy Examination

1. All PhD students must take the candidacy exam within **20 months of the first date of registration in the PhD program**.
2. The examination consists of two parts: (i) a **written examination**, the questions to be set by the student's Supervisory Committee; and (ii) an **oral defense** of (a) the written examination, and (b) dissertation proposal.

The Examination Committee

1. The Examination Committee normally includes the members of the candidate's Supervisory Committee. Up to two other persons may be included at the discretion of the Supervisor in consultation with the candidate. The Graduate Program Director (or delegate) serves as Chair of the Committee. It is recommended that the Supervisory Committee is selected by the beginning of the winter term of the first year, but no later than four months before the scheduled candidacy examination.
2. The Candidacy Examination is to determine whether the candidate has the appropriate knowledge and expertise to undertake a dissertation in the selected field or area of study.

The Dissertation Proposal

1. The candidate will write a dissertation proposal (approximately 25 pages) which will be given to the members of the Supervisory Committee and the examination Chair (the Graduate Program Director or delegate), **at least two weeks** before the Candidacy Examination. The proposal will include a statement of the research topic, its motivation, literature review, the progress on the research problem, and a research plan with timeline.

The Written Examination

1. Examination Committee members select background areas to assess, and assigns appropriate background reading (- **4 months** before the written exam).
2. Before the Candidacy Exam, the Chair will consult with the committee to determine whether the committee agrees to proceed with the exam. The Examination Committee members will provide a typeset list of questions for the written exam to the Graduate Program Administrator at least **four business days** before the exam (typically a total of about 3-5 questions).
3. The candidate receives these questions from the Chair. The written exam is three-hours long. All questions assigned should be answerable in this time frame (for example, if there are 4 committee members asking one question each, each question should be answerable in 45 minutes.)
4. The Program Director will return a copy of the marked exam paper to the student within **one week** of the written exam. One copy of the marked exam paper will also be sent to the Supervisor(s) by the Program Director.

5. The examination committee decides (by majority vote if necessary) whether the examination is “pass” or “fail”. A student may be granted a “pass” even though some small weaknesses are identified - if it is considered that these may be remedied quickly. In such cases, a plan of remediation is to be designed by Supervisor and student, and satisfactory completion of the plan is to be attested by the Program Director.
6. A student who receives a failing grade on the written exam, will be given an opportunity to write the exam after a period of at least three months, but not more than six months. A **second failing grade** will result in a grade performance designation of “F” and the student will be **withdrawn** from the program.

The Oral Examination

1. Upon successful completion of the written exam, the PhD student will proceed to the oral component of the exam within **two weeks** of the written exam.
2. The candidate will be asked to present her/his dissertation proposal, 20 minutes in length and will then be questioned by each member of the Examination Committee. The questions must be related (directly or indirectly) to the research proposal and/or may be extension of questions asked in the written exam. The oral examination should normally be completed in two hours.
3. The oral exam is pass/fail and is decided through a majority vote by the committee members. The Committee Chair will vote only in the case of a tie.
4. A student who receives a failing grade on the oral exam will be given an opportunity to attempt the oral exam a second time within **three months** of the failed oral exam date. A **second unsatisfactory grade** for the oral exam will result in **withdrawal** from the program.