

THE GRADUATE PROGRAM

QUALIFYING EXAMS

There are two written exams (Basic and Advanced) which are intended to measure a student's overall mastery of standard material. The exams are administered in August and January, during the week just before each semester begins. In the preceding weeks, review sessions are often led by advanced graduate students.

Topics lists for the exams can be found later in these **Axioms**. Generally speaking, in the case of those exams based on basic graduate courses, the course covers most of the material on the topics list. However, due to time limitations and to differences of emphasis by instructors from year to year, not every topic can be covered in a given course. **It is the student's responsibility to master the material as listed in these Axioms.** A file of recent exams is available to students in Room 1521E.

Basic Exam

The Basic Exam serves as both a Master's Exam and a first step in the Ph.D. qualifying process. It consists of 2 or 3 parts, given on separate days, each lasting three hours. The emphasis is on very basic material typically covered in undergraduate and first semester graduate courses. Detailed descriptions of the Basic Exam required for each degree are given in the Degree Requirements section of the **Axioms**.

Each part of the Basic Exam is composed and graded by a committee of several faculty. Their recommendations are given to the GAC which then makes final decisions about passing at the Ph.D. level, passing at the Master's level, or failure. If, within the time limits specified below, a student has not passed at the Ph.D. level but has, in the opinion of the GAC, demonstrated outstanding mastery of some portion of the material covered by the Basic Exam, the GAC may decide to require the student to retake only parts of the exam.

Advanced Exam

The Advanced Exam has two parts (3 hours each), given on separate days. Each part reflects the contents of a full-year course at the 600 or 700 level.

Mathematics students choose two parts from among Algebra (Math 611–612), Analysis (Math 623–624), Differential Equations (Math 645, Math 731), and Geometry (Math 703–704). Statistics students take a two-part exam covering both mathematical and applied statistics; the mathematical statistics portion is based on Stat 607–608, Stat 605 and Stat 725, while the applied statistics portion is based on Stat 705–706 (Linear Models I,II). In unusual cases, e.g. involving a student with a previous Master's degree, an exam at the Advanced level in a subject in which a student has extensive experience could be substituted for one of the parts of the Advanced Exam with the approval of the GAC.

The examining committee for each part will report the outcome in detail to the GAC, which will then make the final decision about passing or failure. If a student fails one of the parts, but his/her performance on the other part is outstanding, the GAC may decide to require the student to retake only the failed portion of the exam. But if, in the opinion of the GAC, no purpose would be served by requiring the

student to retake all or part of the exam, the GAC may offer alternative ways for the student to qualify for the Ph.D. These could include: an oral exam (which may cover additional material), additional coursework, etc.

Time Limits

The time limits for these exams are extremely important.

A student seeking only a Master's degree will normally attempt the Basic Exam at the beginning or middle of the second year.

A student who intends to pursue a Ph.D. **must attempt the Basic Exam no later than the beginning of the third semester here and must pass it at the Ph.D. level no later than the start of the fourth semester here in order to continue.** The Advanced Exam must be taken **no later than the start of the student's fifth semester and must be passed by the start of the sixth semester;** otherwise the student cannot become a Ph.D. candidate. (A student entering with a recent Master's degree, or equivalent coursework, will normally be expected to pass Basic and Advanced Exams within 3 semesters.) There is no limit on the number of times the exams may be taken within the time frame described above.