

PhD PROGRAM

Degree Requirements

- 1. Qualifying Exams** All students must pass qualifying exams in two of six areas. The areas are algebra, analysis, applied mathematics, computational mathematics, logic, and geometry/topology. These exams are given the week or two before the beginning of classes each semester. They are written, the time allowed is six hours (for each), and they are based on our first year graduate curricula and prerequisite undergraduate courses. (For example, our first year graduate course in algebra along with undergraduate linear algebra should prepare one for the algebra exam, and so on.) Qualifying exams may be taken as often as necessary. Passing grades may vary from year to year according to the difficulty of the exams.
- 2. Specialty Exam** Pass a specialty exam in the intended area of research. This exam is given by a committee of three faculty, one of whom (usually) is or will be the dissertation advisor. The exam may be either written or oral, but as a rule it is almost always the latter.
- 3. Research and Dissertation** Under the guidance of a member of this department, complete a significant piece of original research and render it in a written form that others can easily understand.
- 4. Minor**
 - Option A** - in a single department, the Mathematics Department or an outside department. Option A requirements are set by the host department and typically call for 12 credits. An INTERNAL MATH minor requires 12 credits in courses numbered above 700 in an area DIFFERENT from those of the two qualifying exams.
 - Option B** - requires a minimum of 12 credits in one or more departments which may include the Mathematics Department. Option B requirements are set by the Graduate Program Committee of the Mathematics Department. To avoid disallowed courses, students should obtain approval in the early stages, by submitting a four course plan to the Graduate Program Committee Chair.
- 5. Courses and Grades** Complete 54 credits of graduate work. These credits are typically in mathematics or an approved minor. (Under certain circumstances, credit for courses taken elsewhere as a graduate student may count towards the total of 54. This transfer of credits requires the approval of the Graduate Studies Coordinator and will only be applied towards your coursework after two qualifying exams have been passed.) Courses outside mathematics can be counted toward the 54 credits, up to a maximum of 12 credits, if approved by the Graduate Studies Coordinator or the Graduate Program Committee. This applies only if the 12 credit minor is inside the Mathematics Department, and the outside courses are in a field directly related to the student's dissertation research. Achieve a grade point average of 3.3 or better in mathematics and cross listed courses.
- 6. Residence** The Graduate School requires a minimum of 32 graduate level credits (no audits or pass/fail courses) taken as a graduate student at UW-Madison.

Preliminary Examination

Students have passed their Preliminary Examination if they passed the two qualifying exams, the specialty exam and fulfilled the minor or major course requirements. This now means you can apply for dissertator status.

Satisfactory Progress Criteria

Graduate students in mathematics are required to make satisfactory progress. Students not making satisfactory progress will be placed on probation. If this probationary status is not resolved by the end of the semester in which it is initiated, the student will not be allowed to continue as a graduate student in mathematics and any guarantee of support will be terminated. Exceptions to the rules will be made only in rare circumstances and must be initiated through written appeals to the Graduate Coordinator or the Graduate Programs Committee. Graduate students in mathematics must meet all university requirements. (See Satisfactory Progress in the [Graduate School Academic Guidelines](#).) In addition satisfactory progress in the Mathematics Department requires the following:

1. Course and Grade Requirements

- (a) During their first year, PhD students must take at least two mathematics courses numbered 700 or higher each semester. (usually 6 credits)
- (b) During their second year, PhD students must take at least one mathematics course numbered 700 or higher each semester, and a total of at least three mathematics courses numbered 700 or higher during the year.
- (c) Thereafter, all PhD students must take at least one mathematics course numbered 700 or higher each semester.
- (d) Every student must take at least 6 credits (2 courses) each semester until reaching dissertator status. In any semester after reaching dissertator status a student must take exactly 3 credits.
- (e) Maintain a grade point average of 3.3 or better.

2. Examinations – Qualifier Exams

- (a) All students are required to pass at least one qualifying exam by the beginning of their fourth semester (the spring semester of second year), and two by the beginning of their sixth semester (the spring semester of third year).
- (b) Failure to pass at least one qualifier by the beginning of the fourth semester results in the immediate withdrawal of guaranteed support, although students will continue to be supported during the fourth semester.
- (c) A student who has passed no qualifying exam by the beginning of the fourth semester is no longer in the PhD program. The student may register for the fourth semester as a Master's student to earn a Master's degree.
- (d) Failure to pass two qualifiers by the beginning of the sixth semester results in the immediate withdrawal of guaranteed support, although students will continue to be supported during the sixth semester.
- (e) A student who has not passed two qualifying exams by the beginning of the sixth semester is no longer in the PhD program. The student may register for the sixth semester to earn a Master's degree by the end of that semester.
- (f) Students who have not passed two qualifying exams by the beginning of the sixth semester

will not be allowed to enroll in either the Master's or PhD program for the seventh semester or thereafter.

3. Dissertation Advisor, Dissertator Status and Defense Committees

- (a) A student must have a dissertation advisor by the end of the sixth semester.
- (b) At no time after the sixth semester (end of third year) may a student be without a dissertation advisor for more than one semester. If you change advisors at any time, you must notify the Graduate Program Administrator, 214 VV.
- (c) Students must satisfy all the requirements for dissertator status by the end of the eighth semester (end of fourth year). Specifically, the student must have finished all degree requirements other than the dissertation.
- (d) A student can count Math 990 as satisfying 1(c) for at most two semesters while a dissertator.
- (e) A PhD thesis committee should consist of five approved faculty members: major advisor, two readers, and two additional faculty members. One member of the committee should represent the student's minor area.

4. Time Limits

Students must complete their PhD in no more than eight years (16 semesters).