Master's Degree Requirements

The Mathematics Department offers several Master's Degree programs. Of these, the MS non-thesis program has the most demanding course requirements and most closely matches the early stages of the PhD program. The majority of students who enroll in the Mathematics Department begin their studies with the PhD or MS non-thesis program in mind. For the purposes of these two programs, there is at any time a list of designated core courses. Currently, this list consists of the sequences numbered 504/5/6, 524/5/6, 534/5/6, and 544/5/6.

For any Master's degree, a student must complete the basic requirements for a Master's degree at the University of Washington.

Transfer credits are not accepted at the 400 level; other transfer credits and substitutions are at the discretion of the graduate program coordinator. Note that the University of Washington Graduate School allows at most 6 transfer credits.

The M.S. programs with an option in numerical analysis or optimization provide more focused training in these directions, which can be useful for students seeking employment in certain industries. (Students intending to do research in numerical analysis or optimization would normally follow the requirements of the PhD program rather than these MS programs.)

Note that the department does not offer a Master's degree in mathematics education. For information about such a degree, contact the College of Education.

- Master of Arts, Non-Thesis
- Master of Science, Thesis
- Master of Science, Non-Thesis
- Master of Science, Optimization Option, Non-thesis

Master of Arts, Non-Thesis

**Residence:**
3 quarters.

**Courses:**
A minimum of twelve approved one-quarter courses at the 400 or 500 level, including two courses in each of algebra, analysis, and one other field. The course total must include six courses chosen from the designated core graduate courses or, with prior approval of the graduate program coordinator, from other 500-level sequences. The six courses at the 500 level should be distributed over no more than three sequences.

**Final Examination:**
Written examination in an area agreed upon by the student and the chair of the examining committee. Oral examination may be substituted with prior approval of the graduate program coordinator.

Master of Science, Thesis

**Residence:**
3 quarters.

**Courses:**
A total of twelve numerically graded one-quarter courses from MATH 402, 403, 404; 424, 425, 426; 427, 428, 429; 441, 442, 443; any 500-level mathematics course; AMATH 507; 584, 585, 586; plus 9 thesis credits (700). Other courses may be included in the total with prior approval of the graduate program coordinator. Courses to include at least two quarters from each of two designated core graduate courses and one other 500-level sequence.

**Thesis:**
Should demonstrate the ability to do independent research.

**Final Examination:**
The thesis is defended in an oral examination.

Master of Science, Non-Thesis

**Residence:**
3 quarters.

**Courses:**
A total of fifteen numerically graded one-quarter courses from MATH 402, 403, 404; 424, 425, 426; 427, 428, 429; 441, 442, 443; any 500-level mathematics course; AMATH 507; 584, 585, 586. Other courses may be included in the total with prior approval of the graduate program coordinator. Courses to include at least two quarters from each of two designated core graduate courses, and in addition one three-quarter sequence of 500-level mathematics courses in an area of specialization approved by the graduate program coordinator and the chair of the student's examining committee.

**Final Examination:**
Oral examination in the area of specialization on a topic agreed upon by the student and the chair of the examining committee, or the General Examination for the Ph.D. degree. A written examination may be substituted with approval of the Graduate Program Coordinator.

Master of Science, Optimization Option, Non-thesis

**Residence:**
3 quarters.

**Courses:**
A total of fifteen one-quarter courses, at least six of which are at the 500 level, chosen from MATH 424, 425, 426; 427, 428, 429; 438, 439; 441, 442, 443; 461, 462; 491, 492; any 500-level mathematics course; AMATH 507; 584, 585, 586. Other courses may be included in the total with prior approval of the graduate program coordinator. Courses to include four from AMATH 507 and MATH 514-518.
**Final Examination:**
Oral examination in a special topic agreed upon by the student and the chair of the student's examining committee.

**Recommended preparation:**
308, 309, 326; 464,5,6 plus one other 400 level course for admission; a sequence such as 424,5,6; 427,8,9; 438,9; plus knowledge of a computer language such as FORTRAN, PASCAL, or C.

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**Source URL:** https://math.washington.edu/masters-degree-requirements