

Graduate Study in Mathematical Sciences At Binghamton

Introduction

Areas of Research Activity

How Long to Graduate?

Dissertation Advisor

Entry

Deadlines

Assistantships and Fellowships

Underrepresented Minority Fellowships

The Campus and Housing

MAT/MST Degrees

Binghamton University is strongly committed to affirmative action. We offer access to services and recruit students and employees without regard to race, color, sex, religion, age, disability, marital status, sexual orientation, or national origin.

Introduction

We are pleased to respond to your request for information about graduate work in the Department of Mathematical Sciences. This booklet contains some information on our program and on how to apply for admission and an assistantship. If you have additional questions, don't hesitate to write the department, or phone 607-777-2147.

The Department of Mathematical Sciences offers four graduate degrees:

Master of Arts (MA)

Doctor of Philosophy (PhD)

Master of Arts in Teaching (MAT)

Master of Science in Teaching (MST)

This booklet focuses on the MA and PhD programs, although some information on the MAT and MST is included on the last page.

Areas of Research Activity

At present, most of the research pursued by the department's faculty concentrates on the following areas (in alphabetical order): algebra, combinatorics, dynamical systems, functional analysis, geometry, graph theory, probability, statistics, theoretical computer science, and topology.

Students interested in statistics should note that, at Binghamton, statistics is done within the Department of Mathematical Sciences, not in a separate department. This means that our statistics students are exposed to a greater breadth of mathematics than is often the case in statistics departments. It also means that students have time to decide whether to specialize in mathematics or statistics.

How Long to Graduate?

The MA degree normally takes two years, though it is technically possible to finish in three semesters. The degree entails a minimum of thirty graduate credit-hours and an oral examination. In certain cases students may write an MA thesis in place of the oral.

Students who come to Binghamton with only a bachelor's degree can expect to spend five or six years to complete the PhD; this includes the two years for the MA. The major work of earning a PhD involves the writing of a research dissertation under the guidance of a faculty member. As with all creative endeavors, it is difficult to know in advance how long this will take.

For students who come to us with a master's degree (or the equivalent), it is difficult to be specific about the number of years needed for the PhD since this depends so much on the individual's background and dissertation plans. It is technically possible to finish in one year, but this happens very rarely.

Dissertation Advisor

For PhD students, the key faculty member is the dissertation advisor. The process of seeking an advisor may start in the fourth semester--or earlier for students entering with a master's degree. By that time most students have a proposed area of specialization and know, and are known by, some faculty members working in that area. The goal of this matching process is for students to find the advisors they want, and for advisors to have confidence in the suitability of their students for the proposed research. Our path to this goal is called Admission to Candidacy, which is initiated by reaching an agreement with the dissertation advisor about a proposed Candidacy Exam. The proposal must meet the approval of the Graduate Committee, which also must certify successful Admission to Candidacy.

Entry

The department treats the MA and PhD programs essentially as one, but a technical distinction is made for admissions purposes. If you have just completed a bachelor's degree, please check the MA box on the application form, even if your ultimate plan is to earn a PhD. If you already have a master's degree in mathematics, check the PhD box on the form.

Deadlines

While the University's application form indicates a deadline of February 15 for applicants for fall admission, our department is quite flexible. If your credentials are good, we encourage you to apply, even if the official deadline has passed.

Assistantships and Fellowships

Instructions for applying for an assistantship are included with the application materials. Most of our full-time graduate students have assistantships: they receive a stipend and a full tuition scholarship in return for comparatively light teaching or grading duties.

Typically, a teaching assignment might involve three to five hours per week in the classroom, together with preparation time and office hours. Someone with no previous teaching experience usually assists a faculty member by conducting recitation sections. More experienced teaching assistants conduct their own calculus or precalculus class, but only when they feel ready for that responsibility.

Stipends are competitive and include a tuition scholarship and health insurance. Exact dollar amounts for the current year are available on request. Summer support is also available for some students. The tuition scholarship covers all tuition expenses, but not the (relatively small) student "fees."

Prospective graduate students whose completed applications arrive by February 15 (see also "Deadlines," above) are automatically considered for the highly competitive University Fellowships awarded on a university-wide basis. These fellowships leave the student free of teaching or grading duties.

In addition, there are special named awards made by the Department of Mathematical Sciences in honor of two former colleagues, Felix Bernstein and Craig C. Squier. All assistantship/fellowship applicants are automatically considered for these awards.

Holders of National Science Foundation graduate fellowships, or other fellowships for graduate study awarded by private or public organizations, are strongly encouraged to apply for admission.

Candidates for the MA degree who receive an assistantship can expect to have it renewed for a second year, provided their academic and assistantship work are both satisfactory. Those who wish to proceed to the PhD are reevaluated at the end of the second year. If their support is renewed, and if they continue to make satisfactory degree progress, they can expect to be supported until they receive the PhD degree; however, Graduate School regulations limit assistantship support to a total of six years in such cases. This paragraph should be understood as a statement of our general policy; legally, support is given one year at a time.

Underrepresented Minority Fellowships.

The State University of New York has provided graduate fellowships for highly recommended students from groups historically underrepresented in the University's graduate programs. Candidates for these fellowships must: be US citizens or have permanent resident status; be members of one of the following groups - Native American Indian, African American, Hispanic American; and be newly admitted to a graduate program for the fall semester.

The Campus and Housing

Situated on a wooded hillside overlooking the Susquehanna River Valley, Binghamton's 606-acre campus and 117-acre nature preserve provide excellent facilities in a beautiful and peaceful setting.

Off-campus living for graduate students is available in the surrounding communities, with easy access to campus by county or campus bus. Graduate students who want convenient on-campus living without sacrificing the independence and privacy of an apartment will find the advantages of both combined in the Graduate Community. Apartments for married students and for students with children are also available there.

MAT/MST Degrees

The MAT and MST degrees prepare students for certification as high school teachers in the State of New York. These degrees are given jointly by the School of Education and Human Development (SEHD) and the Department of Mathematical Sciences. The MST is intended for students who have satisfied the undergraduate education requirements for provisional certification with specialization in mathematics. The MAT, on the other hand, prepares for certification those students with appropriate mathematics experience but with little or no background in education.

Students in our MA program may pursue the MAT degree concurrently, and thus obtain certification. This is appropriate for students who are fairly sure they want to be high school teachers but would like the stronger mathematics content of our MA degree. Rules governing the use of the same course for both degrees can be found in the University's Bulletin.

A student with provisional certification who obtains an MA degree in our department automatically qualifies for permanent certification in New York State.

We are rarely able to offer assistantships to students who are enrolled solely in the MAT/MST programs, but SEHD has some funds for the support of these students.

For more information about the MAT and MST, please request our separate information packet or contact SEHD.