



DEPARTMENT OF  
MATHEMATICAL SCIENCES  
GRADUATE STUDENT  
HANDBOOK

2017/2018

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## Introduction

This handbook provides graduate students with policies and procedures that relate to the academic program and facilities of the [Department of Mathematical Sciences \(MSCI\)](#). The handbook serves as a guide for graduate students toward completion of their degree requirements; as well as listing the Graduate Assistants' responsibilities and duties. The policies and procedures contained in the handbook supplement those of the Graduate School as published in the [Graduate Catalog](#) and in the [University of Memphis Student Handbook](#). The student is responsible for knowing and complying with the published regulations of the Graduate School, most notably [Admissions Regulations](#), [Admission of International Students](#), [Academic Regulations](#), and [Minimum Degree Requirements](#). The official version of this handbook is on the [MSCI website](#).

Note that we cannot guarantee all the provisions in this handbook are fully up-to-date. If in doubt, contact the [Director of Graduate Studies](#) or the [Graduate Catalog](#) for the most up-to-date information.

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## Graduate Programs Offered by MSCI

Several graduate programs are offered in the MSCI.

- [Graduate Certificate in the Teaching of Mathematics](#): Requires the completion of 18 Graduate Credit Hours in Mathematics which includes an in-depth study of the teaching of Pre-Calculus and Calculus. This certificate in conjunction with a Masters' Degree qualifies the graduate to teach undergraduate mathematics courses at a 2-year or 4-year college or as dual enrollment courses.
- [Master of Science \(MS\) in Mathematical Sciences](#): Requires completion of 33 credit hours, and either a thesis or passing a Comprehensive Exam. Concentrations in Applied Mathematics, Mathematics, Teaching of Mathematics, and Statistics are offered.
- [Doctor of Philosophy \(Ph.D.\) in Mathematical Sciences](#): Requires completion of 72 total post-Baccalaureate credit hours, passing Qualifying and Comprehensive Exams, and a dissertation. Concentrations in [Mathematics](#) and [Applied Statistics](#) are offered.

More details on the programs and application procedures are provided on the [MSCI website](#) and in the [Graduate Catalog](#). It is the Graduate Student's responsibility to ensure that all of the requirements for graduation are satisfied.

Ph.D. students are usually eligible to obtain a MS degree in Math before completing their Ph.D., and are strongly encouraged to obtain this extra degree. Students who wish to obtain an MS degree while pursuing a Ph.D. should contact their advisor and the graduate

coordinator as soon as they have passed the qualifying exams at the MS level or above and earned enough credit hours.

MS and Ph.D. students are strongly encouraged to present their research at professional meetings of their discipline. The University also sponsors an annual event, the [Student Research Forum](#), which provides a multidisciplinary showcase for graduate student research. Awards are presented for the best posters and talks. MS and Ph.D. students are encouraged to participate.

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## **Assistantships, Fellowships, and Awards**

### **Graduate Assistantships (GAs)**

MSCI is committed to providing financial support for graduate assistants who are admitted with support, are making satisfactory progress toward completion of their degree, and are performing their job responsibilities satisfactorily. Assistantships will usually only be awarded to students in the Ph.D. program. See [GA Rights and Responsibilities](#) below for more details.

### **Graduate School Fellowship and Awards**

[Fellowships and awards](#) are offered through the Graduate School.

The annual [Student Research Forum](#) is held in the spring, sponsored by the Graduate School and the Helen Hardin Honors Program.

### **Department of Mathematical Sciences' Outstanding Teaching Awards**

Every spring the DMS recognizes a graduate student in mathematical sciences with excellent performance as teaching assistant. This includes excellence in teaching, tutoring or mentoring undergraduate students. The selection process begins with nominations and then a selection committee sends a recommendation to the Director of Graduate Programs.

Recipients are given a plaque and a cash award of \$150.

### **The Dr. Ralph Faudree Award in Mathematics Research**

The Dr. Ralph Faudree Award in Mathematics will be given annually to up to two Ph.D. students in Mathematics, who have demonstrated excellent progress toward achieving the doctoral degree. It consists of a monetary award of \$300 and a certificate of recognition. Eligibility requirements include: (1) having passed the Qualifying Ph.D. Exam and (2) a commendable teaching record.

Faculty members in DMS are encouraged to send nominations of candidates for the award to the Department Chair, [Prof. Irena Lasiecka](#), by **March 31**. Nominees will then be invited to

submit an abstract and a title for a 25-minute presentation of their research during a Mathematics Research Day, held in April. The final decision will be made by a jury consisting of department-appointed faculty members. All award recipients are listed at the MSCI webpage.

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## International Students

International students must attend mandatory orientation and teaching workshops directed by the Graduate School in the week before the start of their first semester. Several important topics are discussed in these meetings. Topics addressed include [INS laws](#), [health insurance](#), social security, tutoring, [TB test scheduling](#), and the required [SPEAK test](#). Due to the time it takes to obtain a social security card, international students are advised to arrive in the US at least **two weeks** before the start of their first semester. Note that Graduate Assistants cannot receive payments until they have obtained their social security card.

All international Graduate Assistants are required to take the SPEAK test during their first semester. MS students must pass the SPEAK test as part of their degree. Students whose native language is English *may* be able to waive the SPEAK test, but this is not guaranteed. Students who have scored 26 or higher on the speaking portion of the TOEFL iBT are exempt. Students who score lower than the minimum required are directed to enroll in English and Accent Modification courses to improve their English skills before retaking the SPEAK test. Note that although there are free prep-English classes, the number of places available is limited.

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## Residency Requirements

At present, there is no residency requirement for the MS degree. Ph.D. candidates must commit to full-time study for a minimum of two successive semesters after admission to the MSCI degree program to fulfill the residency requirement. Graduate Assistants are required to be resident during the Spring and Fall semesters (see GA Rights and Responsibilities below). International students may also have additional visa-related residency requirements.

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## Health Insurance

All international students and their dependents are required to have health insurance coverage and are responsible for purchasing health insurance upon arrival at the University. This can be arranged either through the university, provided by an independent carrier, or provided by

government or other university-approved sponsorship. Details are available from [International Student Services](#).

## Health Plan for Graduate Assistants

The University of Memphis has partnered with Church Health Center to offer Memphis Plan health coverage to all domestic graduate assistants. GAs **must carefully read their email announcing their new eContract for the coming semester for instructions on how to apply for the UofM/Church Health Center Memphis Plan for Graduate Assistants**. GAs will be required to authorize payroll deduction for the student portion of plan costs in order to participate in the plan. Access to both the plan application, and a way to electronically accept payroll deduction, will be included in the aforementioned email. More information is available on the [Graduate School website](#).

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## Graduate Student Housing

Because housing is limited, new Graduate Assistants should finalize their arrangements prior to their arrival. [Graduate and Student Family Housing](#) is located on the University of Memphis, Park Avenue campus, approximately one mile from the main campus. The residents are comprised of students, students' spouses, and students' children. It is a community different from a typical apartment complex in that most residents are parents and/or students, and many are working full or part-time jobs. Both one and two bedroom apartments are available, and four apartments are specifically designed to accommodate students with disabilities. For information please contact the [Graduate Student Housing Coordinator](#).

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## Advisors and Committees

### Academic Advisors

Upon arrival, a new student will be assigned an *Academic Advisor* by the relevant Graduate Coordinator ([Math](#) or [Statistics](#)). The academic advisor's job is to advise students on course selections and general procedures. Each semester, a student cannot register for any classes until they have met with their academic advisor. The advisor must clear the "Alternate PIN" to allow the students to register. With the exception of the first semester, this meeting should occur at the end of the previous semester. New students are expected to enroll in classes at least **two weeks** before the start of the semester. Returning students are expected to enroll by the end of the previous semester, or at least notify [Dr. Paul Balister](#) of their intended schedule.

## Research Advisors

Ph.D. students, and MS students who opt to write a thesis, should choose a *Research Advisor* to advise them on research for their Thesis/Dissertation. Research Advisors are chosen by mutual agreement between the student and the advisor and is usually different from the Academic Advisor initially assigned to the student. Ph.D. students should choose their Research Advisor before, or immediately after, they pass their qualifying exams. MS students who opt to write a thesis should choose their Research Advisor by the end of their second semester. Research Advisors typically take over the responsibilities of the Academic Advisor (advising on course selection, clearing alternate PINs, etc.).

## Change of Advisors

The student has the right to change his or her Academic or Research Advisor at any time. Agreement is only required by the student and the new advisor.

## Committees

Ph.D. students, and MS students who opt to write a thesis, should choose a Thesis/Dissertation Committee. The committee should consist of five faculty members for a Ph.D. committee and three faculty members for an MS committee. One member will be the Research Advisor, and at least one other member should be outside of the immediate subject area (PDEs, Combinatorics, Analysis, etc.) of the Thesis/Dissertation. Faculty from other departments can be chosen if appropriate. Faculty must have the appropriate [graduate faculty status](#) to serve on such a committee. (In MSCI, all professors and even some instructors are eligible.) The graduate student is responsible for asking faculty to serve on their committee and for checking eligibility of committee members.

For Ph.D. students, the committee should be chosen at least a month before the Comprehensive Exam, and at least two months before the Dissertation defense. The student should also complete the [Dissertation Faculty Committee Appointment Form](#), and take the form to the [Graduate School](#). For MS students, the committee should be chosen at least two months before the Thesis defense.

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## Course Loads

MSCI graduate assistants supported by MSCI teaching/research assistantships at the normal full-time level (20 hours/week) are [required](#) by the University to register for 9 credit hours (typically 3 courses) per semester up until the point where the only remaining credit hour requirements are Thesis/Dissertation hours, after which 1 hour per semester is sufficient. Note that students receiving financial aid may be required to enroll in a certain minimum number of credit hours per semester. Note that once students enroll in Thesis or Dissertation hours, they

must continue to enroll in Thesis or Dissertation hours every semester (Fall and Spring) until they graduate. Tuition is paid for GAs on the basis of up to 9 credit hours per semester. GAs will be required to pay tuition for any additional credit hours over the credit hours per semester covered by the assistantship. Graduate assistants count as in-state students when calculating tuition.

Students are expected to enroll in classes at least **two weeks** before the start of the semester. If a student is unable to register on time, he or she must email [Ms. Ilham Tayahi](#) the list of courses he or she intends to take. **This is very important as classes may otherwise be cancelled due to low enrollment.**

All new GAs must enroll in the GA Teaching & Academic Strategies Course, [Math 7960](#).

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## Course Numbers and Special Courses

### Course numbers

Some courses are offered at two different levels with two different course numbers differing in the first digit.

- For 4000/6000-level courses, all graduates must enroll in the 6000-level version. The 4000-level is for undergraduates.
- For 7000/8000-level courses, MS students should enroll at the 7000-level and (except as noted below) Ph.D. students should enroll at the 8000-level.
- For 7000/8000-level courses, it is expected that the students enrolled at the 7000-level will be given significantly less workload than those at the 8000-level. This is to encourage Ph.D. students to attend classes (at the 7000-level) outside of their immediate specialty and broaden their mathematical knowledge without imposing too much of a burden on their time.

It is the duty of the student to ensure enough courses at the right levels are completed so as to fulfill the appropriate [program requirements](#).

### Independent Study Sections

A course offered in the form of "individual study" is a "reading course" supervised by the instructor but normally not given in a class. Some courses listed in the [catalog](#) are specially designed to be offered as individual study courses. Examples include Math [7671/8671](#), [7821/8821](#), [8812](#), [8813](#). However these only count as individual study sections if they are taught as such. If a section is taught in a classroom with a group of students then it counts as a regular course. The content of an individual study course may not

duplicate any existing graduate course and must be approved by the department Chair or her designee during the preceding semester. Only students who have passed the qualifying exam are eligible for an individual study course. Students may not take more than 6 credit hours of individual study courses.

### **The courses [Math 9000](#) and [Math 7996](#)**

Doctoral students who have passed the qualifying exam are eligible to register for [Math 9000](#) (Dissertation). The doctoral program requires at least 9 Dissertation hours but no more than 15 can apply to the program course requirements. One credit of Dissertation grants full-time student status to any Graduate Assistant who has completed all the course requirements except for dissertation. For more information contact the graduate coordinators. Masters' students writing a Thesis can apply between 1 and 6 credit hours of [Math 7996](#) (Thesis) to their degree requirements.

One of the requirements of these two courses is that once enrolled in one for a semester, a student must continue enrolling in the same course every semester (Fall + Spring) until the Ph.D./MS is completed. This includes the semester in which the student graduates.

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## **GA Rights and Responsibilities**

### **Compensation**

Graduate assistantships offered to selected graduated students provide a stipend paid in eight installments plus tuition and fees paid directly to the University. Stipends typically provide up to \$14,000 per year, increasing to \$15,000 after passing the Qualifying Exam. In addition, eligible students can teach a summer course that pays at the rate \$750 per credit hour. Note that you need a **social security number** to receive payment. Thus you should apply for a social security number as soon as possible if you do not already have one. Due to the length of time it takes to obtain a social security number, new international students are advised to arrive in the US at least two weeks before the start of their first semester. The University pays stipends by direct deposit to a bank account. You must provide an account number. If you already have a social security number and do not have a bank account, an easy choice is the First South Credit Union branch above the bookstore. You must pick up your first paycheck in person at the bursar's office in Wilder Tower.

### **Offices, Mailboxes, etc.**

GAs will be assigned office space, a mailbox, and a locker to store personal items. GAs must provide their own locks to secure their locker if they want to reserve a space in the lockers

available in DH 313. Access to computer equipment is provided. GAs will also be included on the MSCI website with their picture and their own personal webpage.

## Review of Academic Progress

Each student will discuss progress in their degree program with his or her advisor when they meet to determine a course schedule for the following semester. The student's academic progress will be evaluated by the department and serves as a basis, along with the job performance evaluation, for the student's request for assistantship appointment or reappointment. Note that a graduate assistantship may be reduced or cancelled due to either poor academic performance, or poor performance in carrying out assistantship duties. Note that the university requires graduate assistants to maintain a 3.00 GPA in order to retain their assistantships.

Students are expected to complete their degree in a timely fashion, typically two years for the MS degrees and five years for the Ph.D. degree. Students will not, except in very unusual cases, be awarded financial support beyond these limits. Requests for support beyond the above limits must be submitted in writing by the student's advisor to the Graduate Coordinator.

## Duties of Graduate Assistants

Graduate Assistants (GAs) supported by MSCI are required to work 20 hours per week. These hours include a combination of teaching, assisting faculty members with grading and/or proctoring exams, assisting in the Mathematical Sciences Department as needed, and tutoring in the Math Learning Center, as assigned by [Ms. Ilham Tayahi](#). The GA is responsible for his/her assigned tutoring schedule. If for some reason, the GA needs a substitute for a specific day/time, then he/she should ask other GAs or student workers to exchange their days/times. Each GA must perform his/her assigned number of tutoring hours. Undergraduate student workers may not work, and will not be paid for, any hours above their contract. In all cases the GA must inform [Ms. Ilham Tayahi](#).

If a GA is negligent in performing his/her responsibilities, then his/her compensation may be reduced and renewal of GA contract may be at risk.

GAs are not responsible for substituting their Advisor's classes, nor are they required to perform personal jobs for their Advisors. However, a GA may elect to substitute if the time does not conflict with his/her classes, MLC tutoring, or other GA responsibilities, and if the Advisor compensates with reciprocal classroom time or in some other mutually agreed manner.

Graduate assistants are to be present in Memphis each semester **one full week** prior to the first day of class. Graduate students who are teaching or grading finals must be present up to

the Tuesday following all of the published Final Exams, which is the day after the due date for posting the grades. These dates are on the [Academic Calendar](#).

Graduate Assistants must ensure that they are eligible to teach (see section on Teaching Eligibility) within one full year of entering the program. Assistantships are reviewed periodically and are dependent on the students making adequate progress towards degree completion, and on performing their duties satisfactorily. Failure on either count may result in the reduction or cancellation of the assistantship.

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## Teaching Eligibility

Graduate assistants are expected to teach classes starting in their second year. Graduate students without an MSCI assistantship may be allowed to teach, although funding is unlikely to be available to pay any salary for this. Limited summer teaching is available for qualified students, and currently pays \$750 per credit hour taught.

To be qualified to teach, students must complete the following requirements.

- Must have 18 credit hours of graduate coursework in Math successfully completed (at least C- grade).
- Must pass the [SPEAK test](#) if not a US citizen. (Students whose native language is English *may* be able to waive this requirement.) Note that an appointment must be made for this test, and this may take a few weeks, so don't leave it until the last moment.
- Must complete the [FERPA tutorial](#). (This is an online tutorial and should take less than half an hour to complete.)
- Complete the [Verification of academic credentials form](#). (Just the first page, and the SPEAK test score on the second page if applicable.) Hand this form in to [Ms. Vickie Middleton](#).
- Must attend the Teaching Assistant Orientation Workshop, which is sponsored by the Graduate School, prior to the start of their first teaching assignment. A copy of the workshop schedule will be provided and specific responsibilities of teaching assistants will be further elucidated in the initial meeting of teaching assistants held each fall or spring semester before the first week of classes.

Note that **we require completion of the first two of these steps at least 3 months before start of teaching**. Thus typically students will only be allowed to teach after one full year (including summer) in the program.

## Teaching Responsibilities

Students who teach a class (TAs) are required to adhere to the following requirements

- The TA must teach the entire published class time, including the first day of class. This is to ensure that each class has at least **750 minutes** contact time per semester hour.
- The TA must find an eligible substitute teacher if he/she is unable to teach on any class day.
- The TA must report to the Course Coordinator for his/her assigned course and follow the Coordinator's instructions. The Course Coordinator will supply the TA with information specific to the course, including online homework access.
- The TA must provide a syllabus which informs his/her students about the content of the course and grading policies. For example, if the TA intends to use plus/minus grades, this must be stated in the syllabus. Instructors may get information from the Course Coordinator or refer to example syllabi on the [MSCI website](#).
- As the MSCI representative in the classroom, the TA must treat his/her students with dignity and respect, answering each question with concern for the students' understanding, and without making the student feel inadequate.
- In the United States, the classes are expected to be interactive, including student participation, questions, and feedback. The TA should encourage his/her students to ask questions.
- The TA is required to offer at least one hour per week of office hours which must be advertised to his/her students. (Time in the Math Learning Center can be used to satisfy this requirement.)

Due to the fact that students have many different schedules, the TA **cannot** schedule any required class-related activity outside of normal class hours. Also, the TA **cannot** reschedule his/her final exam to another time. For more information regarding class times, choice of classrooms, and other scheduling issues, contact [Dr. Paul Balister](#).

As a guideline, the TA should note that on average about 65%-80% of students in undergraduate math classes get a grade of C- or better (out of all students who are still enrolled after two weeks). This does **not** mean that TAs are required to give this many passing grades. It does mean that if the TA's pass rate differs significantly from this then the TA should seek advice about his/her grading policy from his/her Course Coordinator. Note that many TAs find that their students are *much* weaker than they were expecting. (Remember, UofM students are typically not destined to be math Ph.D.s!) In particular, many students have difficulty thinking abstractly, so the TA should spend most of his/her time in class going over examples.

TAs can obtain photos of the students in his/her course: Go to [MyMemphis](#) → Course Roster & Drop/Add Activity Channel → Access class roster with optional photos report → Select Term

→ Get Rosters → Select Show All Photos, or Print Roster with Photos, or Print Roster Without Photos.

## Teaching Assistant Coaching

The Teaching Assistant's classroom will be visited by an interested faculty member, at least once during the semester. The professor will make observations, subsequently meet with the TA to offer recommendations that will help the TA with teaching, and send a report to [Ms. Ilham Tayahi](#).

I have read and understand the Mathematical Sciences Graduate Student Handbook, including the Duties of Graduate Assistants. I understand it is ultimately my responsibility to complete duties as assigned and maintain adequate progress within my program.

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MS/Ph.D. Candidate Signature

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Date

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Print name of MS/Ph.D. Candidate

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Semester/Year