

Graduate Student Handbook
Academic Year 2023-2024

Department of Mathematics
University of Houston

Original version (Academic Year 2019-2020):

Prepared by the 2018-2019 Mathematics Graduate Representatives

Kayla Bicol and Duong Nguyen,

with assistance and oversight from

Irina Perepelitsa, Jasmine Bhullar, Akshat Das, and

Prof. Alan Haynes, Jiwen He, Kresimir Josic,

William Ott, and Ilya Timofeyev.

Subsequent versions:

Edited by graduate student representatives and
the Graduate Studies Committee of the Department of Mathematics.

Contents

Contents	3
Preface	6
1 Overview of the Department	7
2 Important Contacts	9
3 Ph.D. Degree Plans	11
3.1 Degree Requirements	11
3.2 Choosing a Thesis Advisor	13
3.3 Dissertation Committee	14
3.4 Obtaining a Master’s Degree Together with a Ph.D. Degree	15
3.5 Applying for Graduation	15
3.6 Thesis and Dissertation	16
4 Academic Expectations	18
4.1 Time Restrictions	18
4.2 Grade Requirements	19
4.3 Preliminary Examinations	21
4.4 Annual Performance Review (APR)	23

<i>CONTENTS</i>	4
5 Financial Support	25
5.1 Graduate Tuition Fellowship	25
5.2 Graduate Student Assistantships	27
5.3 Other Fellowships	30
6 TA Duties	34
6.1 TA Assignment	34
6.2 Duties and Hours	35
6.3 FERPA	36
6.4 University Policies Related to Discrimination, Harassment, and Misconduct	36
6.5 Tutoring Work	37
6.6 TAs for Recitation Classes	37
6.7 Being an Instructor of Record	40
6.8 Who to See for Questions About Your TA Duties	40
6.9 End-of-Semester Evaluations	41
6.10 Supplies Policies	41
7 Health Insurance	42
8 Taking Courses at Other Institutions	43
9 Leave of Absence (LOA)	44
10 Transfer Credits	46
11 Grievance Procedure	47
12 Career Planning	49
13 Graduate Student Organizations	50
13.1 Graduate and Professional Students Association (GPSA)	50

CONTENTS

5

13.2 University of Houston AMS Graduate Chapter	51
13.3 University of Houston AWM Graduate Chapter	52
13.4 University of Houston SIAM Student Chapter	53

Preface

The purpose of this handbook is to collect together practical information about Ph.D. programs in the Department of Mathematics at the University of Houston. This handbook was prepared primarily by graduate students, for current and prospective students in our program. It is intended as an *unofficial* but nonetheless informative and helpful guide. We have done our best to present information which is accurate at the time that this version of the handbook was completed. However, it is not intended as a legal document. For the official guidelines regarding any and all departmental and university courses, policies, and other matters, including TA and employment policies, the reader should consult the relevant portions of the University of Houston College of Natural Sciences and Mathematics Graduate Catalog and the University of Houston webpage, or contact the relevant parties in the university's administration.

Last update: January 2024

1 | Overview of the Department

The Department of Mathematics at the University of Houston offers an excellent environment to study mathematics and its applications. We have approximately 400 undergraduate majors, 80 graduate students, and the largest instructional mission on campus, with over 70,000 student credit hours offered each year, including over 10,000 student credit hours in online courses.

Our faculty is internationally recognized for research achievement and teaching, with outstanding research groups in Mathematical Biology, Computational Mathematics, Dynamical Systems, and Mathematical Analysis. We are home to two Cullen Chair Professors as well as an M.D. Anderson Chair Professor. In the 2010 NRC (National Research Council), our Department ranked 61st out of 127 programs, and it received particularly high scores for student satisfaction. In addition, our faculty members hold a large number of NSF grants and contracts from the Medical Center and Private Industry, and we received 3 of the 8 NARP awards given in Texas in 2010.

The Department of Mathematics offers programs leading to the degrees of Doctor of Philosophy (Ph.D.), Master of Science in Mathematics (M.S.), Master of Science in Applied Mathematics (M.S.), Master of Arts in Mathematics (M.A.), Master of Science in Statistics and Data Science (M.S.), Bachelor of Sciences in Mathematics (B.S.), and Bachelor of Arts in Mathematics (B.A.). In addition, the Departments of Mathematics and Biology offer a joint undergraduate degree in Mathematical Biology (B.S.).

The Department of Mathematics publishes the Houston Journal of Mathematics. It

is a member of the Texas Center for Computational and Information Science, and the Gulf Coast Consortium. In addition, we are home to the Center for Academic Support and Assessment, and we are a strong partner and principle administrative office for the teachHOUSTON program.

2 | Important Contacts

	Title	Name	Email Phone	Office Location
Department Administration	Department Chair	Dr. Bernhard Bodmann	bgb@uh.edu 713-743-3581	PGH 641A
	Associate Chair	Dr. Annalisa Quaini	aquaini@uh.edu 713-743-3491	PGH 662
Academic Contacts	Director of Graduate Studies	Dr. Alan Haynes	akhaynes2@uh.edu	PGH 613
	Assistant Director of Graduate Studies	Dr. Jennifer May	jrmay@uh.edu	PGH 218B
	MAM Program Scientific Faculty Advisor	Dr. Garry Etgen	etgen@math.uh.edu 713-743-3510	PGH 695
	MSDS Program Director and Faculty Advisor	Dr. Mikyoung Jun	mjun@central.uh.edu 713-743-7279	PGH 601
	MSDS Program Manager	Callista Brown	cbrown10@central.uh.edu 713-743-4644	Flem 11F
	MSDS Program Scientific Faculty Advisor	Dr. Robert Azencott	razencot@uh.edu 713-743-3489	PGH 608
	MSDS Associate Director and Faculty Advisor	Dr. Cathy Poliak	cathy@math.uh.edu 713-743-7644	Flem 11C
	Director of Undergraduate Studies	Dr. David Blecher	dblecher@uh.edu 713-743-3451	PGH 651E

	Associate Director of Undergraduate Studies	Dr. Nicholas Leger	nmleger@uh.edu 713-743-6751	PGH 218A
	Director for Instructional Support and Coordination	Irina Perepelitsa	iperepelitsa@uh.edu 713-743-7652	PGH 214
	Communications Manager	Treina Tai McAlister	ttmcalis@central.uh.edu 713-743-3511	PGH 691
Business Contacts	Business Administrator	Theiryynn Greenidge	tegreeni@central.uh.edu 713-743-3880	PGH 651C
	Asst. Bus. Admin. HR/ Payroll	Brianna Cook	bpcook@central.uh.edu 713-743-3022	TBD
	Asst. Bus. Admin. Finance/Grants/ Contracts/Budgets/ Account Inquiries	Leona Pham	tpham22@central.uh.edu 713-743-7840	PGH 625
	Financial Assistant II Non-travel reimbursement/ Invoice payments	Amy Kha	nmkha@central.uh.edu 713-743-1362	PGH 648
	Office Coordinator	Manisha Naik	mnaik4@central.uh.edu 713-743-7274	PGH 641
	User Services Specialist II IT Support	Dave Branda	dbranda@uh.edu 713-743-7256	PGH 660
	Operating System Programmer III IT Support	Jason Tibbitts	tibbs@uh.edu 713-743-3486	PGH 660

3 | Ph.D. Degree Plans

3.1. Degree Requirements

The Ph.D. program requires:

- A minimum of one academic year of full-time residence,
- A minimum of 54 credit hours,
- A cumulative GPA of 3.0,
- Enrollment in at least three semester hours of the Doctoral Dissertation course during the graduating semester,
- Several additional requirements from the Department of Mathematics, which include:
 1. Passing Preliminary Exams (see below in Section 4.3).
 2. Obtaining a grade of B or better in at least 24 semester credit hours of courses in the Mathematics Ph.D. program. Students should take doctoral research classes MATH 8x98 (where “x” is the number of credit hours) while conducting thesis research. Students must register for the course MATH 8x99 “Doctoral Dissertation” in the semester when they intend to graduate.
 3. At the end of their 6th and 8th long semesters the candidate is subject to Annual Performance Review (APR). The APR evaluates research progress of

the candidate. The APR is conducted in oral or written form by a committee consisting of the candidate's advisor and at least two faculty members of the Mathematics Department. The APR committee is chaired by the candidate's advisor. Candidates failing the APR are subject to termination from the Ph.D. program (see additional information about APR in Section 4.4).

4. The candidate must write a doctoral dissertation with the guidance of an advisor who is a regular faculty member of the Mathematics Department.
5. The candidate must defend his/her dissertation in a public examination by a thesis committee consisting of at least 4 members, three of whom are faculty members in the Mathematics Department and at least one member outside UH Mathematics Department.
6. A copy of the dissertation, approved by all the members of the thesis committee is transmitted to, and approved by, the office of the Dean of the College of Natural Science and Mathematics.

A few important remarks about the above points:

- Students who have received 12 hours of U grades and/or grades of C+ or lower are not eligible to receive a graduate degree.
- A minimum enrollment of 24 or 54 semester hours is required for students who hold a Master's degree or only a Bachelor's degree, respectively.
- Graduate students are not allowed to register for undergraduate classes.

3.2. Choosing a Thesis Advisor

The department's faculty and their research interests are listed at: <http://www.uh.edu/nsm/math/people/faculty/>. Students (especially during 1st and 2nd year) are strongly encouraged to:

- Meet with faculty to discuss their research interests.
- Attend seminars organized by different research groups. Information about the department's research groups can be found at <http://www.uh.edu/nsm/math/research/>.
- Talk to other students (those who already have an advisor) to learn more about the faculty and their research. If possible, do a reading course with the faculty of interest.

Ph.D. students should aim to have a research advisor by the time they begin their 3rd year.

Changing advisors: Your choice of Ph.D. advisor is one of the more important choices that you are likely to make in your academic career. Although the topic of *changing* advisors is not often discussed, you should be aware that it is a possibility. It is crucial that you begin the academic relationship with a potential advisor with an open discussion about expectations (e.g. what are your career goals, how does the advisor think that you can achieve them, does the advisor expect one or more papers before graduation, etc.). Once you have decided on an advisor, it is also not a bad idea to begin with a probationary period. Some advisors in our department regard the first semester of working together as probationary for both the student and faculty member. Either side can decide to walk away at the end, with no hard feelings. At the same time keep in mind that switching advisors does use up valuable time, and is essentially impossible after the 3rd year, given

the general rule that students are expected to try to finish the program in 5 years (see Section 5.1 for the financial implications, for most students, of staying longer).

3.3. Dissertation Committee

Doctoral students' dissertation committees must be comprised of **a minimum of four members**, three of whom have their primary appointment within the major department and one approved member external to the major department from industry or academia.

A faculty member with a joint appointment in the major department is considered as an outside member unless he/she chairs the committee. In this case, an additional external member outside the major department is required. After these minimum requirements for committee members are satisfied, additional committee members may be approved from industry or academia, but at least 50% of the committee must be tenured/tenure-track faculty at the University of Houston. Research faculty or instructional faculty may serve on dissertation committees, but not chair the committees. A research professor may also serve as a co-advisor with a tenured/tenure-track faculty.

Candidates must specify a dissertation committee and have the names on file in the Office of the Dean at least one semester prior to their graduation. The committee composition form can be found at:

http://www.uh.edu/nsm/_docs/nsm/students/graduate/Committee-Composition.pdf

3.4. Obtaining a Master's Degree Together with a Ph.D. Degree

Occasionally, a student in a Ph.D. program may want to obtain a Master's degree in the same major. In this case, the student may petition the department and college, however *such petitions may only be approved in special circumstances*. A student admitted into a Ph.D. program who wishes to obtain a non-thesis M.S. along with the Ph.D. will need to:

- Petition no sooner than at the beginning of the 4th academic year in the Ph.D. program and
- Have passed the candidacy/qualifying exam. The petition will be accompanied by a letter of support from the research advisor acknowledging that the student remains on track for a Ph.D. If the petition is approved, the M.S. career will be open for one semester only, when the student wishes to obtain the M.S. degree.

3.5. Applying for Graduation

It is advised that students should start planning their graduation early and be aware of the submission deadlines. The procedure to apply for graduation is as follows:

1. Submit the Committee Composition Form to Ms. Neha Valji at least **one semester before graduating**. The form can be found at <http://www.uh.edu/nsm/students/graduate/forms/>
2. If there is any change in the committee thereafter, students must submit a Change in Committee Form as soon as possible, also found at <http://www.uh.edu/nsm/>

[students/graduate/forms/](#)

3. Enroll in at least 3 credit hours of Doctoral Dissertation with faculty advisor in the graduating semester.
4. Apply for graduation on AccessUH:
 - Go to accessuh.uh.edu
 - Sign in with CougarNet account and password
 - Select myUH Self Service → Academic Records
 - On the right pane, choose “My Academics”
 - In the Graduation section, select “Apply for Graduation”
5. Submit the dissertation to NSM by the deadline: <http://www.uh.edu/nsm/students/graduate/thesis-guidelines/>
6. Contact Ms. Neha Valji to make sure all required paperwork is submitted.

NOTE: There is a \$25 fee for graduation applications. Late fees may be applied. Deadlines for graduation applications can be found on the University’s Academic Calendar: <http://publications.uh.edu/content.php?catoid=31&navoid=11767>

3.6. Thesis and Dissertation

Complete guidelines and instructions for Masters theses and Doctoral dissertations can be found on the NSM website at <http://publications.uh.edu/content.php?catoid=42&navoid=15332>

Every Fall and Spring semester, NSM organizes a thesis and dissertation workshop for students who plan to graduate with M.S. theses or Ph.D. dissertations. The workshop

goes over submission steps and deadlines, and it provides a guide to write and format theses and dissertations. Students who plan to graduate are strongly encouraged to attend. Summer graduates should attend the spring workshop as there is no workshop in the summer semester.

4 | Academic Expectations

In order to maintain the academic integrity of our program, the University, College, and Department have established a number of standards, and consequences for students who fail to meet them. The following subsections collect together most of the important rules related to these standards (some of them are taken verbatim from the UH and College of NSM websites). In many cases failure to adhere to these rules can lead to dismissal from the program. This underscores their importance, and we therefore encourage you to familiarize yourself carefully with the contents of this section.

4.1. Time Restrictions

- **Minimum requirements:** To be eligible for a PhD you must earn a minimum of 54 credit hours, be enrolled for one academic year of continuous full-time residence (this could be Fall/Spring or Spring/Summer/Fall), enroll in at least three credit hours of the Doctoral Dissertation course, and successfully complete all of the preliminary exams (see Section 4.3).
- **Time limit:** The maximum time allowed for obtaining a Master's degree is 5 years, and for a Ph.D. it is 10 years.
- **Continuous enrollment requirement:** You must maintain continuous enrollment and register each fall and spring semester in at least 3 credit hours. If you need to take a semester off then you may file a petition for a leave of absence (see Section

9). Students are not granted more than 3 semesters of leave of absence in their whole graduate career. Enrollment in the summer is not required, unless you are graduating that summer.

- **99-hour doctoral cap:** The State of Texas subsidizes a large portion of the costs of doctoral education at its public universities, and the State Legislature has decided to limit the length of time the state will continue this subsidy for individual students. The Legislature has voted to stop providing state money for educating graduate students who have 100 or more semester credit hours of doctoral work. This law has come to be called the “99-hour doctoral cap.”

All doctoral students who accumulate more than ninety-nine doctoral semester credit hours at any Texas public institution of higher education will be charged the nonresident tuition rates irrespective of student residency status or any appointment, fellowship, or other circumstance that would normally entitle them to resident tuition rates. The nonresident tuition rate is about 4 times the in-state graduate tuition. A petition requesting an extension of this deadline may be filed.

4.2. Grade Requirements

- **Minimum GPA requirements:** You need a minimum 3.00 cumulative GPA in order to receive a master’s or doctoral degree. You need a minimum 3.00 cumulative GPA in your certificate classes in order to obtain the certificate.

If a graduate student’s cumulative GPA falls below 3.00, the student is placed on Academic Warning. When a student is placed on Academic Warning, the student will be notified and will be instructed to contact their academic advisor. If the student does not raise the GPA to 3.00 after one long semester on Academic Warning,

the student will be placed on Academic Probation. A student on Academic Warning or Academic Probation is not allowed to defend their thesis or dissertation.

A student regains satisfactory academic standing when their cumulative GPA returns to 3.00 or above. A student on Academic Probation will be dismissed from the graduate program if any of the following occurs:

- the student’s cumulative GPA remains below 3.00 after completing an additional 9 SCH of letter-graded coursework.
- the student has not completed 9 SCH of letter-graded coursework within two long semesters after being placed on academic probation and the student’s cumulative GPA remains below 3.00.

In addition, to be eligible for a tuition waiver, scholarship, research assistantship, or teaching assistantship, you must have at least a 3.00 cumulative GPA in all the graduate courses you have on your UH graduate transcript.

- **Low grade policy:** If you accumulate 12 or more hours with grades of C+ or lower or U grades, you will be dropped from your graduate program and will be ineligible to enroll in graduate courses at UH. You will receive notification from the college when you have accumulated 6 hours of low grades, and you will need to meet with your graduate faculty advisor to draft a deficiency plan that must be filed with the college.

4.3. Preliminary Examinations

4.3.1 Background and Purpose

The Preliminary Examinations are an important step in assessing the students' abilities and appropriate mathematical background, in order to determine whether they are prepared to undertake a program of supervised research and study leading to a Ph.D. in Mathematics. Students who have completed their Master's degree in Mathematics may sometimes be ready to take the Preliminary Examination without further course study.

Preliminary Examinations are three-hour long, closed book written examinations that are given in a number of topics, which are listed below. The questions on the examinations emphasize problem solving skills and mathematical ability as opposed to rote memorization.

4.3.2 Timing

Preliminary Examinations are usually offered twice a year: at the end of the Fall and Spring semesters. However, this is partly subject to demand. If there are not enough students requesting to take a particular exam at one of these times, it may not be given.

All Ph.D. students are required to pass three Preliminary Examinations. Full time students must complete this requirement within 2 years, and part-time students must complete it within 3 years. Leave-of-absence semesters are not counted towards these time limits.

4.3.3 Administration of the Examination

The following rules apply:

1. Students must pass Preliminary Examinations in three of the different topic groups listed below.
2. At least one out of the three Preliminary Examinations must be the exam associated to one of the 'core sequences'. The core sequences are:
 - MATH 6320, 6321: Theory of Functions of a Real Variable
 - MATH 6360, 6361: Applicable Analysis
 - MATH 6370, 6371: Numerical Analysis
3. At least one of the three Preliminary Examinations must be from the following topics: Probability, Algebra, Topology group, Analysis group.
4. The total number of attempts for all Preliminary Examinations is five.

Examination topic groups are:

1. Algebra
 - MATH 6302: Modern Algebra
2. Topology
 - MATH 6342: Topology
 - MATH 7352: Riemannian Geometry
3. Analysis
 - MATH 6320, 6321: Theory of Functions of a Real Variable

- MATH 6322: Theory of functions of a Complex Variable
 - MATH 6360, 6361: Applicable Analysis
4. Probability and Statistics
- MATH 6382: Probability
 - MATH 6383: Mathematical Statistics
5. Computational Mathematics
- MATH 6366: Optimization and Variational Methods
 - MATH 6370, 6371: Numerical Analysis

4.4. Annual Performance Review (APR)

Typically, students start research during their 3rd year in the program, or whenever they pass all of their preliminary exams. To ensure that a student is making progress towards their dissertation, an Annual Performance Review (APR) must be completed at the end of the 6th and 8th long semesters during which they are enrolled in the program.

The APR may be completed in one of two ways:

1. A student can present an hour long seminar in the presence of their defense committee. After successful completion of the APR, the committee members need to sign the report.
2. A student can submit a report about their research. This report can be treated as the chapters that will be added to the student's dissertation. The defense committee must read the report and then sign the signature page of the report. A \LaTeX template is available for student use.

Notes:

1. The APR committee is usually composed of members who will later be asked to be on the defense committee of the student. However, the APR committee should not include any external committee members.
2. The signature page must be signed by the APR committee and then submitted to the Director of Graduate Studies.

5 | Financial Support

5.1. Graduate Tuition Fellowship

The Graduate Tuition Fellowship (GTF) program encourages students to complete their graduate studies in a timely manner. This fellowship covers the cost of in-state tuition and mandatory fees for qualified Ph.D. students.

5.1.1 Eligibility and Details

1. To be considered for funding, a student must have an undergraduate degree, or its equivalent, and be admitted to an NSM Ph.D. program.
2. A student must be registered full-time (9 credit hours) in the fall and spring semesters. Students who drop their enrollment below these hours during the semester will have their GTF retroactively revoked. Enrollment in the summer semester is not required unless the student is graduating.
3. The GTF will cover tuition and mandatory fees for graduate courses only (not undergraduate courses) and will cover no more than 9 hours in each of the fall and spring semesters, and 6 hours in the summer.
4. Students in their graduating semester, whether domestic or international, are encouraged to petition for a reduced course load (less than full-time registration, typically 3 hours). If granted, this exception to the full-time registration requirement

will be for one time only. Students who fail to graduate in the anticipated semester will need to register full-time in the future. All students should make their request on a Graduate Petition form. International students must also file a “Reduced Course Load” form issued by the Office of International Student and Scholar Services, if the graduating semester is the fall or spring semester.

5. Students entering the doctoral program should have a cumulative GPA of at least 3.00. Continuing students must have shown satisfactory progress in the degree program as defined by the college or department, and must maintain a cumulative GPA of at least 3.00. Award requests are made in August for the fall and spring semesters. Students who fail to maintain a cumulative GPA of at least 3.00 by the beginning of the spring semester will have their GTF revoked for the spring semester. Only students entering their second semester may petition to retain the GTF that semester if their cumulative GPA is less than 3.00.
6. **Students who enter the doctoral program with a master’s degree may hold the fellowship for no more than four academic years.**
7. **Doctoral degree-seeking students who enter the doctoral program directly from a baccalaureate program may hold the fellowship for no more than 10 long semesters.** Funding in the 11th and 12th semester is subject to availability and requires a petition. Students must show that they are in their anticipated graduating semester or the semester prior to the graduating semester, and have the support of the dissertation advisor and the department. Required documentation and further details can be found on the GTF Extension Request form that must be submitted together with the Graduate and Professional Student Petition form.
8. Graduate students holding the fellowship must be employed as a tuition-eligible Research Assistant (RA/TE), Teaching Assistant, or Instructional Assistant for no more than 20 hours per week (50% FTE) on campus at or above the minimum

salary approved by the University. This requirement applies whether the student is registered for a full load or a reduced course load. The employment, whether within the enrolling department or not, must be substantively related to the student's major field of study. Departments must be able to provide proof that the student's employment is of direct academic benefit to his/her degree objective. Violation of this provision will result in withdrawal of the funding during the semester in which the violation occurs.

9. Students who receive a competitive fellowship which provides a monthly stipend for living expenses, but does not cover tuition, will be eligible for the GTF.
10. Students who are graduating and leave UH before the graduating semester ends may petition to retain the GTF for that semester.

5.2. Graduate Student Assistantships

The department offers several types of Graduate Student Assistantships:

5.2.1 Teaching Fellows

Teaching Fellows (TFs) have direct student contact in a formal instructional setting and are charged with the primary responsibility for teaching a course for credit under the direct supervision of a faculty member experienced in the teaching discipline, regular in-service training and planned and periodic evaluations. Teaching Fellows are listed as the Instructors of Record for some of the classes they teach (not courses that carry graduate credit). Appointments at this level normally imply advanced academic status and substantial prior college or university experience. Typically, TFs should possess at least a master's degree or 18 graduate semester hours in the teaching discipline.

5.2.2 Teaching Assistants

Teaching Assistants (TAs) are graduate students who have direct student contact in a formal instructional setting but who do not have primary responsibility for teaching a course for credit; they perform under the instructor's direct supervision and provide general assistance to the instructional process.

The department typically employs over 50 teaching assistants per semester. These are graduate students in mathematics who usually (a) tutor students in the Mathematics laboratory, (b) conduct recitations for Calculus classes, or (c) grade for various courses. Generally teaching assistants do not teach regular courses.

Teaching Assistants receive a monthly salary and benefits for the 9-month academic year, as well as a Graduate Tuition Fellowship (GTF) when allowed. A GTF pays in-state tuition and fees for 9 hours of courses each semester. Students wishing to register for more than 9 semester credit hours in a semester pay for these hours at the resident tuition rate. A GTF can only be held for a total of five years for doctoral students- other rules and stipulations regarding GTFs have already been described above.

5.2.3 Instructional Assistants

Instruction Assistants (IAs) are graduate students who do not have direct instructional duties but assist employing departments with academic courses, programs, projects, or other activities in support of the instructional process.

5.2.4 Research Assistants

Research Assistants (RAs) are graduate students who are engaged in research activities that support the research mission of the employer. Often, RA positions are funded by external grants held by members of the faculty. This is one thing you may want to consider when choosing your advisor.

5.2.5 Graduate Assistants

Graduate Assistants (GAs) are graduate students whose responsibilities may be administrative in nature or consist of other activities that do not generally fit within the above categories.

Note: Students employed in this category are usually considered part-time staff employees under the university personnel system and are thus not eligible for all of the same benefits as students employed in the TA, TF, and IA categories.

5.2.6 Language Requirements for Appointments

To be eligible for Graduate Student Assistantships, students must have an undergraduate degree or its equivalent, be admitted to a graduate program, and be prepared to devote full-time efforts toward the degree. Students seeking appointments to serve as classroom instructors or in other roles that require communicating with students in English (primarily Teaching Assistants or Teaching Fellows) must meet one of the following requirements before teaching begins:

1. Completion of baccalaureate degree requirements at a regionally accredited U.S.

institution or an institution in Australia, Canada, New Zealand, South Africa, or the United Kingdom at which English is the medium of instruction.

2. Demonstrated proficiency in the English language, by completion of one of the following requirements: Test of Spoken English (TSE) (passing score of 50); Spoken Proficiency English Assessment Kit (SPEAK) test (passing score of 50); or the internet-Based Test (iBT) (passing score of 25). The TSE is administered at TOEFL test centers on TOEFL test dates. The SPEAK test administration may be arranged with the UH Testing Center.

Students scoring below the required minimums should enroll in LCC 6034, English for International Teaching Assistants and Faculty. This semester-long, non-credit course, offered through the Language and Culture Center, focuses on English pronunciation, including individual sounds, stress, intonation, fluency, and overall comprehensibility; orientation to U.S. academic culture; and teaching skills, including non-verbal communication, explaining, presenting, fielding questions, and leading a discussion. Students will sit for the SPEAK examination at the conclusion of the course and the same minimum score as above (50) will be required to meet the English language proficiency requirement at that time.

5.3. Other Fellowships

5.3.1 Presidential Fellowship

The Presidential Fellowship is funded by UH. It assists departments or programs in the recruitment of outstanding students. The fellowship program provides funds to match or exceed financial assistance packages offered by other institutions. Only students of

exceptional caliber who represent extraordinary recruitment opportunities will receive these fellowships.

Eligibility

The two-year fellowship is available for outstanding students entering a Ph.D. program at UH in the fall semester. The potential for academic excellence is the main criteria for selection. The selection of fellows is made only at the time students are being considered for admission into the Ph.D. program.

All Ph.D. applicants who apply for TA support are automatically considered for the Presidential Scholarship.

Awards

Recipients will be awarded a \$2,000 per year fellowship for the first two years of graduate study. Students must meet minimum full-time enrollment (9 hours) and a cumulative 3.00 GPA to maintain the fellowship each semester it is held. Award funding will be withdrawn in the event this agreement is violated.

5.3.2 External Fellowships

In addition to the above mentioned sources of funding, there is a long list of external fellowships which, if obtained, can provide a significant boost towards achieving your research and career goals. A partial list of such fellowships (copied from the University of Colorado, Boulder webpage linked *here*) follows. The name of each fellowship below is linked to the appropriate website.

- NSF Graduate Fellowship Program
- NSF Summer Internship Program
- DOE Computational Science Graduate Fellowship
- DOE Office of Science Graduate Student Research (SCGSR) Program
- DOD Science and Engineering Graduate Fellowship
- NIH Individual Predoctoral Fellowship
- Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program
- NASA Earth and Space Science Fellowship
- GEM Fellowship Program
- Hertz Foundation Graduate Fellowship
- Ford Foundation Fellowship Program
- Gates-Cambridge Fellowship
- Google PHD Fellowships
- NVIDIA Graduate Fellowships
- Intel PHD Fellowship Program
- IBM PHD Fellowship
- Microsoft PhD Fellowship Program
- Chateaubriand Fellowship
- Soros Fellowships for New Americans

- National Physical Science Consortium Fellowship
- AAUW
- HHMI fellowship for international students
- SIAM student paper award
- APS best dissertation awards
- NDSEG Fellowship
- DOE NNSA Stewardship Science Graduate Fellowship
- Link Foundation: Modeling, Simulation, and Training Fellowships
- National Academies Research Associateship Program

6 | TA Duties

This section was compiled by Irina Perepelitsa, with assistance from Jasmine Bhullar and Akshat Das (and subsequently edited by other graduate representatives and members of the GSC). It contains more details about duties and responsibilities of departmental TAs. The following policies and guidelines apply to all TAs working at the Department of Mathematics.

6.1. TA Assignment

The Director for Instructional Support and Coordination is currently responsible for teaching assignments.

In order to avoid conflict with student course schedules, all TAs must fill out the Online Graduate Course Selection form. The link to the form will be sent to you at least two weeks prior to the beginning of each semester. It is the TAs responsibility to fill the form in a timely manner and inform the department of any changes in his/her class schedule. If you are supported by a faculty member (fully or partially), it should be indicated in the Course Selection form. If you have certain specific requests or concerns related to your teaching duties, you should include them in the Course Selection form.

Teaching assignment notices will be emailed to each TA the week before each semester. You must check your official UH email daily during that week.

6.2. Duties and Hours

Typical duties of a teaching assistant consist of, but are not limited to, one or some combination of the following:

1. Working in CASA tutoring center as a tutor.
2. Conducting recitation sessions for Calculus.
3. Grading assignments for a professor.

In the teaching assignment, you will find your duties, the course number, name of the instructor, and required hours for tutoring at CASA. It is a TAs responsibility to contact the professor(s) as soon as he/she receives the assignment.

All TAs must report to work from the first day of the semester until their TA duties for the semester are complete. A TA might also be required to attend orientation/training sessions prior to the beginning of the semester.

A semester officially ends on the day set as the deadline for faculty to post Final Grades in myUH. The exact date for each semester can be found in UH Academic calendar. TAs are expected to report to work until the end of the semester. Any travel plans and requests to leave Houston before the end of a semester must be discussed with and approved by the faculty member the TA had been assigned to work with.

All TAs must check their official UH emails daily.

6.3. FERPA

All TAs must familiarize themselves and follow the University of Houston's policies relating to Family Educational Rights and Privacy Act (FERPA). In particular, TAs must take precautions to keep student grades private, and not release grade information publicly or to outside parties (including a student's parents) without prior written consent of the student. More information on the FERPA policy can be found here:

<http://www.uh.edu/dos/parents/resources/ferpa-explanation/>

6.4. University Policies Related to Discrimination, Harassment, and Misconduct

All TAs must be familiar with and follow the University of Houston's policies related to discrimination, harassment, and other forms of employee misconduct. Specifically, we refer TAs to the administrative memorandums 01.D.07, 01.D.08, and 01.D.10 for details regarding these policies:

<http://www.uh.edu/af/universityservices/policies/sam/1GenAdmin/1D7.pdf>

<http://www.uh.edu/af/universityservices/policies/sam/1GenAdmin/1D8.pdf>

<http://www.uh.edu/af/universityservices/policies/sam/1GenAdmin/1D10.pdf>

If you have any questions regarding these policies, please contact the Chairman or the Graduate Director.

6.5. Tutoring Work

Every TA who receives a notice to work certain hours at CASA Tutoring Center will be contacted and will receive instructions and the working schedule from the Program Director of the CASA Tutoring Center. All TAs must follow the rules at the CASA Tutoring Center.

6.6. TAs for Recitation Classes

6.6.1 Class Cancellation Policy

TAs are not authorized to dismiss or reschedule their class without prior approval of the department Chair, the Director of Undergraduate Studies, Director for Instructional Support and Coordination, or Assistant Director of Undergraduate Studies. TAs are not authorized to have anyone else teach his or her class without prior approval of the professor you have been assigned to work with. Should a TA be unable to meet a class due to an unforeseen emergency, they are expected to make every effort to find a substitute and notify the professor they have been assigned to work with. If a TA is unable to find a substitute, they should inform the Front Office (713-743-3500).

TAs are expected to be on time for their classes; they should be prepared to teach and must follow instructions from their professors.

6.6.2 Incident Reporting and CAPS

If you have a student that exhibits concerning or threatening behavior, please report the incident as soon as possible to the instructor of record for the course (or if immediate safety is a concern, please call campus police or 911). More information on how to respond to concerning behavior can be found here:

https://www.uh.edu/caps/crisis_intervention/helping_students_of_concern.html

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. *You can reach (CAPS) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis.* No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus. Please visit <https://www.uh.edu/caps/> for more information on these services.

Mental health services: CAPS clinical staff consists of a large number of mental health professionals who are employed to help students, faculty, and staff. Students who are experiencing personal issues that interfere with their daily activities, including stress, anxiety, relationship problems, loneliness, depression, adjustment issues, identity issues, or suicidal thoughts are encouraged to contact CAPS staff, who can help.

6.6.3 CSD Students and Requests for Accommodations

The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision

of reasonable accommodations for students who have a disability. In accordance with Section 504 and ADA guidelines, University of Houston strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them.

The instructor of record generally handles implementation of accommodations. Instructors will coordinate with the The Center for Students with Disabilities (CSD) office to make such accommodations.

If you are working as a Calculus TA and a student approaches you regarding CSD accommodations, please refer the student to the instructor of record for the course. Please do not ask the student to disclose confidential information about their accommodations, such as details about their condition.

If you are a graduate student serving as the instructor of record for a course, please consult your course coordinator for the proper way to handle such requests. Since information regarding a student's approved accommodations is confidential, any related discussions with the student should be conducted privately and not within earshot of other students.

More information on the UH Academic Adjustments/Auxiliary Aids policy can be found here:

<http://www.uh.edu/af/universityservices/policies/sam/1GenAdmin/1D9.pdf>

6.6.4 Exam Grading

The Lead TAs will announce exam-grading days in advance. All Calculus TAs are required to be present and to participate in every exam grading session. TAs may leave to

attend their classes or tutoring session at CASA but must return to the exam grading and stay until dismissed by the lead TA. If you are unable to attend a grading session due to an unforeseen emergency, you are expected to find a substitute and notify the Lead TA. The Director of Undergraduate Studies, Director for Instructional Support and Coordination, Assistant Director of Undergraduate Studies, or the professor the TA is assigned to work with must approve the substitute. Exam grading is an integral part of the TA duties and is not to be considered as voluntary work.

6.6.5 Record Keeping

At the end of each semester, all graded student assignments not returned to students during the semester must be returned to the professor the TA had been assigned to work with.

6.7. Being an Instructor of Record

If you are a PhD student with a good academic standing and prior teaching experience, you may request to teach a regular course as an Instructor of Record. If approved, you will be assigned to a mentor who usually is a senior faculty member and/or a course coordinator. You may contact the Director for Instructional Support and Coordination or Assistant Director of Undergraduate Studies with your request.

6.8. Who to See for Questions About Your TA Duties

If you have any questions regarding your grading/teaching assignment, contact the professor you have been assigned to work with or the lead TA for the course as soon as possible.

If the questions remain, contact the Director for Instructional Support and Coordination. The Graduate Director will be able to help with any unresolved concerns.

6.9. End-of-Semester Evaluations

At the end of each semester, professors, and/or Program Director of the CASA Tutoring Center and/or Lead TAs will evaluate TAs on their performance.

The Graduate Studies Committee may revoke a teaching assistantship at any time if a TAs performance is found to be unsatisfactory.

6.10. Supplies Policies

All department equipment and materials such as Xerox machines, telephones, computers, print papers, mails and supplies are provided for professional use only, and are not for personal use.

7 | Health Insurance

Funded Ph.D. students receive \$1800 insurance stipend each academic year.

Domestic students can opt for the Student Health Insurance Plan endorsed by the University of Houston.

International students with F and J type visas are required to be covered under the University of Houston Systems' Student Health Insurance Plan or have equivalent health insurance coverage, regardless of the number of credit hours taken. If the latter, students must provide a waiver at the beginning of each semester. More information about the requirements and waiver periods can be found at <http://www.uh.edu/healthcenter/insurance/international-student-health-insurance-requirements/>

Note: The Student Health Center only accepts the student health insurance plan endorsed by the University.

8 | Taking Courses at Other Institutions

PhD students can take topics classes at Rice University, UT Health, UTMB, or Baylor College of Medicine. PhD students who want to take classes at other institutions must have a thesis advisor. The request is initiated by the student's thesis advisor and the procedures are as follows:

1. The thesis advisor (or student) should contact the faculty at the other institution and receive an informal agreement that the student can attend the class.
2. The thesis advisor has to email the Graduate Director (UH Math Dept) a short supporting letter stating that this class is important for student's research and is NOT offered at UH.
3. The student has to fill out the Inter-Institutional Form and submit this form to the Graduate Director in the UH Math Dept.

9 | Leave of Absence (LOA)

Who should file?

All graduate students (M.S. thesis, M.S. non-thesis, Ph.D.) who plan to not enroll in a long semester (fall or spring semester) during which they are in the graduate program.

How long can a LOA be?

The LOA petition will be approved for only 1 semester at a time. If a student plans to be away from graduate work for more than a semester at a time, he/she will have to petition for another LOA prior to the beginning of the following semester.

How many LOAs will be approved in a graduate career?

Students will not be granted more than 3 LOAs in their entire graduate career. It can be 3 consecutive long semesters, any 3 individual semesters, or any combination.

How to file an LOA?

Students must fill out a graduate petition and the leave of absence application form, which is available at: https://www.uh.edu/nsm/_docs/nsm/academics/leave-of-absence-application.pdf

They should also attach the appropriate documentation as needed. If the LOA is for medical reasons, a letter from a physician is required. For job-related reasons, a letter from the employer is required detailing the time the student is being hired or giving reasons for increased workload, travel, etc., with a clearly indicated timeframe. Reasons such as “need to take a break” or “need time to reassess career goals,” or similar reasons, will not be accepted. It is very important that students detail how they will make up for the lost time because the time limit for completion to degree is not extended by an approved leave of absence (5 years for M.S., 10 years for Ph.D.). Students are not expected to work on their thesis or dissertation during the leave of absence.

Other important information

A Dean’s hold will be placed on the student account once the LOA has been approved. The student will need to submit a graduate petition requesting a graduate studies reinstatement prior to the start of the semester in which they plan to return. Once the reinstatement is approved, the hold will be removed, and the student can register for classes. Students who have not previously provided a proof of meningitis vaccination will need to do so in order to register.

Students who do not return to school at the end of the approved LOA and have not petitioned for another LOA will be terminated from the program per University procedures.

10 | Transfer Credits

Students can petition to transfer graduate credit taken previously at other Universities. In order to do so, students must submit the Graduate & Professional Student Petition form, which is available at: <http://www.uh.edu/academics/forms/Graduate-General-Petition-1.pdf>

For classes taken outside of UH prior to the enrollment into any UH graduate program, all credit transfers have to be requested during the first semester at UH.

For outside classes taken concurrently with UH studies, all transfer requests have to be submitted prior to the graduating semester. In addition, approval for taking an outside class concurrent with the UH studies must be obtained prior to enrolling into that class (see above for information about the relevant procedures). No credit transfer requests will be granted during the graduating semester.

A detailed description of the class syllabus and other study/test material (e.g. book used for the class, catalog description, etc.) must be attached to the petition. Credit transfer does not apply to the MSDA program. For additional information, visit <http://publications.uh.edu/content.php?catoid=30&navoid=11032>.

11 | Grievance Procedure

A multi-level procedure for redress of a grievance concerning academic and instructional matters¹ as well as university related employment problems within the college is available to any graduate student. Prior to initiating the grievance process at the departmental level, the grieving student has the opportunity to seek advice from the College, by requesting an appointment with the Associate Dean for Graduate Studies. The Associate Dean may recommend that the student meet with one or two members of the College Graduate Committee, who are not in the same department as the student, to discuss the issues at hand. Every effort shall be made by the student, faculty member, and chair to resolve the grievance within the departmental structure. If the departmental grievance procedures do not resolve the grievance, the graduate student may petition the college for redress of the grievance. The student must file written notice of a formal grievance with the Associate Dean for Graduate Studies within ten calendar days from the receipt of the departmental decision regarding the grievance. In this notice, the grievant must state:

1. The issue being grieved and provide evidence to support the grievance
2. The desired resolution

The Associate Dean will form an ad-hoc committee to hear the complaint. This ad-hoc committee will be composed of two faculty members and one graduate student from the College of Natural Sciences and Mathematics. One of the two faculty members will be

¹Because assigning a grade or evaluating a student's academic performance involves the faculty's professional judgment and is an integral part of the faculty's teaching responsibilities, disagreement with an instructor concerning a grade or evaluation is not a justifiable grievance under this policy. In cases where such is in question, the faculty member shall be responsible for the assignment of grades.

from the department concerned, and the second faculty member will chair the committee. A student from the department concerned shall not be appointed.

The ad hoc committee is empowered to know the department's proposed solutions and, if deemed appropriate, to take testimony from individuals involved in the case. Such individuals will be contacted to set a time, place, and date for their testimony to be given. No formal record of the proceedings need be kept. Normally, the ad-hoc committee shall complete its work within thirty calendar days of the request for a hearing unless extenuating circumstances make this deadline impossible to meet.

A brief, written summary of the findings of the ad hoc committee and their recommendations will be provided to the Dean of the college upon completion of the committee's work. The Dean will make a final decision which shall be binding on both the department and the student, and shall notify the grievant and the department in writing within ten calendar days from the receipt of the committee's report.

If the student does not find the Dean's decision acceptable, the student may, within ten calendar days of the receipt of the Dean's decision, appeal their case to the senior vice president for academic affairs.

12 | Career Planning

Early on in their programs, graduate students should speak with their advisors (thesis advisor or Graduate Studies Director) about career paths after graduation. This will help students determine what skills they need to develop, and what goals they need to achieve, during graduate school. It is also recommended that students connect with the department's alumni to see where and how they obtained their first jobs.

The Career Service Center provides a wide array of services to all currently enrolled students. When students are on the job market or seeking internships, they are advised to schedule a one-on-one meeting with a career counselor. The counselor can help students draft job application material, conduct mock interviews, and provide helpful advice on job hunting. More information about Career Service Center can be found at: <http://www.uh.edu/campus-life/career-services/index.php>

13 | Graduate Student Organizations

13.1. Graduate and Professional Students Association (GPSA)

13.1.1 Mission

The GPSA serves **all** graduate and professional students at the University of Houston. The organization acts as a channel where students can voice their concerns, resolve difficulties, and provide feedback on issues that directly affect graduate student life. GPSA's missions are:

1. To foster interdisciplinary excellence in masters and doctoral research as well as to enhance the impact of graduate groups and students.
2. To advocate changes deemed necessary by graduate students.
3. To encourage unity among the graduate and professional students as a whole.
4. To improve the academic environment for graduate and professional students through sponsored events.
5. To serve as an outreach venue for graduate and professional students by providing opportunities for social interaction and services to the local community.

13.1.2 Website and Contacts

Website: <https://www.uh.edu/graduate-school/gpsa/>

Contact: Sydnee Spruiell Eldridge (sfspruie@central.uh.edu)

13.2. University of Houston AMS Graduate Chapter

13.2.1 Mission

The AMS Graduate Student Chapter is sponsored by the American Mathematical Society. The chapter promotes mathematical research and education among graduate students in the following ways:

1. Encourage students in pure and applied mathematics.
2. Organize social and professional activities to discuss mathematics, share ideas, hone job skills, and prepare students for jobs in academia and elsewhere.
3. Increase awareness of opportunities and experiences related to mathematics and professional development.
4. Inform graduate students about all aspects of mathematics, both as a subject and a profession.
5. Promote interaction among graduate students, faculty, and undergraduates and strengthen the sense of community in our department.

13.2.2 Website and Contacts

Website: <https://www.math.uh.edu/ams/>

Contact: Jasmine Bhullar (jbhullar@math.uh.edu)

13.3. University of Houston AWM Graduate Chapter

13.3.1 Mission

The purpose of the Association for Women in Mathematics is to encourage women and girls to study mathematics and its applications to the sciences, to support women who are currently pursuing careers in mathematics, and to build a network among the women in mathematics at the University of Houston. Also, we strive to promote a welcoming community for all graduate and undergraduate students interested in mathematics. UH-AWM supports the Non-Discrimination Statement of the Association for Women in Mathematics. Notably, our group is not only open to women- all are welcome to join our chapter activities and become members of the organization! In addition to graduate students, we welcome undergrads, lecturers, postdocs, faculty, and basically anyone interested in learning more about math, whether it's about career paths, math education, or research-related.

13.3.2 Website and Contacts

Website: <https://math.uh.edu/awm>

Contact: awm@math.uh.edu

13.4. University of Houston SIAM Student Chapter

13.4.1 Mission

UH SIAM is a student organization sponsored by the Society for Industrial and Applied Mathematics (SIAM) and Department of Mathematics at the University of Houston, including students from various departments: mathematics, computer sciences, engineering, physics, biology, and other sciences.

The chapter's primary goals are:

1. To help facilitate applications of mathematics and computational science to industry and academics
2. To provide a community for the exchange of information and ideas among mathematicians, engineers, and scientists.
3. To promote career opportunities for students
4. To encourage students to develop effective presentation and leadership skills.

13.4.2 Website and Contacts

Website: <https://math.uh.edu/uhsiam>

Contact: uhsiam@gmail.com