



UNIVERSITY OF CENTRAL FLORIDA

Mathematics PhD Graduate Program Handbook

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Table of Contents

Introduction	1
Curriculum	1
Timeline for Completion.....	1
Courses	2
Examination Requirements	2
Qualifying Examination	2
Candidacy Examination	2
Dissertation Requirements	2
University Dissertation Requirements	3
Dissertation Defense	3
Annual Review.....	3
Graduate Research	3
Active Research Areas of Faculty	4
Financial Support.....	4
Graduate Student Associations	5
Professional Development.....	5
Instructor Training and Development	5
Graduate Student Association	6
Pathways to Success Workshops	6
Graduate Research Forum.....	6
Graduate Excellence Awards	6
Other.....	7
Job Search.....	7
Forms.....	7
Useful Links	8
Grad Faculty	8
Contact Info	12

Mathematics PhD

Together, the [Graduate Student Handbook](#) and your graduate program handbook should serve as your main guide throughout your graduate career. The Graduate Student Handbook includes university information, policies, requirements and guidance for all graduate students. Your program handbook describes the details about graduate study and requirements in your specific program. While both of these handbooks are wonderful resources, know that you are always welcome to talk with faculty and staff in your program and in the Graduate College.

The central activities and missions of a university rest upon the fundamental assumption that all members of the university community conduct themselves in accordance with a strict adherence to academic and scholarly integrity. As a graduate student and member of the university community, you are expected to display the highest standards of academic and personal integrity.

Here are some resources to help you better understand your responsibilities:

- [Academic Honesty](#)
- [Academic Integrity Training](#) - Open to all graduate students at no cost
- [Plagiarism](#)

Introduction

The Mathematics PhD program consists of at least 75 credit hours of course work beyond the bachelor's degree, of which a minimum of 39 hours of formal course work, exclusive of independent study, and 15 credit hours of dissertation research (7980) are required. The program requires 18 credit hours of core courses, and 6 to 12 credit hours in two 2-semester sequences. The remaining 30 to 36 credit hours consist of additional dissertation research (7980 or 7919), at least 15 credit hours of regular classroom elective courses, and at most 12 credit hours of independent study or independent directed research. Electives require the approval of the adviser and the graduate program director; up to 12 credit hours may be taken outside the department. At least one-half of the program courses must be taken at the 6000 level. Students that pass the qualifying examination may substitute some of the core courses at the approval of the adviser and the graduate program director.

Students in the Mathematics PhD program are expected to complete their degree in no more than seven years. Our students usually take three to five years to finish the PhD degree after the MS degree or four to six years to complete the PhD degree after the BS degree.

Curriculum

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

Timeline for Completion

All incoming graduate students are required to take the core course sequences starting in the fall. After the first year, all students have to take a qualifying examination. The written examination is based on the courses on Mathematical Analysis and on Linear Algebra and Matrix Theory. The outcomes of the examination are Not Pass, Master Pass and PhD Pass. Students have two tries on the examination. A waiver for not taking the core courses is granted to incoming students who can pass the qualifying examination before they start the program. The examination is given twice per year.

After finishing the core courses, PhD students must complete at least two semester sequences. Students are encouraged to choose a research direction and find a thesis or dissertation advisor before the end of the fourth semester of study.

In the third year or after earning PhD pass in qualifying examinations, PhD students should take the candidacy examination of two sequences, with each sequence is based on two graduate course sequences related to the student's research field.

PhD students must take 15 dissertation credit hours after they pass the candidacy examination plus 60 courses credit hours. Students must defend their dissertation and get the approval of the dissertation committee in order to obtain their PhD degree.

Courses

For a listing of courses planned for the academic year visit the [Course Schedule Webpage](#) on the [Mathematics Program website](#).

Examination Requirements

Qualifying Examination

The qualifying/comprehensive examination is based on the core course work. To continue in the PhD program students must pass the examination at the PhD level on Mathematical Analysis and on Linear Algebra and Matrix Theory. Two attempts are permitted. The examination will be administered twice a year: one in the Fall semester and one in the Spring semester. To take the examination, students should have earned a "B" or better in each core course, must have a minimum grade point average of 3.0 (out of 4.0) in the program, or must obtain permission from the graduate program director.

Students normally start taking this exam after taking the corresponding courses, and are expected to have completed the exams by the end of the second year unless a written request for a postponement has been approved by the program director at least two months prior to the examination date.

It is strongly recommended that the student select a dissertation adviser by the completion of 18 credit hours of course work, and it is strongly recommended that the student works with the dissertation adviser to form a dissertation committee within two semesters of passing the Qualifying Examination.

Candidacy Examination

The Candidacy Examination includes examination based on the materials from two of the selected two-semester sequence courses taken by the students beyond the core courses. A committee formed or selected by the program director is responsible for preparing and grading the written examinations.

After passing both parts of the candidacy examination and meeting other requirements, the student can register for Doctoral Dissertation (MAP 7980 or MAA7980). A minimum of 15 Doctoral Dissertation credit hours are required. The Candidacy Examination can be attempted after passing the qualifying examination, and the Candidacy Examination must be completed within two years after passing the qualifying examination. A student must successfully pass the Candidacy Examination within at most two attempts in each part.

Note: Students that pass the candidacy exam must have the candidacy and dissertation advisory committee documentation received and processed by the College of Graduate Studies prior to the first day of classes for the term in order to enroll in dissertation hours for that term.

Dissertation Requirements

The following is from the [UCF Graduate Catalog Dissertation Requirements](#) section:

"The dissertation consists of an original and substantial research study designed, conducted, and reported by the student with the guidance of the Dissertation Committee. The written dissertation must include a common theme with an introduction and literature review, details of the study, and results and conclusions prepared in accordance with program and university requirements. The dissertation is expected to represent a significant contribution to the discipline. Since this work must be original, it is very important that care is taken in properly citing ideas and quotations of others. Failure to do so is academic dishonesty and subject to termination from the program without receiving the degree. An oral defense of the dissertation is required."

University Dissertation Requirements

The College of Graduate Studies [Thesis and Dissertation page](#) contains information on the university's requirements for dissertation formatting, format review, defenses, final submission, and more. A step-by-step completion guide is also available on [Thesis and Dissertation Services](#) Site.

All university deadlines are listed in the [Academic Calendar](#). Your program or college may have other earlier deadlines; please check with your program and college staff for additional deadlines.

The following requirements must be met by dissertation students in their final term:

- Submit a properly formatted file for initial format review by the format review deadline
- Submit the Thesis and Dissertation Release Option form well before the defense
- Defend by the defense deadline
- Receive format approval (if not granted upon initial review)
- Submit signed approval form by final submission deadline
- Submit final dissertation document by final submission deadline

Students must format their dissertation according to the standards outlined in [Thesis and Dissertation Webcourse](#). Formatting questions or issues can be submitted to the Format Help page in the [Thesis and Dissertation Services](#) site. Format reviews and final submission must be completed in the [Thesis and Dissertation Services](#) site. The Dissertation Approval Form is also available in the Thesis and Dissertation Services site.

The College of Graduate Studies offers several thesis and dissertation [Workshops](#) each term. Students are highly encouraged to attend these workshops early in the dissertation process to fully understand the above policies and procedures.

The College of Graduate Studies thesis and dissertation office is best reached by email at editor@ucf.edu.

Dissertation Defense

It is the responsibility of the student to make the arrangement of the defense. This involves scheduling the time, finding a room, and preparing the announcement (and send it to the Graduate Assistant) of the defense. Dissertation students are encouraged to be proactive throughout the research process. Effective planning, awareness and use of resources and communication with dissertation committee and other faculty and staff can greatly enhance the dissertation experience and document.

Annual Review

Information projected to be entered in 2019-2020.

Graduate Research

UCF has three fundamental responsibilities with regard to graduate student research. They are to (1) support an academic environment that stimulates the spirit of inquiry, (2) develop the intellectual property stemming from

research, and (3) disseminate the intellectual property to the general public. Students are responsible for being informed of rules, regulations and policies pertaining to research. Below are some general policies and resources.

Research Policies and Ethics Information: UCF's Office of Research & Commercialization ensures the UCF community complies with local, state and federal regulations that relate to research. For polices including required Institutional Review Board (IRB) approval when conducting research involving human subjects (e.g. surveys), animal research, conflict of interest and general responsible conduct of research, please see the website: research.ucf.edu/ > Compliance.

UCF's Patent and Invention Policy: In most cases, UCF owns the intellectual property developed using university resources. The graduate student as inventor will according to this policy share in the proceeds of the invention. Please see the current UCF Graduate Catalog for details: catalog.ucf.edu/index.php?catoid=4 > Policies > General Graduate Policies.

Active Research Areas of Faculty

For full information on the faculty's varied areas of interest, please see the department web page with faculty members organized by research groups at sciences.ucf.edu/math/research/. The Department of Mathematics [website](#) also provides examples of research opportunities for students.

Financial Support

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see [Funding for Graduate School](#), which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The [Financial Information](#) section of the Graduate Catalog is another key resource.

Key points about financial support:

- If you want to be considered for loans and other need-based financial assistance, review the UCF Student Financial Assistance website at finaid.ucf.edu and complete the FAFSA (Free Application for Federal Student Aid) form, which is available online at studentaid.ed.gov/sa/fafsa. Apply early and allow up to six weeks for the FAFSA form to be processed.
- UCF Graduate Studies awards university graduate fellowships, with most decisions based on nominations from the colleges and programs. All admitted graduate students are automatically considered in this nomination process. To be eligible for a fellowship, students must be accepted as a graduate student in a degree program and be enrolled full-time. University graduate fellowships are not affected by FAFSA determination of need.
- Please note that select fellowships do require students to fill out a fellowship application (either a university fellowship application, an external fellowship application, or a college or school fellowship application). For university fellowship applications, see [UCF Graduate Fellowships](#) on the College of Graduate Studies website.
- For information on assistantships (including teaching, research, and general graduate assistantships) or tuition support, contact the graduate program director.
As part of a program's professional development plan for students, full-time graduate students may be offered the opportunity to gain experience as a Graduate Teaching Assistant (or Associate; GTA), Graduate Research Assistant (or Associate; GRA), or Graduate Assistant.

Assignments to these professional development activities are intended to supplement the student's academic plan of study in order to give the student work experiences that will enhance the student's professional development and prepare him/her for post-graduation professional employment. While these activities involve the requirement for students to work in standard graduate assistantship positions, their over-riding purpose is to help develop the skills, abilities, and professional background of the student.

During the academic year (fall and spring), the duties assigned to graduate assistants may not require employment for more than 20 hours per week. During the summer terms, graduate assistants may be employed for up to 30 hours per week.

All graduate assistants (GTAs and GRAs) must be assigned for at least 10 hours per week. However, the standard assignment for graduate assistants is 20 hours per week. Students who want to work for hours in excess of 20 hours per week during Fall and Spring semesters or for more than 30 hours during the summer semester, must complete [Supplemental Assignment Form](#). UCF Graduate Studies will only grant exceptions to this policy in rare circumstances and for compelling reasons related to the student's professional development. Exceptions are granted only rarely during the first year of a student's plan of study. Decisions are based upon the student's academic record, the number of excess hours requested, the relationship of the assignments to the student's plan of study, support from the graduate program director, and related factors.

For financial support available specifically for graduate students in the mathematics discipline visit the [Financials webpage](#) on the [Mathematics program website](#).

Graduate Student Associations

The Graduate Student Association (GSA) is UCF's graduate organization committed to enrich graduate students' personal, educational and professional experience. To learn more or get involved, please visit [facebook.com/groups/UCFgsa/](https://www.facebook.com/groups/UCFgsa/). For individual department or graduate program organizations, please see program advisor.

[American Mathematical Society \(AMS\)](#) serves to further the interests of mathematical research and scholarship, serves the national and international community through its publications, meetings, advocacy and other programs.

[Mathematical Association of America \(MAA\)](#) is an organization for people who love the mathematical sciences. A community that values discussion and exposition, for meeting colleagues and building knowledge together.

Mathematical Knights promotes interest in mathematics and the applications of mathematics through education, leadership and service.

Professional Development

Many opportunities are provided in the department for students to collaborate with faculty on research. Students in the program are encouraged to attend conferences to present their research and to publish papers in their areas of interest. Within the department, students attend and are encouraged to present research at graduate seminars held weekly. In addition to the professional development opportunities available in the department, UCF also provides many opportunities through the Faculty Center for Teaching and Learning (fctl.ucf.edu/), and the graduate studies office (graduate.ucf.edu/).

Instructor Training and Development

The Faculty Center for Teaching and Learning (FCTL) promotes excellence in all levels of teaching at the University of Central Florida. To that end, they offer several programs for the professional development of Graduate Teaching Assistants at UCF.

- **GTA Training** (*Graduate Teaching Assistant/Associate*)
This two-day workshop provides information and resources for students who will be instructors. The seminars cover a variety of topics, including course development, learning theories, lecturing, and academic freedom. Those interested in additional training can also attend an optional training session that normally follows the mandatory training.

- **Preparing Tomorrow's Faculty Program**

This certificate program (12-weeks for domestic students, 16-weeks for international students) consists of group and individualized instruction by Faculty Center staff and experienced UCF professors. Textbooks and materials are provided, and a stipend is offered to current UCF students who complete the certificate. International students are provided the same training as well as information regarding language immersion and tricks and cultural awareness as a way of knowing what to expect from American students.

For more information fctl.ucf.edu/ > Events > GTA Programs or call 407-823-3544.

Graduate Student Association

The Graduate Student Association (GSA) is UCF's graduate organization committed to enrich graduate students' personal, educational and professional experience. To learn more or get involved, please visit facebook.com/groups/UCFgsa/.

Pathways to Success Workshops

Coordinated by the College of Graduate Studies, the Pathways to Success program offers free development opportunities for graduate students including workshops in Academic Integrity, Graduate Grantsmanship, Graduate Teaching, Personal Development, Professional Development, and Research. For more information and how to register, please visit graduate.ucf.edu/pathways-to-success/.

Graduate Research Forum

The Research Forum will feature poster displays representing UCF's diverse colleges and disciplines.

The Research Forum is an opportunity for students to showcase their research and creative projects and to receive valuable feedback from faculty judges. Awards for best poster presentation in each category will be given and all participants will receive recognition.

The College of Graduate Studies and the Graduate Student Association invite all UCF students, community, and employers to attend the Graduate Research Forum. For more information, contact researchweek@ucf.edu.

Graduate Excellence Awards

Each year, the College of Graduate Studies offers graduate students who strive for academic and professional excellence the opportunity to be recognized for their work. These awards include the following:

Award for Excellence by a Graduate Teaching Assistant

For students who provide teaching support and assistance under the direction of a lead teacher. This award focuses on the extent and quality of the assistance provided by the student to the lead instructor and the students in the class. (Not intended for students who are instructor of record)

Award for Excellence in Graduate Student Teaching

For students who serve as instructors of record and have independent classroom responsibilities. The focus of this award is on the quality of the student's teaching and the academic contributions of those activities.

Award for the Outstanding Dissertation

To recognize doctoral students for excellence in the dissertation. The focus of this award is on the quality and

contribution of the student's dissertation. Excellence of the dissertation may be demonstrated by evidences such as, but not limited to: publications in refereed journals, awards and recognitions from professional organizations, and praise from faculty members and other colleagues in the field.

For the nomination process and eligibility criteria, see graduate.ucf.edu/awards-and-recognition/.

Other

For more information about the Council of Southern Graduate Schools (CSGS) thesis and dissertation awards, please see their website: csgs.org/ > Awards.

In addition to UCF awards for excellence, professional associations also offer thesis and dissertation awards and many host student paper competitions. Students are encouraged to check with each professional association for possible award opportunities.

Students should take opportunities to present a poster or a topic of research at a conference. To obtain financial support to present at a conference (other than through your program) or to engage in comparable creative activity at a professional meeting, visit the Graduate Travel Fellowship section at graduate.ucf.edu/.

For grant-proposal writing resources: uwc.cah.ucf.edu/.

Professional organizations such as the American Mathematical Society are excellent resources for professional development in the mathematics discipline. The American Mathematical Society website includes resources such as current literature to help students understand [what mathematicians do](#), along with a listing of other fields in which mathematicians work and [data on the mathematics profession](#).

The Department of Mathematics offers a Colloquium Series, seminar series and Steve Goldman lecture series throughout the academic year. Visit the [Mathematics webpage](#) for a listing of coming and past events.

Job Search

UCF's Career Services department offers a wide range of programs and services designed to assist graduate students. These services include evaluation and exploration of career goals, preparation for the job search and job search resources. To learn more, visit their website at career.ucf.edu/.

Professional societies such as the American Mathematical Society and the Mathematical Association of America are excellent resources for job searching in the mathematics discipline. The American Mathematical Society website includes resources such as job sites for math majors, early career profiles and advice for new graduate students and new PhD's. The website also includes specific information for [employment resources for PhD mathematicians](#).

Forms

- [College of Graduate Studies Forms and References](#)
A complete listing of general forms and references for graduate students, with direct links, may be found here.
- [Graduate Petition Form](#)
When unusual situations arise, petitions for exceptions to policy may be requested by the student. Depending on the type of appeal, the student should contact his/her program adviser to begin the petition process.
- [Traveling Scholar Form](#)
If a student would like to take advantage of special resources available on another campus but not available on the home campus; for example, special course offerings, research opportunities, unique laboratories and library collections, this form must be completed and approved.

Useful Links

- [Mathematics PhD](#)
- [College of Sciences](#)
- [College of Graduate Studies](#)
- [Academic Calendar](#)
- [Bookstore](#)
- [Campus Map](#)
- [Counseling Center](#)
- [Financial Assistance](#)
- [Golden Rule Student Handbook](#)
- [Graduate Catalog](#)
- [Graduate Student Association](#)
- [Graduate Student Center](#)
- [Housing and Residence Life](#)
- [Housing, off campus](#)
- [Knights Email](#)
- [Library](#)
- [NID Help](#)
- [Pathways to Success](#)
- [Recreation and Wellness Center](#)
- [Shuttles Parking Services](#)
- [Student Health Services](#)
- [Thesis and Dissertation \(ETD\)](#)
- [UCF Global](#)
- [University Writing Center](#)

Grad Faculty

Asterisk = has previous committee experience, which qualifies the person to serve as vice chair

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