

Mathematical Sciences Ph.D. Program Handbook

Welcome

Welcome to the Department of Mathematical Sciences. We are delighted that you have chosen us for your graduate study.

We are Nevada's oldest doctoral program in Mathematical Sciences. Our program serves a variety of areas of Mathematical Sciences, offering concentrations in Applied Mathematics, Computational Mathematics, Pure Mathematics and Statistics. Students can join our program prior to or after completing a master's degree (post-bachelor's or post-master's track). Past students have all successfully found employment in industry and academia.

This handbook has been prepared to help you successfully navigate the Ph.D. program. Please make sure to read it carefully and familiarize yourself about the program milestones and requirements. We sincerely hope you will have a rewarding graduate study experience and wish you all the best.

Mission Statement(s)

The mission of the Department of Mathematical Sciences is to serve the public through research, teaching, and service. In particular, the Department:

- Fosters a supportive environment while providing comprehensive mathematics and statistics education at both the graduate and undergraduate levels.
- Nurtures research in mathematical sciences, contributing to humankind's understanding and facilitating current and future scientific advances.
- Supports the application of mathematics and statistics, and the improvement of mathematics education, in order to address the needs of the local, national, and international communities.

The Department of Mathematical Sciences is strongly committed to becoming a world-recognized center of excellence in research, teaching and service in the mathematical sciences. Principal goals include placing in the top 100 mathematical sciences graduate programs nationally, including the efficient transition of our matriculating students, and improving student performance & retention in the Department's service courses.

Purpose

The purpose of this handbook is to provide program specific information that is not found in the UNLV Graduate Catalog. Students are responsible for understanding and following the policies and procedures delineated in this document and the UNLV Graduate Catalog, as well as the NSHE Code, UNLV Bylaws, and the UNLV Student Conduct Code. Questions about policies should be directed to the Graduate College: valarie.burke@unlv.edu or GradAssociateDean@unlv.edu.

Department Graduate Faculty

A current listing of the graduate faculty can be found in the UNLV Graduate Catalog. Faculty must hold either associate or full graduate faculty status to be involved in graduate education at UNLV. For up to date information regarding graduate faculty status in your department, visit the [Graduate Faculty status web page](#).

Program Information

[Doctor of Philosophy - Mathematical Sciences](#)

[Subplan 1: Post-Bachelor's - Applied Mathematics Track](#)

[Subplan 2: Post-Bachelor's - Computational Mathematics](#)

[Track Subplan 3: Post-Bachelor's - Pure Mathematics Track](#)

[Subplan 4: Post-Bachelor's - Statistics Track](#)

[Subplan 5: Post-Master's - Applied Mathematics Track](#)

[Subplan 6: Post-Master's - Computational Mathematics](#)

[Track Subplan 7: Post-Master's - Pure Mathematics Track](#)

[Subplan 8: Post-Master's - Statistics Track](#)

[Link to program information in the Graduate Catalog:](#)

Contact Information

Department Website

<http://www.unlv.edu/math>

Department Chair

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Graduate Coordinator

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Program Requirements

Program requirements regarding [admission, coursework and culminating experience are found in the graduate catalog](#).

Advisory Committee Guidelines

Every student joining the doctoral program will be assigned an initial advisor, who will provide initial guidance, in terms of course selection and meeting program milestones. As the student progresses through the program, he/she is expected to find a departmental faculty member who is willing to direct his/her dissertation research. This is typically completed by the time the student passes the Qualifying Exam (described later).

With the guidance of this faculty member, the student will form an Advisory Committee, of which this faculty member will be its chair (or co-chair). The Advisory Committee will consist of at least two other faculty members from the department and at least one faculty member from outside the department (who will serve as the Graduate College Representative). Note that the committee chair and the Graduate College Representative must have full graduate faculty status. The other members of the advisory committee can have associate or full graduate faculty status.

Once a student has identified the faculty members who will serve on his/her advisory committee and received their approvals, he/she must have them complete the [Appointment of Advisory Committee Approval Form](#) and bring it to the Graduate Coordinator. The Advisory Committee must be formed no later than two semesters after passing the Qualifying Exam.

Degree Program Benchmarks

1. **Qualifying Examination:** The purpose of the Qualifying Examination is to measure the student's knowledge of basic graduate course work in selected areas and to make sure that the student is prepared to proceed to more advanced studies.
 - a. The Qualifying Examinations are held once a year, one week prior to the start of fall semester classes.
 - b. The Examination consists of two parts, corresponding to Required Courses Part 1 and Part 2 of an individual student's concentration.
 - c. A doctoral student normally takes the Qualifying Examination within two years after entering the program. A student can take the two parts in different years.
 - d. Doctoral students must pass all parts of the Qualifying Examination within three years after entering the program.
 - e. A student who fails the Qualifying Examination on the first attempt will be placed on probation and must complete a second examination within the next twelve months.
 - i. A post-bachelor's track student who fails the second examination may be allowed to complete an M.S. degree with the consent of the Graduate Studies Committee. Such a student will not be permitted to seek readmission to the Doctoral Program in Mathematical Sciences at UNLV.
 - ii. A post-master's track student who fails the Qualifying Examination a second time will be separated from the program.
 - f. A score of 70% or above in the Qualifying Examination is considered a Ph.D. level pass. A post-bachelor's track student who fails at the Ph.D. level but obtains a score of at least 60% would be considered to have passed at the Master's-level.
 - g. Students intending to take the Qualifying Examination during a particular year should sign up for them by April 30. Guidelines to help prepare for the Qualifying Examination will be made available upon request.
2. **Advisory Committee:** After passing the Qualifying Examination, a student will proceed with forming his/her Doctoral Advisory Committee. As mentioned earlier, this involves first identifying a departmental faculty member who is willing to direct the student's dissertation research. This faculty member will serve as the chair of the student's Advisory Committee. With the guidance of this faculty member, the student will select the remaining members of the Advisory Committee, which will have at least two other faculty members from the department and at least one faculty member from outside the department (who will serve as the Graduate College Representative). Note that the committee chair and the Graduate College Representative must have full graduate faculty status. The other members of the advisory

committee can have associate or full graduate faculty status.

Once a student has identified the faculty members who will serve on his/her advisory committee and received their approvals, he/she must have them complete the **Appointment of Advisory Committee Approval Form** and bring it to the Graduate Coordinator. The Advisory Committee must be formed no later than two semesters after passing the Qualifying Exam.

3. **Degree Audit:** The student will engage in the approved coursework specified by the Doctoral Advisory Committee. It is strongly suggested that students who have completed 12-16 credits toward their graduate program, submit a **Degree Audit Companion Form** along with a printout of Degree Audit Report (from MyUNLV) to the Graduate Coordinator. This procedure should be completed no later than the time of prospectus approval (see item 4 below).
4. **Comprehensive Examination and Prospectus:** The purpose of the Comprehensive Examination is to measure a doctoral student's knowledge of the advanced level graduate work that will be required as the student begins to do original research in his/her area of concentration.
 - a. After passing the Qualifying Examination and forming an Advisory Committee, a student will engage in the approved coursework specified by the Doctoral Advisory Committee and submit to the latter a dissertation proposal.
 - b. Usually within a year after forming the Advisory Committee, a student will complete the Comprehensive Examination, designed and administered by the Doctoral Advisory Committee, based on the student's coursework with focus on his/her ability to perform research on the dissertation proposal. The exam may be written or oral. It is often a talk by the student on the proposed research. Grading is Pass/Fail and is determined by the Advisory Committee.
 - c. A student who fails the Comprehensive Examination on the first attempt will be placed on probation and must complete a second examination within the next semester. A student who fails the Comprehensive Examination a second time will be separated from the Doctoral Program.

A student who passes the Comprehensive Exam should submit the **Prospectus Approval Form** along with a copy of the dissertation proposal (2-3 pages) to the Graduate Coordinator.

5. **Advancement to Candidacy:** A student who has successfully passed the Comprehensive Examination and has completed all coursework will be admitted to candidacy for the Ph.D. degree and thereby be allowed to proceed with the approved dissertation proposal. Please submit an **Advancement to Doctoral Candidacy Form** to the Graduate Coordinator. Note that only students who have advanced to candidacy will be allowed to register for dissertation credits.
6. **Dissertation:** A doctoral candidate is expected to complete a dissertation embodying the results of significant original research, which is performed independently by the student, and is acceptable to the student's advisory committee. A student must complete a

minimum of 18 credits of dissertation. Note that a student must have advanced to candidacy in order to be eligible to register for dissertation credits. 4

7. **Dissertation Defense:** The doctoral dissertation must be orally defended before the Advisory Committee. The defense will be open to all members of the public and must be publicized through the Graduate College two weeks prior to the defense. On successful completion of the dissertation defense, please complete the [Culminating Experience Results Form](#) and submit to the Graduate Coordinator.

Program Timeline

Students typically take about five to six years to complete their degree. Below is the suggested timeline for the program milestones of a student completing in five years. Individual experiences may vary.

Event	Timing (semester #)
Take required courses, look for and identify a potential dissertation advisor	1, 2, 3, 4
Pass qualifying exam	5
Form advisory committee, continue with coursework	5
Do a degree audit, file prospectus and pass comprehensive exam, finish any remaining coursework, advance to candidacy	6, 7
Take dissertation credits	8, 9, 10
Defend dissertation	10

Note that per Graduate College policy, a student beginning a doctoral degree program and holding a master's degree in an appropriate field of study must complete all doctoral degree requirements within 6 years. A student beginning a doctoral degree program without a master's degree must complete all requirements for the degree within 8 years.

Graduate Assistantship

The Department of Mathematical Sciences offers a limited number of Graduate Assistantships to support its students. Due to the demand far exceeding supply, awards are made competitively based on academic record, timeliness of academic progress and past teaching evaluations (if available). Priority is given to doctoral students who are making satisfactory academic progress and are within the normal timelines of degree completion.

Per Graduate College policy, post-master's doctoral students will receive GA support for 4 years (+1 year extension pending degree completion). Post-bachelor's doctoral students will receive support for 5 years (+1 year extension pending degree completion). Exceptions may be granted on a case-by-case basis depending on the availability of funds and the individual student's circumstances.

Doctoral students wishing to be considered for GA support for an academic year should apply on Grad Rebel Gateway by February 1 of the prior academic year. Note that **GA renewals are not automatic. A new application must be submitted every year.** The Department of Mathematical Sciences reserves the right to not renew or to cancel a GAship due to unsatisfactory academic progress or unsatisfactory performance of the assigned GA duties.

Any student receiving GA support from the Department of Mathematical Sciences must stay registered for at least 6 graduate credits (MAT or STA courses) during the semester for which support is received. Failure to do so will result in automatic termination of GA award.

Professional Code of Ethics/Discipline Guidelines

UNLV Graduate College policy regarding academic integrity can be found in the graduate catalog.

[American Mathematical Society Ethical Guidelines.](#)

[American Statistical Association Ethical Guidelines.](#)

[Society of Industrial and Applied Mathematics Authorial Integrity in Scientific Publication](#)

Annual Review Procedures

Students are required to make adequate yearly progress towards degree completion. Each winter break and early spring term, graduate students are **required** to complete the Graduate Student Individual Development Plan (IDP) form. The review covers the prior calendar year and assesses student progress, and it establishes reasonable goals for the year ahead. Reported student data is shared with students' graduate coordinators and advisors to foster opportunities for discussion about students' strengths and weaknesses, accomplishments and next requirements, and mentoring plans so that students know what they need to do in order to progress successfully through their programs in a timely manner. Students who are graduating are also required to complete the form in order to record their achievements since the data is also used to track metrics related to the annual productivity of all students. Satisfactory progress includes passing the recommended courses with a grade of B or better, maintaining a program GPA of at least 3.0, and timely progression through the program milestones (qualifying examination, advisory committee, comprehensive examination, dissertation and defense). Note that courses with a grade below C cannot be used towards the degree.

Probation and Separation Policies

Students admitted to the doctoral program are expected to make satisfactory progress. Satisfactory progress involves, at a minimum, maintaining a program GPA of at least 3.0, no course grade of C or below, passing the Qualifying Exam on the first attempt, passing the Comprehensive Exam on the first attempt, and timely progression through the program milestones.

Any student failing to make satisfactory progress will be put on probation. A student on probation must meet the conditions set forth in the probation document by the end of the probationary period to remediate the probationary status. Failure to do so will result in separation from the doctoral program.

Discipline Resources

Professional Organizations:

[American Mathematical Society \(AMS\)](#)

[Mathematical Association of America \(MAA\)](#)

[American Statistical Association \(ASA\)](#)

[Institute of Mathematical Statistics \(IMS\)](#)

[Society of Industrial and Applied Mathematics \(SIAM\)](#)

University Resources

[Leadership and Professional Development Academy](#)

The goal of the Professional Development Academy is to serve as a virtual resource providing support and many professional opportunities to UNLV graduate students. The Academy offers information about events and services such as graduate certificate programs, workshops, training sessions and career services. You can follow Academy activities via social media or look for regular updates on the website.

[Academic Success Center](#)

The goal of the Academic Success Center is to help students do well academically and complete their studies on time. They offer or will refer you to such programs and resources as tutoring, advising, skills testing, career exploration and more. They guide students every step of the way to the many established resources created to ensure they complete their educational goals. Learn more about the programs and services the center currently offers.

[Alumni Association](#)

With an alumni base 120,000 strong, the UNLV Alumni Association offers a variety of services and opportunities in support of alumni and their families. UNLV alumni are encouraged to support the values of higher learning through advocacy, involvement, and giving.

[Commencement Office](#)

Located in the UNLV Office of the Registrar, the commencement office is the last step in the graduation process. Please check with the commencement office for information on the commencement ceremony and your diploma; for all other information about graduate student degree completion and graduation, including thesis/dissertation requirements and doctoral hooding, please contact the Graduate College. It is the students' responsibility to ensure they apply for [graduation on time](#) and submit all required forms to the Graduate College. Questions regarding thesis/dissertation should be directed to the Graduate College [Student Services Team](#) and questions regarding required forms should be directed to the Graduate College [RPC Team](#)

[Office of Diversity Initiatives](#)

The vision of the Office of Diversity Initiatives is to advocate, promote, and support the advancement of equity, inclusiveness, and empowerment of a continuously changing collegiate and global community. The mission of the Office of Diversity Initiatives is to provide leadership and support for UNLV's diversity mission: *to nurture equity, diversity, and inclusiveness that promotes respect, support, and empowerment*. This Office also handles UNLV Title IX questions, inquiries, and reporting.

[Disability Resource Center \(DRC\)](#)

The DRC is committed to supporting students with disabilities at UNLV through the appropriate use of advocacy, accommodations, and supportive services to ensure access to campus courses, services, and activities. The DRC is the university-designated office that determines and facilitates reasonable accommodations in compliance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973. Graduate students with disabilities must disclose to the DRC in order to receive appropriate accommodations.

Office of International Student and Scholars

International Students and Scholars (ISS) ensures compliance with both SEVIS (Student and Exchange Visitor Information System) and federal law, so that the university can continue to be authorized by the U.S. federal government to enroll international students; host and hire international scholars; assist and advise employment eligibility and authorization relating to international students and scholars, and visa, travel, and immigration issues; provide critical and specialized services to the international students and scholars of the UNLV community; and facilitate their transition to the campus and the U.S.

Jean Nidetch Women's Center

The Jean Nidetch Women's Center is committed to creating a supportive and inclusive environment for all genders through programming, services, and advocacy for the UNLV community. The Women's Center has informational resources, brochures, and flyers for a variety of on and off campus organizations to help empower and protect yourself, and learn about your options. They also provide free tampons, pads, and condoms.

The Intersection

The Intersection is a one-stop resource for UNLV's highly diverse student body — a comprehensive multicultural center grounded in the academic life of our students. As an intersecting campus resource, the Intersection helps ensure students, particularly first-generation and students of color, successfully navigate their academic careers. Here, all members of campus can discuss their differences, discover their similarities, and build a shared sense of belonging.

UNLV Libraries

UNLV Libraries has always been more than books; they are about encouraging students and creating quality programs that elevate growth and learning. Please visit their website for important information about the services they offer to graduate students.

Graduate & Professional Student Association (GPSA)

The Graduate & Professional Student Association serves all currently enrolled University of Nevada, Las Vegas graduate and professional students. The GPSA maintains the Graduate Student Commons located in the Lied Library room 2141 and Gateway Building PDAC Room. The facility a working office equipped with a copier, fax, flatbed scanners, color laser printer, office supplies, and computers with printers and a small kitchen area. The GPSA is the graduate student governance body at UNLV; the GPSA Council consists of one graduate student representative from each graduate department, and they meet monthly. The GPSA also provides volunteer opportunities, sponsors social events, and supports graduate student research through the graduate research and travel grants program.

Office of Student Conduct

The Office of Student Conduct is a student-centered, service-oriented office located within the Division of Student Affairs. The Office of Student Conduct collaborates with the UNLV community to provide an inclusive system through enforcement of the *UNLV Student Code of Conduct* by:

- Promoting awareness of student rights and responsibilities;
- Establishing accountability for student choices;
- Creating opportunities for involvement in the process; and
- Striving to uphold the values and ethics that advance the common good.

[Military and Veteran Services Center](#)

The Military and Veteran Service Center is staffed with veterans and GI Bill-experienced staff to assist more than 1,000 veterans, dependents, active duty service members, National Guard members, and reservists. Their mission is to develop a welcoming, veteran-friendly campus environment that fosters academic and personal success.

[The Financial Aid & Scholarships Office](#)

The Financial Aid & Scholarships Office supports higher-education access and persistence by providing financial aid to eligible students. The office partners with student organizations, the UNLV Foundation, the Graduate College, and other external constituents to provide financial aid learning opportunities and scholarship support for graduate students.

[Writing Center](#)

This is a free service to UNLV students to help you with any writing project, from papers to creative writing, to resumes, and we can work with you at any stage of the writing process. The center can help you brainstorm, make an outline, work on your drafts, or just be a soundboard for your ideas. The center staff can assist you in person, or via the Online Writing Lab (OWL) page.

University Policies and Procedures

Graduate students are responsible for knowing and acting in accordance with UNLV Policies and Procedures. To view the most commonly referenced campus policies and procedures, you can refer to the [Graduate Student Handbook](#), and following websites:

- [Academic Integrity](#)
- [Activation for Military Service](#)
- [Change of Address](#)
- [FERPA/Privacy Rights](#)
- [Health Insurance - Mandatory](#)
- [Jean Clery Campus Safety and Security Report](#)
- [Proof of Immunization](#)
- [Policies and Procedures on the Protection of Research Subjects](#)
- [Rebelmail Policy](#)
- [Student Conduct Code](#)
- [Student Computer Use Policy](#)
- [Title IX](#)

UNLV does not discriminate in its employment practices or in its educational programs or activities, including admissions, on the basis of sex/gender pursuant to Title IX, or on the basis of any other legally protected category as is set forth in NSHE Handbook Title 4, Chapter 8, Section

13. Reports of discriminatory misconduct, questions regarding Title IX, and/or concerns about noncompliance with Title IX or any other anti-discrimination laws or policies should be directed to UNLV's Title IX Coordinator Michelle Sposito.

The Title IX Coordinator can be reached through the online reporting form at [Title IX Reporting Form](#), by email at titleixcoordinator@unlv.edu, by phone at (702) 895-4055, by mail at 4505 S. Maryland Parkway, Box 451062, Las Vegas, NV, 89154-1062, or in person at Frank and Estella Beam Hall (BEH), Room 555.

To ensure compliance with Graduate College policies and procedures, please review the relevant sections of the [Graduate Student Handbook](#):

- [Academic Calendar](#)
- [Academic Policies](#)
- [Admission and Registration Information](#)
- [Progression and Completion Policies \(listed alphabetically\)](#)

In addition, the [Graduate College website](#) contains additional information regarding policies and procedures.

Nothing in this handbook supersedes any NSHE, UNLV, or Graduate College policy.

Handbook Information

Revisions to this handbook are approved by the department graduate committee.

Last revised	Revised by	Changes summary
2/10/2015	Douglas Burke	Initial department information
7/24/2017	Kaushik Ghosh	Welcome statement, chair and grad coordinator information, degree program benchmarks, program timeline, GA information, probation and separation policies.
4/24/2018	Kaushik Ghosh	Updated with new graduate coordinator information