University of Nevada, Reno

Department of Mathematics and Statistics

Statistics and Data Science Ph.D. program

Handbook of Policies and Procedures

for Current Graduate Students

2020-2021

Program Description

The Ph.D. program in Statistics and Data Science is designed to provide training in fundamental methods and concepts of modern Statistics focused on extracting knowledge from data. The program emphasizes interdisciplinary collaborative research. The program builds research and computational skills that will position students to be competitive in pursuing careers in academic, government, and business environments.

Student Learning Outcomes

Develop the advanced theoretical and computational skills necessary to solve applied problems involving data.

Attain a deep understanding of the theory of statistics and data science sufficient to critically evaluate research done by others.

Demonstrate the ability to do independent research and to communicate the results of this research, both orally and in writing.

Acquire breadth of knowledge and the skills necessary to successfully collaborate or consult in a professional setting.

Questions about the Program

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Application Process

Application Requirements

Completion of a bachelor's degree in statistical or mathematical sciences or a related area is required prior to enrollment in the doctoral program.

Required Documents

Undergraduate/Graduate Transcripts from previous institutions
GRE General Test
TOEFL/IELTS (only required for international students)
Three (3) letters of recommendation
Statement of Purpose
Resume/CV
Do you request financial support? A graduate support in a form of TA-ship (20h/week) is offered on a competitive basis to graduate students in good academic standing.

Recommended Documents

GRE Mathematics Subject Test

Application Target Dates

Feb 1 (priority deadline- best to apply) & March 1 for Fall admission, Oct 1 (priority deadline-best to apply) & Nov 1 for Spring admission. We accept applications throughout the year, however the admission and funding decisions for the main cohorts of students are made after the given target dates. We start decision process on funding after the priority deadlines.

Web Links

You should apply at UNR Graduate School web site:
https://www.unr.edu/grad/admissions/how-to-apply
All applicants must meet the University requirements:
http://www.unr.edu/grad/admissions

Degree Requirements

Course Work

Candidates for the Doctor of Philosophy degree must satisfy all general requirements of the Graduate School. The following requirements must be met prior to degree granting:

Minimum of 72 graduate credits
Minimum of 48 graduate credits of course work
Minimum of 30 credits of 700-level graduate credits (not counting dissertation)
Minimum of 24 dissertation credits
Maximum of 24 graduate credits (including maximum of 18 700-level graduate credits) from a completed master's degree program or previous post-baccalaureate work may be applied to the program, per Graduate Director approval
All requirements, excluding prerequisite graduate courses, must be completed within 8 years immediately preceding the granting of the degree

Required Courses

The following courses or their equivalents must be satisfactorily completed for the doctoral degree in Statistics and Data Science:

MATH 713 Abstract and Real Analysis (3 units)
STAT 705 Probability Theory (3 units)
STAT 706 Probability and Measure (3 units)
STAT 725 Mathematical Statistics I (3 units)

STAT 726 Mathematical Statistics II (3 units)
STAT 735 Linear Models I (3 units)
STAT 736 Linear Models II (3 units) (pending)
STAT 745 Statistical Computing (3 units)
STAT 753 Stochastic Models and Simulations (3 units)
STAT 755 Multivariate Data Analysis (3 units)
STAT 756 Survival Analysis (3 units)
STAT 758 Time Series Analysis (3 units)
STAT 760 Statistical Learning (3 units)
STAT 799 Dissertation (minimum of 24 units)
Approved 600/700-level electives, based on research interests (9 units)

Electives

Electives will be approved by the student's Graduate Advisory Committee. Appropriate courses outside the Department of Mathematics and Statistics may be approved, depending on the student's research interests. Example electives in the Department of Mathematics and Statistics:

STAT 653 Categorical Data Analysis
STAT 775 Advanced Topics in Statistics
MATH 630 Linear Algebra II
MATH 640 Topology
MATH 659 Topics in Probability
MATH 666 Numerical Methods I
MATH 667 Numerical Methods II
MATH 714 Real Analysis II
MATH 794 Research in Mathematical Sciences

Example electives in other departments:

ATMS 745 Atmospheric Turbulence
ATMS 746 Atmospheric Modeling
BCH 706 Functional Genomics
BCH 707 Protein Structure and Function
BCH 709 Bioinformatics
BIOL 604 Population Genetics
CS 615 Parallel Computing
CS 657 Database Management Systems
CS 677 Analysis of Algorithms
EE 782 Random Signal Analysis and Estimation Theory
PHY 732 Statistical Mechanics

The department is in the process of developing other classes in Mathematics and Statistics that can be used as electives.

Qualifying Exams

After the first year, and by the end of the third year, every student must pass one written qualifying exam in the theory of Mathematical Statistics (STAT 725/726), and a written qualifying exam in one of the following areas: Qualifying Exam in Probability (STAT 705/706) or Qualifying Exam in Applied Statistics (STAT 735/736). A student will be allowed a maximum of 2 attempts at ea

Timeline for Degree Completion

Recommended timeline

Take 9 graduate credits per semester

Between second and sixth semesters: Complete written qualifying exams in the theory of Mathematical Statistics and one of the following: Probability or Applied Statistics.

Second year (third and fourth semesters): Meet with faculty to select potential adviser and make a preliminary selection of the dissertation topic.

Beginning of the fourth semester: Secure Graduate Advisory Committee.

Fifth semester: Complete Ph.D. Program of Study form, confirm with adviser, and secure committee signatures. Start working on the dissertation with adviser.

By the end of the sixth semester: Complete oral exam in the area of specialty.

Seventh semester: Have a dissertation draft (first chapter is ready, there is a clear plan for the other chapters).

Eighth semester: Complete dissertation draft, discuss with committee, finalize dissertation according to committee recommendations, present the dissertation.

Forms with deadlines required to be submitted to the Graduate School

fourth semester. The Graduate School requires each student to form the committee by the end of their fourth semester.

The committee must consist of a minimum of five graduate faculty members; the advisor (who will chair the committee), at least two faculty members from the student's major department/program, at least one faculty member from another department in a field related to the student's major, and at least one Graduate School representative. Formal approval of committee is made by the Graduate Dean.

Dissertation Requirements

Each student must prepare a Ph.D. Dissertation guided by his/her advisor. The advisor must be selected from the graduate faculty members of the Department of Mathematics and Statistics. The details of dissertation preparation and presentation should be discussed with adviser. Graduate School forms and resources related to and dissertations:

Thesis and Dissertation Filing Guidelines

good academic standing. The student must have an overall GPA of at least 3.0 and must be continuously enrolled in at least 6 graduate level credits (600-700) throughout the duration of the assistantship.

State-funded assistantships (GTA/GRA) may be held for a maximum of three (3) years for master's degree students and five (5) years for doctoral degree students.

Useful Web Pages

General information:
http://www.unr.edu/grad/funding/graduate-assistantships
Graduate Assistantship handbook:
https://www.unr.edu/grad/admissions/funding/assistantships/graduate-assistant-handbook

Health Insurance

All domestic degree seeking graduate students, who are enrolled in six or more credits (regardless of the course level) in a semester, will be automatically enrolled and billed for the University sponsored health insurance for each term they are eligible (fall & spring/summer). If a student has other comparable coverage and would like to waive out of the student health insurance, it is the student's responsibility to complete the **University online waiver form** prior to the deadline. If approved, a health insurance waiver is good for the current academic year only. A new waiver must be submitted each academic year. All international graduate students must have student health insurance, and the cost is added to the student account. An international graduate student can ask about insurance at the Office of International Students and Scholars. See http://www.unr.edu/grad/health-insurance

Leave of Absence

Continuous Enrollment

To maintain good standing all graduate students are required to enroll in a minimum of three (3) graduate credits each fall and spring semester until they graduate. International students may be required to enroll in nine graduate credits each fall and spring semester depending on the requirements of their visa. All students holding assistantships (whether teaching or research assistantships) are required to enroll in a minimum of six (6) graduate credits each semester

should not have any incomplete grades which could be changed to F and have a detrimental impact on their cumulative GPA. Requests for leave of absences must be received by the Graduate School no later than the last day of enrollment for the semester the leave is to begin.

Reinstatement

When a student has been absent for one semester or more without an approved leave of absence, he or she may request reinstatement via the Reinstatement Form on the Graduate School website https://www.unr.edu/grad/student-resources/forms

This form allows the program the option to recommend the student be re-admitted to their graduate program based on their previous admission or require the student to re-apply for admission. The latter requires students to submit a new application and pay the application fee. The Notice of Reinstatement to Graduate Standing must be received by the Graduate School by the last day of enrollment for the semester when the reinstatement is to begin.