Graduate Handbook for Statistics

University of New Mexico
2016–2017

Updated September 13, 2016

Contents

Overview

This handbook describes the rules of the Department of Mathematics and Statistics governing graduate study and the awarding of degrees in Statistics. Students should consult the University of New Mexico (UNM) Catalog, and Statistics faculty members about questions not covered in this handbook. The UNM Catalog is always the governing document in case of any conflict between statements made in this Handbook and the UNM Catalog. The relevant catalog pages for all graduate students in the Department of Mathematics and Statistics are:

http://catalog.unm.edu/catalogs/2016-2017/graduate-program.html
http://catalog.unm.edu/catalogs/2016-2017/colleges/arts-sciences/math-stat/index.html
http://catalog.unm.edu/catalogs/2016-2017/colleges/arts-sciences/math-stat/graduate-program.html

(For older or newer catalogs, change the years in the obvious way.)

1 General Remarks

The Department offers the degrees of Master of Science and Doctor of Philosophy in Statistics. The departmental Graduate Committee and the Statistics Group Faculty supervise these degrees.

The University of New Mexico requirements for graduate study and advanced degrees are included in the UNM Catalog. Students are strongly encouraged to read the webpages for the Catalog mentioned above and become familiar with them. Please note that the UNM Catalog states: **"Ignorance of a rule will not be accepted as a basis for waiving that rule"**. Certain regulations, such as language requirements, credits, and examination procedures may be altered, either within the Department or on a University-wide basis during a student's period of study. In that event a student making normal progress may proceed in accordance with either the new regulations or may choose to remain under the regulations in effect at the time of admission to the graduate program. In the case of a student who has satisfactorily completed a required course before beginning graduate studies, a suitable course may be substituted with appropriate approval.

The Master Of Science (M.S.) Program

The goal of the M.S. program is for the student to develop proficiency in statistics through course work, participating in research seminars, attending colloquia, and possibly by writing a thesis.

The Doctor Of Philosophy (Ph.D.) Program

The goal of the Ph.D. program is for the student to write a dissertation that makes a contribution to statistics research. To do this, the student must become familiar with the breadth of current research topics. This is done by taking advanced courses, participating in research seminars, attending colloquia, and talking to the faculty. Students should investigate the faculty's research interests and ask faculty members for reading material on topics of interest.

The Ph.D. program in statistics is quite flexible. The degree can vary from one that builds the skills necessary to modify existing methodologies and develop new methods for applied problems, to one that builds a deep knowledge of the mathematics behind current research in statistics. The background and courses necessary for each student's program will vary. As early as possible, and no later than the second year of Ph.D. studies, the student, with consent of the Graduate Committee, must select an advisor and a Committee on Studies to ensure that the student has adequate preparation for conducting dissertation research in her/his area of choice. All students are required to have a firm grasp of the mathematical

properties of existing statistical procedures. This is achieved through taking a sequence of core courses. The Committee on Studies will require additional work in statistics and may require supporting work in mathematics or an area of application. This work is tailored to the nature of the dissertation and will focus the student toward an area such as Bayesian analysis, biological applications, correlated data modeling, time series, spatial statistics, survey sampling, linear models, nonparametric statistics, or other choices. (A major change in the intended dissertation area may involve a major change in the requirements imposed by the Committee on Studies.)

1.1 Academic Requirements For Graduation

1.1.1 M.S. Plan I (Thesis)

Candidates complete their graduate work by fulfilling course work requirements defending the thesis and submitting an approved thesis to the Department and OGS. Admittance to this plan requires the student finding a willing thesis advisor who is acceptable to the Statistics faculty.

1.1.2 M.S. Plan II (Non-Thesis)

Candidates complete their graduation work by fulfilling course work requirements and successfully passing the written Master's examination. (This is the plan that most students should follow.)

1.1.3 Doctorate

Candidates complete their graduate work by fulfilling course work requirements, successfully passing the comprehensive examination, and submitting an approved dissertation and report of dissertation defense to the Department and OGS.

1.2 Admission Requirements

Master's

The primary requirement for admission is a bachelor's degree in statistics, mathematics, engineering, or any field with a strong quantitative component. In particular, a calculus sequence (Math 162 and 163) that includes the calculus of several variables (Math 264) and courses in statistics (STAT 345) and linear algebra (Math 314 or 321) are required. On occasion, students are admitted with deficiencies in their backgrounds. Deficiencies must be

reviewed with the faculty advisor and corrected as soon as possible. **These deficiencies do not override the Department or University Policies on time to degree or financial support** (see UNM Catalog for details: `http://grad.unm.edu/current-students/documents/masters-handbook.pdf`).

Doctoral

The prerequisite for entrance into the Ph.D. program is knowledge of linear algebra and advanced calculus. Formal admittance to the program is achieved by passing the Ph.D. qualifying examination, which is described in the Master's program Examination Requirements. Students who transfer to UNM with a Master's degree from another institution are required to take the Ph.D. qualifying examination as soon as practical, **and in no case later than one year after admission**. If such a student has passed a qualifying exam in Statistics at another institution, the student may petition the Graduate Committee for an exemption from the qualifying exam requirement. The Committee will review the petition and decide if the exemption is granted or not.

1.3 Advising

Each student in the Department is required to report to the Department Coordinator in Program Advisement who will assign a faculty advisor. The faculty advisor must approve the student's program of studies each semester. Any student who fails to obtain the faculty advisor's approval of their program each semester may be subject to dismissal from the program. Advisors may be changed by contacting the Department Coordinator in Program Advisement (Academic Advisor).

1.4 Program General Requirements

The Master of Science degree is awarded in two plans as described below. Plan I is the thesis option; Plan II is the non-thesis option. While a student may choose a minor field of study in consultation with an advisor, there is no formal minor requirement for the Master's degree in Statistics. Additionally, there is no requirement for a foreign language.

1.4.1 M.S. Plan I (Thesis) Requirements

1. A minimum of 26 hours of course work at the 400 or 500 level in Statistics and related fields. At least 18 of these hours must be within the Department, and of these at least 12 hours must be at the 500 level.

2. The Department will accept up to 12 hours of non-degree credit, but the remaining course requirements must be completed after admission to the graduate program.
3. A maximum of six (6) hours in problems or individual study courses.
4. Not more than six (6) hours of thesis credit.
5. The M.S. Examination will be a defense of the thesis.
6. The student is responsible for finding a person willing to act as thesis advisor who is acceptable to the Statistics faculty.

1.4.2 M.S. Plan II (Non-Thesis) Requirements

1. A minimum of 32 hours of course work at the 400 or 500 level in Statistics and related fields. At least 24 of these hours must be within the Department, and of these at least 12 hours must be at the 500 level.
2. The Department will accept up to 12 hours of non-degree credit, but the remaining course requirements must be completed after admission to the graduate program.
3. A maximum of 12 hours in problems or individual study courses.
4. Satisfactory performance on the M.S. Examination. Please see Section 1.7 for details.

1.4.3 Ph.D. General Requirements

The first phase of the doctoral program requires a minimum of 18 semester hours of work in Statistics beyond the Master's degree. Not more than 6 of these hours may be taken in reading or special topics courses. When these requirements are satisfied, the student takes the comprehensive examination, and upon passing the comprehensive examination advances to candidacy. After advancing to candidacy, the student is required to complete at least 18 hours of dissertation coursework.

1.5 Committee On Studies

Master's

Only those who select the Thesis option (Plan I) for the MA are required to form a Committee on Studies.

Doctorate

Each doctoral student is required to have a Committee on Studies, see Section 1.6. The committee should be chosen upon admission to the Ph.D. program and should consist of three to five members who consent to serve; at least three must be from the Statistics

faculty tenured or tenure-track faculty. For details, see `https://grad.unm.edu/resources/gs-forms/committee-service.html`

The chair and/or members of the Ph.D. Committee on Studies may be changed whenever the student desires. However, the student will need the consent of faculty being added to the committee and must notify both former and new members of the Committee and the Department Academic Advisor of the changes.

Upon passing the Ph.D. qualifying exam, each student must arrange for a Committee on Studies to be appointed. The chairperson of the Committee on Studies serves as the student's academic advisor. The responsibilities and functions of the Committee on Studies are fully discussed in the UNM Catalog. Specifically, the Committee:

1. Defines the areas in which the student must show competency.
2. Recommends transfer of credit, where appropriate.
3. Certifies the residence requirements.
4. Certifies the computing language requirement.
5. Participates in the administration of the comprehensive exams and dissertation defense.
6. The membership of the Committee on Studies usually serves as the core of the dissertation examination committee.

1.6 Advancement To Candidacy

Master's

After 15-18 hours of resident graduate credit, students should secure a form for Program of Studies from the Department Academic Advisor. In consultation with the student's faculty advisor and the Academic Advisor, the candidate lists completed and projected course work and elects either Plan I (thesis) or Plan II (non-thesis). The application is then returned to the Academic Advisor for signatures by the faculty advisor and by the Chair of the Graduate Committee before being sent to OGS for the approval by the Dean of Graduate Studies. Anyone electing Plan I must have previously reached agreement with a faculty member to direct their MS thesis.

Doctorate

After 18-21 hours of doctoral course work, students should secure a form for Application for Candidacy from the Department Academic Advisor. At this time, the student also formally declares a Committee on Studies. In consultation with his/her committee chair on studies, the candidate lists completed and projected course work. The application must be returned to the Academic Advisor signed by the entire Committee on Studies and be signed by the Department Chair before being forwarded to OGS for approval.

A student is admitted to formal candidacy for the Ph.D. upon passing the Ph.D. Comprehensive Examination. This examination consists of a written exam covering core material in Advanced Inference I (STAT 556), Advanced Inference II (STAT 557) and Linear Model Theory (STAT 546) and Multivariate Analysis and Advanced Linear Modeling (STAT 547).

1.7 Examination Procedure: M.S./Ph.D. Qualifying Exam

The non-thesis (Plan II) M.S. examinations are given each August, just before the fall semester begins, and again in January, before the start of the spring semester. A student planning to take the examination must inform the Department Academic Advisor and the Graduate Committee before the examination according to the guidelines and deadlines set by the Graduate Committee and/or the Academic Advisor. **The exam consists of two parts, an in-class portion and a take-home portion.** The in-class exam is on Probability and Statistical Inference, which is material covered in STAT 561 and STAT 553. The take-home exam typically requires, but is not limited to, the analysis of one or more sets of data. This portion is based on STAT 540 and STAT 545. Students entering our program with a Bachelor's degree would normally take the M.S. exam after the first year of study. The M.S. exam also serves as the Ph.D. qualifying exam, with a higher standard of performance required to pass at the Ph.D. level. Copies of many previous examinations are available to students on the web at `http://math.unm.edu/graduate/past-qualifying-exams-statistics`.

In the initial attempt at the examination, students **must take both portions of the exam**. If only one portion is taken (for example, the in-class portion but not the take-home), the attempt is considered a Fail. If the initial attempt at the examination is failed, it can be repeated **once** within one academic year. For graduate teaching or research assistants, the examination **should be repeated within one semester**. For a repeated exam, it is at the discretion of the Statistics group and Graduate Committee whether the student is required to re-take both portions. A written report on the outcome of the examination (or re-examination) signed by the Graduate Committee Chair, will be given to the student and a copy will be placed in the student's file held at the Department.

Applications for the Program of Studies for the Master's Degree must be filed with the Dean of Graduate Studies during the semester before the student plans to take the Master's Examination (see UNM Catalog for details: `http://grad.unm.edu/resources/gs-forms/pos-masters.html`).

1.8 Course Requirements

The M.S. Required Courses are required of all students. Unless otherwise noted, all courses are three credit hours.

1.8.1 M.S. Required Courses (12 Credits)

1. STAT 540 Regression Analysis
2. STAT 545 ANOVA and Experimental Design
3. STAT 561 Probability and its Applications
4. STAT 553 Statistical Inference

1.8.2 M.S. Additional Coursework

Students must take a minimum of 14 elective credit hours for Plan I, or 20 elective credit hours for Plan II, subject to the approval of the advisor.

Comments:

1. Master's students planning to pursue a Ph.D. degree should elect plan II and are encouraged to include MATH 510 (Real Analysis) and STAT 546 (Linear Models) in their program.
2. With the consent of the graduate committee, STAT 579 and 649 can be repeated for credit.
3. Students are encouraged to seek quantitative courses from other departments to include in their programs. Students are required to have the approval of their faculty advisor before such classes can be included in the degree program.
4. Students interested in Biostatistics are encouraged to include STAT 574, 576, and 577 in their program.
5. Students interested in industrial applications are encouraged to include STAT 570, 572, and 581 in their program.

1.9 M.S. Thesis and Ph.D. Dissertation

1.9.1 Master's Thesis

Thesis Committee

The student must find a faculty Advisor who is willing to serve as chair of the Thesis Committee. The student needs to obtain the consent of two other faculty members to serve as members of the thesis committee.

At this time, OGS has no forms for constituting a thesis committee, but the Department Academic Advisor should be notified in writing.

Thesis Credit Hours

Students opting for the MS with thesis must complete a minimum of six (6) hours of Thesis (599) credit. While working on the thesis, students must continue to register for a minimum of one hour of 599 each Fall and Spring semester until the thesis is approved by the Dean of OGS. Thesis candidates must be enrolled the semester in which they complete degree requirements, including summer sessions. Enrollment in 599 thesis must be continuous and should not begin until student is working on the thesis.

1.9.2 Doctoral Dissertation

Dissertation Committee

After successfully passing the Doctoral Comprehensive Examination, Doctoral students formally constitute a Dissertation Committee. This committee typically contains members of the Committee on Studies, but need not have all its members. Students initiate the formation of their committee by soliciting a faculty member to serve as director of the dissertation and chair of the committee. The student and director/chair then agree upon the remainder of the committee and complete an "Appointment of Dissertation Committee" form. This form requires the signature of the candidate, the Committee Chair, the Department Chair, and the Dean of OGS.

Dissertation committees must include at least four members approved for graduate instruction by the Dean of Graduate Studies. At least two members must be tenured or tenure-track faculty in the Statistics Group. A third member must be tenured or tenure-track faculty outside the UNM Department of Mathematics and Statistics. This member may be from UNM or another accredited institution. Additional members must be approved experts in Statistics or the area of dissertation application.

Dissertation Credit Hours

The program for the doctorate includes a minimum of 18 hours of dissertation (699) credit. While working on the dissertation, students must continue to register for at least one hour of 699 each Fall and Spring semester until the dissertation is approved by the Dean of OGS. Doctoral candidates must be enrolled the semester in which they complete degree requirements, including summer sessions. Enrollment in 699 dissertation hours may not begin prior to the semester in which Comprehensive Exams are passed.

Dissertation Progress

All matters related to the completion of requirements for the PhD will be dealt with by the dissertation committee. The chair of the dissertation committee, together with other

members, will be responsible for directing and advising the dissertation research, overseeing the writing, evaluating and approving the completed dissertation, and conducting the defense.

Dissertation Final Defense And Submission

A final oral presentation covering the dissertation and its relationship to Statistics is required. The examination committee must have at least four members and be the same as the dissertation committee. Substitutions can be made only with the approval of the dissertation director. Three weeks prior to the defense, students should inform the Department Academic Advisor of their intention to defend, the scheduled date and time, and the committee composition. As with the comprehensive exams, OGS must receive the "Announcement of Dissertation Defense" form listing the exam committee members and signed by the Department Chair at least two weeks prior to the exam. No defense can be held without properly filing this form.

Candidates should also note that the UNM Catalog: Graduate Program directs that a complete copy of the dissertation must be submitted to each member of the committee **at least two weeks** before the final defense.

The Final Defense is public and open to all who wish to attend. Announcements must be sent at least one week in advance via e-mail to the Department mailing lists.

Dissertation Submission

In order to graduate in a given semester, the student and department must provide OGS, by November 15, April 15, or July 15, with the following:

1. Report of the results of the final oral defense
2. Two copies of the dissertation "in perfect form"
3. "Report on Dissertation" from each Committee Member
4. "Survey of Earned Doctorates"

Final Examination for the Doctorate (Dissertation Defense)

Upon completion of the dissertation and at least 18 hours of dissertation course work, a final examination (i.e., defense of the dissertation) is the final formal step before the awarding of the Ph.D. An examination committee must be appointed and, at least 2 weeks before the dissertation defense, OGS form "Announcement of Final Examination for the Doctorate" must be filed. (OGS deadlines are November 1 for Fall, March 1 for Spring, and July 1 for summer). The defense usually occurs in the context of a department colloquium talk. The

student must see that a draft copy of the dissertation is submitted to each member of the examination committee at least 2 weeks before the exam and that a copy is also available in the Department Office for review by members of the Department and other interested persons before the talk. See the UNM Catalog for details.

Please refer to the UNM Graduate Studies website for further information: `http://grad.unm.edu/resources/gs-forms/announcement-examination.html`.

1.10 Graduation

1.10.1 Deadlines

Notification of the Intent to Graduate for both M.S. and Ph.D. students is due to the Coordinator of Program Advisement at least 30 days before the end of the term in the Summer for Fall graduation, 30 days before the end of the Fall semester for Spring Graduation, and 30 days before the end of Spring semester for Summer graduation.

Report of Exam for Thesis or Dissertation must be signed and submitted to OGS by November 15 for Fall, April 15 for Spring, and July 15 for Summer in order to complete graduation requirements. We recommending submitting this form at least a week before the deadline.

Please refer to the UNM OGS website for further information: `http://grad.unm.edu/degree-completion/deadline.html`.

1.10.2 The Ceremony

Degrees are awarded three times a year. Convocation is in December and May. An annual departmental ceremony takes places in May.

1.11 Time Limits

1.11.1 Master's

Currently, OGS dictates that all work toward a Master's degree must be completed within a seven (7) year period beginning from the first graduate course taken in an approved program, including any transfer credit from another institution. For example, if a student's first course used to transfer credit from another institution was taken 2 years before entering UNM, then the student has 5 more years to complete the program, rather than when that transfer credit was accepted at UNM.

1.11.2 Doctorate

A doctoral candidate has five years for completion of all degree requirements from the date s/he passes the comprehensives. This time limit includes the oral defense and submission of final dissertation copies to OGS.

A student may request an extension of this time limit only in writing. The request must be supported by the student's department and approved by the Dean of Graduate Studies. Extensions are not automatic; students must demonstrate progress toward completion of degree requirements.

1.12 Leave Of Absence And Readmission

Should a leave become necessary, students must contact their faculty advisor before beginning the leave of absence from course work. Students must then notify the Department Academic Advisor in writing about the timing and intended length of the leave. Dissertation or Thesis students planning a leave of absence must petition the Office of Graduate Studies, or they will be responsible for paying tuition costs for the semesters not in attendance. These are only granted for catastrophic circumstances and for a total of one year.

A student who is admitted and completes at least one semester of graduate studies in the Department is allowed three subsequent semesters, including summer, without taking classes. An absence of more than three semesters, including summer sessions, will result in a student being automatically dropped from the program. In this case, the application form for readmission must be filed with the Department at least six (6) weeks prior to the beginning of the semester in which the student will be returning.

Students should keep in mind that absences from graduate study are included in the M.S. and Ph.D. time limits. Once enrollment for 599 (Thesis) or 699 (Dissertation) has begun, continuous enrollment must be observed (see "Master's Thesis/Thesis Credit Hours" or "Doctoral Dissertation/Dissertation Credit Hours" above).

For cases where continuous enrollment is not maintained and a leave of absence is not requested to the Department, the rules of the UNM catalog will be applied.

1.13 Required Forms

	Form	Submission Date
·	Program of Studies For The Master's Degree	Semester prior to graduation
·	Announcement of Examination (M.S. Plan I, II, or Ph.D. Qualifying)	2 Weeks prior to Exam
·	Notify Department to submit your Intent to Graduate (Master's Degree)	As early as possible in the semester before you plan to graduate
·	Change of Degree Status (from Masters to Doctoral)	Prior to M.S. Graduation
·	Announcement of Examination Form	2 Weeks prior to Ph.D. Comprehensive Exam
·	Language or Research Skill Requirement	Upon completion of skill (for Dept. Record/Academic File)
·	Application For Candidacy For Doctoral Degree	Upon completion of Skills & Ph.D. Comps
·	Dissertation Committee Form	As soon as committee is formed
·	Announcement of Final Examination For Doctorate	2 Weeks prior to Dissertation Defense
·	Notify Department to submit your Intent to Graduate (Doctoral Degree)	As early as possible in the semester before you plan to graduate
·	Report on Dissertation, Check with OGS for Manuscript Forms/Fees	For Dissertation Committee at Defense, Nov. 15 (Fall), April 15 (Spring), July 15 (Summer)

Note: **All of these forms should be submitted to the Dept. Academic Advisor** who will copy the form for the student academic file and submit the original to the Office of Graduate Studies. Bypassing regular channels could result in confusion and the probability that your degree will not be granted in a timely manner.

1.14 Graduate Student Timeline

When	M.S.	Ph.D.
Begin Year 1	Begin MS Core Stat	
End Year 1	File Program of Studies, Choose either Plan I or II	
Begin Year 2	Select thesis committee, Intent to graduate due the semester, Begin thesis hours if Plan I	
End Year 2	Announce exam for thesis defense or quals two weeks prior to defense, Complete manuscript and Exams or defend thesis, Manuscripts due to OGS by posted deadlines, Graduation each May in Dept	Quals or M.S. Thesis Defense
	Ph.D.	
Begin Year 3	Select Committee on Studies (may become the Diss committee)	PhD courses 18 hours
End Year 3	Do Comprehensives, Select Dissertation Comm, Certification of Language	Fill out form for Advancement to Candidacy
Begin Year 4	Notify Intent to Graduate semester before grad, Submit form for non-UNM committee member approval	Dissertation Hours STAT 699
End Year 5	Finish Dissertation, Apply for jobs, Get ready for real life, Manuscripts due to OGS by posted deadlines, Graduation each May in Dept	Announce 2 weeks prior to defense

Note: Schedule is intended for full-time students, more time may be expected for part-time students.

Prepared by Donna George, Graduate Orientation Fall 2003. Update Spring 2014. Update Fall, 2016.

2 Student Financial Aid

The Department awards a number of Teaching Assistantships and a limited number of Research Assistantships each year. Most teaching assistantships are awarded during the Spring semester to applicants beginning their duties in the Fall. Individuals seeking a teaching assistantship are strongly encouraged to apply early. The Office of Graduate Studies administers Teaching and Research Assistantships. For more information see the Financial Assistance section in the current UNM Catalog.

The Graduate Committee is responsible for awarding teaching assistantships and also for determining which graduate students should be retained as teaching assistants. The following criteria are used in evaluating applicants for teaching assistants. An applicant should have:

1. An undergraduate major in mathematics or statistics or a closely related area of scientific study.
2. A high grade point average in undergraduate courses; particular attention will be given to mathematics and statistics courses.
3. Strong letters of recommendation.
4. A strong potential for academic achievement at the graduate level.
5. A strong potential for teaching beginning courses in mathematics and statistics.
6. A desire to participate in and contribute to a culturally diverse academic environment

Teaching assistants (TAs) must be physically present in the department at least one week before the beginning of the semester for training, orientation, and assignment of courses. Failure to do so may result in the loss of a teaching assistantship award. All TA's are expected to remain physically present in the Department until the last day of their contract, usually the last Friday of the semester and should be available through electronic contact at least a month after their contract ends. In addition, the TAs must be familiar with the document "Guidelines for Teaching Assistants and Part Time Instructors" provided by the department and with the information provided during the department in-service sessions.

2.1 Teaching Assistant Duties

Teaching Assistantship appointments are made with the expectation that the Teaching Assistant will be a successful and responsible teacher. In particular, it is important that the Teaching Assistant (TA) understands the following points:

1. Usually the TA is expected to teach one section of a lower division course. The TA also needs to be available at least 3 hrs/week for office hours. The TA assignment may also include the grading of homework and exams. TAs working in recitation for a faculty may be required to attend some of the faculty's lectures.
2. First time TAs are required to take the Teaching Assistant course offered by the Department of Mathematics and Statistics.

3. The department expects their TAs to be fluent in spoken English. This is particularly important since a high score in the TOEFL test does not guarantee the necessary degree of fluency to teach a class. In particular, the TA should be easily understood by the class and must also be able to understand questions frequently expressed in colloquial English. International students are expected to take the accent reduction evaluation and classes if needed. These classes and scholarships are offered through the Office of Graduate Studies. In addition, the English Department also offers English as a Second Language (ESL) Writing courses through special sections of English 100, English 101, and English 102. Placement for these ESL classes requires a one-hour diagnostic placement essay that can be arranged with the Freshman English Staff Assistant in Humanities Building 213. The ESL sections have restricted access. Failure to use the many avenues available for improvement of spoken English may result in termination of one's Teaching Assistantship if the problem of classroom comprehension continues.
4. The Department will support TAs pursuing a Master's degree for a maximum of 6 semesters and for those pursuing a Ph.D. for a maximum of 10 semesters. The graduate committee takes these semesters of support under consideration from time to time and these limits are subject to change according to the consensus of the committee. One of the criteria on the time limits is the suitable progress of the graduate students and whether or not these limits are conducive or detrimental to timely completion of graduate degrees.

2.2 Renewal of Teaching Assistantship

It is important for a TA to realize that the renewal of a teaching assistant contract is not automatic. The three main criteria for renewing a teaching assistantship in the Department of Mathematics and Statistics are:

1. Steady progress toward an advanced degree in Mathematics or Statistics. Teaching assistants are expected to register for at least nine (9) credit hours each semester. These must be in classes directly related to the academic degree.
2. High quality teaching performance and the fulfillment of associated responsibilities.
3. Master's exam or Ph.D. qualifying exams should be passed after no more than four (4) semesters of support as a TA. This time period may be extended with Graduate Committee approval; however, these exams must be passed after a maximum six (6) semesters. If a TA fails any part of the Master's/Ph.D. qualifying exam, the failed part(s) should be retaken and passed the next semester.

The Department has a limited number of Research Assistantships.

In addition, the University of New Mexico has a variety of financial support programs and fellowships, several of them for underrepresented groups. Information on additional sources of financial support is available from the Financial Aid Office or the Office of Graduate

Studies.

3 Plan Of Study: Courses And Sample Sequences

3.1 Master's

Required Courses:

Fall 1st year	Spring 1st year
STAT 561	STAT 553
STAT 540	STAT 545

Sample Sequence for Terminal Masters Plan I

Fall 1st year	Spring 1st year	Fall 2nd year	Spring 2nd year
STAT 561	STAT 553	STAT 577	Elective
STAT 540	STAT 545	Elective	Thesis Hours
STAT Elective	Elective	Thesis Hours	

Sample Sequence for Terminal Masters Plan II

Fall 1st year	Spring 1st year	Fall 2nd year	Spring 2nd year
STAT 561	STAT 553	STAT 577	Elective
STAT 540	STAT 545	Elective	Elective
STAT Elective	Elective	Elective	

3.2 Doctorate

Required Courses:
The two sequences STAT 546, 547 and STAT 556, 557 are offered in alternate years. Ph.D. students should take whichever sequence is offered immediately after they complete STAT 545 and STAT 553. *A new requirement is that all students need to familiarize themselves with Bayesian Analysis by taking STAT 577.*

Sample Sequence for Ph.D., starting from undergraduate degree and from a Master's degree

Fall 1st year	Spring 1st year	Fall 2nd year	Spring 2nd year
STAT 561	STAT 553	STAT 546	STAT 547
STAT 540	STAT 545	STAT 590	STAT 577
MATH 510	Elective	Elective	Elective

Fall 3rd year	Spring 3rd year	Fall 4th year	Spring 4th year
STAT 556	STAT 557	Dissertation Hours	Dissertation Hours
Elective	Elective		
Elective	Elective		

Note: Students with an M.S. start at Fall 2nd year. MATH 510 should be taken prior to (or – less good – in conjunction with) taking STAT 556.

3.3 Course Offerings In Statistics And Mathematics

STAT 345 Elements of Probability and Mathematical Statistics
STAT 427/527 Advanced Data Analysis I (does not count toward graduate degree in the Department of Mathematics and Statistics)
STAT 428/528 Advanced Data Analysis II
STAT 434/534 Contingency Tables and Dependence Structures
STAT 440/540 Applied Regression Analysis
STAT 445/545 Analysis of Variance and Experimental Design
STAT 453/553 Statistical Inference
STAT 461/561 Probability
STAT 470/570 Industrial Statistics
STAT 472/572 Sampling Theory and Practice
STAT 474/574 Biostatistical Methods: Survival Analysis and Logistic Regression
STAT 476/576 Multivariate Analysis
STAT 477/577 Introduction of Bayesian Modeling
STAT 479 Topics in Statistics
STAT 481/581 Introduction to Time Series Analysis
STAT 495 Individual Study
STAT 520 Topics in Interdisciplinary Biological and Biomedical Sciences
STAT 546 Theory of Linear Models
STAT 547 Multivariate Analysis and Advanced Linear Models
STAT 556 Advanced Statistical Inference I
STAT 557 Advanced Statistical Inference II
STAT 565 Stochastic Processes with Applications
STAT 569 Selected Topics in Probability Theory
STAT 579 Selected Topics in Statistics: Instructor selected topics of current interest in Statistics

STAT 586 Nonparametric Curve Estimation and Image Reconstruction
STAT 590 Statistical Computing
STAT 595 Problems
STAT 599 Masters Thesis
STAT 605 Graduate Colloquium
STAT 649 Seminar in Probability and Statistics
STAT 650 Reading and research
STAT 699 Dissertation

MATH 463/512 Introduction to Partial Differential Equations
MATH 464/514 Applied Matrix Theory
MATH 472/572 Fourier Analysis and Wavelets
MATH 504 Intro. Numerical Analysis: Numerical Linear Algebra
MATH 505 Intro. Numerical Analysis: Approx. and Diff. Eqns.
MATH 510 Introduction to Analysis I
MATH 511 Introduction to Analysis II
MATH 563 Measure Theory (The basis for probability theory)
MATH 581 Functional Analysis I (Related to nonparametric regression)

4 Statistics Faculty

Information on the **Statistics Group Faculty** including their areas of interest can be found on the Department's websites:

`http://stat.unm.edu`
`http://stat.unm.edu/people/academic-personnel/tenure-stream`
`http://stat.unm.edu/research/statistics`

Faculty websites are based on their `emailname` at: `http://stat.unm.edu/~emailname`

Professor	`emailname`
Christensen	`fletcher`
Degnan	`james`
Erhardt	`erike`
Huerta	`ghuerta`
Li	`lil`
Lu	`luyan`
Zhang	`gzhang12`