

# Graduate Programs in Statistics at The University of Iowa, 2019-20

Thank you for your interest in admission to the University of Iowa. The University of Iowa was the first university to offer academic credit for creative work, continues as a pioneer in the area of interdisciplinary studies, and is a world leader in the health sciences. We invite you to explore our admission requirements and opportunities and to consider a campus visit.

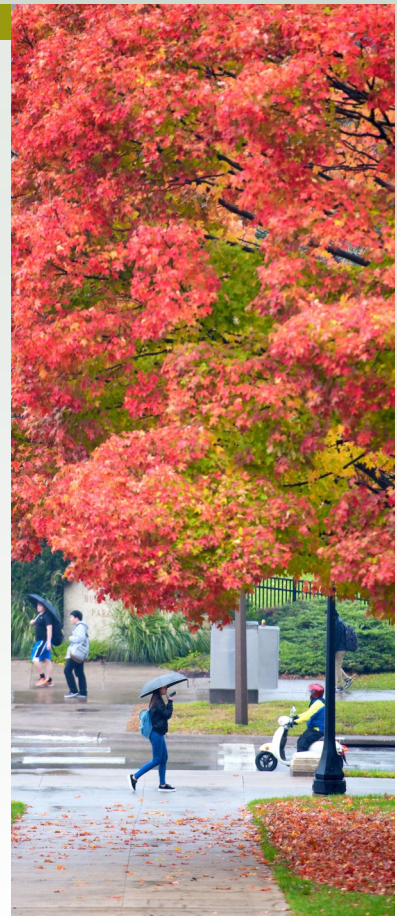
## ADMISSIONS REQUIREMENTS

The general minimum requirements for admission to the Graduate College at the University of Iowa are listed below; the admission requirements of individual departments and programs may be higher.

For admission to the University of Iowa Graduate College (necessary for departmental admission) applicants must have:

- a U.S. bachelor's degree from a regionally accredited college or university, or an equivalent degree from another country as determined by the Office of Admissions
- a minimum grade-point average (GPA) of 3.00, or foreign equivalent as determined by the Office of Admissions.

**IMPORTANT NOTE:** Application Deadlines: Decisions for Graduate Financial Support are typically made by April 15 for the upcoming academic year, so COMPLETED applications (WITH ALL LETTERS OF RECOMMENDATION, GRE SCORES, TOEFL (IF REQUIRED)) from students requesting to be considered for financial support MUST reach us by February 1, 2019.



### *Inside this issue*

M.S. in Statistics .....	2
Creative Component .....	2
M.S. Final Examinations ..	3
Ph.D. in Statistics.....	4
Ph. D. Timeline .....	5
FAQ .....	6-10

### **More**

#### **Information:**

**[www.stat.uiowa.edu](http://www.stat.uiowa.edu)**

**[statistics@uiowa.edu](mailto:statistics@uiowa.edu)**

**(319) 335-0712**



## Academic Deadlines

### M.S. in Actuarial Science Application

Fall Semester—June 15 (April 15 for international students) **THEY MUST BE COMPLETED APPLICATIONS by February 1st to be considered for financial support.**

Spring Semester—October 15 (Financial support will not be available)

Summer Session—Not offered

### M.S. or Ph.D. in Statistics Application

Fall Semester—February 15 (February 1 for international students). **THEY MUST BE COMPLETED APPLICATIONS by February 1st to be considered for financial support.**

Spring Semester—Not offered

Summer Session—Not offered

## *Distinguished history— Promising future*

### Creative Component

Students must also complete a creative component that is related to their application and career interests. Students wishing to qualify for the Ph.D. program are encouraged to write a research-oriented creative component. The creative component entails writing an 8-15 page report on a suitable topic, under an advisor's supervision normally during the fall and spring semesters of the second year.

### Masters of Science

The Master of Science in statistics requires 32 s.h. of graduate credit. The program prepares students for careers as professional statisticians or for entry into a Ph.D. program. It includes a solid foundation in statistical computing, statistical modeling, experimental design, and mathematical statistics plus electives in statistical methods and/or theory. Students have the opportunity to concentrate on theory or applications or a combination of the two.

In addition to required course work, students must pass a two-part graduate final examination and complete the M.S. creative component.

M.S. students in statistics must maintain a g.p.a. of at least 3.00 in all work toward the degree and in additional relevant course work. Students must take a computer programming proficiency test during the first semester of study; those who display inadequate programming skills are assigned activities to build their proficiency.

M.S. students planning to enter the doctoral program may wish to include STAT:5120 Mathematical Methods for Statistics in their course selections, since it is part of the required Ph.D. core.



*Students in front of the Old Capitol Building in the heart of the campus.*

## Masters of Science Final Examination

The M.S. final examination consists of two parts: one covers the topics presented in STAT:5100 Statistical Inference I and STAT:5101 Statistical Inference II; the other part covers the topics presented in STAT:5200 Applied Statistics I, STAT:5201 Applied Statistics II, and STAT:5400 Computing in Statistics. Each part includes a few problems that test readiness for the Ph.D. program.

Final examinations are offered the week before classes begin in August. Study guides are available in the department office. Students who do not succeed the first time they take the exam may repeat it once, with the possibility of a retake the week before classes begin in January.

Students must complete all requirements and be granted the Master of Science degree within one calendar year of passing the M.S. final examination; those who do not meet this deadline are required to take the exam again.

Students entering the Ph.D. program, who will choose either biostatistics, probability/mathematical statistics, or statistical modeling and computing as their concentration area, and who already have taken the equivalent of the first-year courses, may take the M.S. final examination in statistics before beginning further studies.

### **M.S. Timeline**

The timeline below describes the key milestones in the M.S. program. Meeting these milestones on time constitutes "adequate progress" toward the M.S. degree.

#### **Year 1**

Complete at least 18 semester hours of coursework with a GPA of at least 3.0, including courses needed to prepare for the M.S. Final Examination.

#### **Year 2**

Take the M.S. Final Examination before classes start in the fall. If necessary, re-take the exam in January.

Complete the remaining coursework with a GPA of at least 3.0, meeting the requirements of the M.S. program

Satisfactorily complete the creative component requirement (draft by end of fall, polished and presented by mid-spring).

Complete the Plan of Study.

File the Application for Degree.

## Ph.D. Final Examination

Students typically take the Ph.D. final (comprehensive) examination at the beginning of the third year of graduate study, during the week before fall classes begin. Students who do not succeed the first time they take the exam may repeat it once. Ordinarily, this second opportunity to pass the exam will occur one year later, during the week before fall classes begin. However, a student who performs well on one area of the exam but not the other may, in consultation with their advisor and the Director of Graduate Studies, petition the department to move up their second opportunity to the week before the next spring semester's classes begin. The department's decision on whether to grant this petition will take into account any extenuating circumstances. The comprehensive examination consists of a written core examination and an oral examination in two of the following four areas:

**Statistical Inference**  
**Linear Models**  
**Probability**  
**Statistical Computing**

## Ph. D. in Statistics

The Doctor of Philosophy program in statistics requires a minimum of 76 s.h. of graduate credit, including work completed for the M.S. degree. The Graduate College requires a minimum g.p.a. of 3.00 to graduate with a Ph.D. degree; however, the Department of Statistics and Actuarial Science requires a higher g.p.a. of at least 3.40 to earn the Ph.D. in statistics. This includes all courses used to meet degree requirements plus additional courses that are relevant to a student's program. Ph.D. students complete required course work, including four courses

in one of four concentration areas: biostatistics, probability/mathematical statistics, statistical computing, or actuarial science/financial mathematics

They may take course work or seminars in other departments to relate an area of specialization to other fields of knowledge, to acquire the ability to use electronic digital computing equipment, or to learn non-English language skills necessary for reading scientific journals and communicating with scholars in other languages.

### Ph.D. Qualifying Procedure

Students enter the Ph.D. program in one of two tracks:

**Statistics**—After successfully passing both the M.S. final examination in statistics and the creative component (in exceptional cases, a student may petition to go through the Ph.D. qualifying procedure early), a student who will choose either biostatistics, probability/mathematical statistics, or statistical computing as the selected concentration area, can request, by notifying the director of graduate studies, to go through the Ph.D. qualifying procedure. Upon this request, the faculty evaluates the student's body of work and assesses the student's potential for research. The body of work will include the M.S. final examination in statistics, the creative component, and course work. This evaluation and assessment results in one of three decisions—the student is officially admitted into the Ph.D. program; the student must reapply to go through the Ph.D. qualifying procedure after accumulating a larger body of work for evaluation; or the student is not admitted into the Ph.D. program.

**Actuarial Science**—After successfully passing the M.S. final examination in actuarial science (in exceptional cases, a student may petition to go through the Ph.D. qualifying procedure early), a student who will choose actuarial science/financial mathematics as the selected concentration area, can request, by notifying the director of graduate studies, to go through the Ph.D. qualifying procedure. Upon this request, the faculty evaluates the student's body of work and assesses the student's potential for research. The body of work will include the M.S. final examination in actuarial science, professional examinations passed, and course work. This evaluation and assessment results in one of two decisions—the student is officially admitted into the Ph.D. program in the actuarial science/financial mathematics concentration area, or the student is not admitted into the Ph.D. program.

Students complete the program by passing the Ph.D. final (comprehensive) examination and writing and defending a dissertation. Students usually complete the program three years after earning the M.S. degree.

## Ph. D. Timeline

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The timeline below describes the key milestones in the Ph.D. program. Meeting these milestones on time constitutes "adequate progress" toward the Ph.D. degree. See also the sample schedule below. Note that the year numbers refer to those entering the program with a baccalaureate degree. Students who enter after some amount of graduate study elsewhere may in effect be starting in year 2 or year 3.



### Year 1

Complete at least 18 semester hours of coursework with a GPA of at least 3.4, including courses needed to prepare for the M.S. Final Examination.

### Year 2

Take the M.S. Final Examination before classes start in the fall. If necessary, re-take the exam in January.

Complete at least 18 s.h. of coursework, including all prerequisites to STAT:7100, STAT:7200 and STAT:7300 with a GPA of at least 3.4 -- in essence meeting the requirements of the M.S. program.

Satisfactorily complete the creative component requirement (draft by end of fall, polished and presented by mid-spring). Begin working on identifying a potential dissertation advisor and dissertation topic.

### Year 3

Pass the comprehensive examination. (In certain cases where it was not possible to take the needed 7000-level courses by the end of the second year, this may need to be deferred to the fourth year.)

Complete at least 15 s.h. of courses with a GPA of 3.4 or higher, including a seminar course [STAT:7190, STAT:7290, or STAT:7390].

Identify the dissertation advisor, dissertation topic, and dissertation committee.

### Year 4

Complete most remaining core and concentration-area courses with a GPA of 3.4 or higher, a seminar course [STAT:7190, STAT:7290 or STAT:7390], and 3-6 s.h. of STAT:7990, Reading Research.

Present the dissertation prospectus.

### Year 5

Complete all course requirements, including remaining hours of STAT:7990 Reading Research, with a GPA of at least 3.4.

Complete the dissertation, including meeting dissertation deposit deadlines.

File the Application for Degree during the final semester.

Defend the dissertation.

The Department of Statistics and Actuarial Science has four interrelated missions by which it serves the University, the state, and the world. These four missions are:

- to provide both undergraduate and graduate students with strong degree programs and excellent instruction in probability, statistics, and actuarial science;
- to conduct and publish outstanding research in probability, statistics, and actuarial science;
- to promote the solid practice of statistics at the University and beyond;
- and to produce leaders in the insurance, pension, and actuarial consulting industry.



## Frequently Asked Questions

**Can you tell me more about the Graduate Program in Statistics and Actuarial Science?** To learn more about the MS graduate program in Statistics please go to this web page: <https://stat.uiowa.edu/>

**Could you please send me application materials?** We do not send materials by postal mail, since all of the needed information and required forms are available on this web page: <https://grad.admissions.uiowa.edu/academics/statistics-ms-or-phd>

**What are the application deadlines?** Decisions for Graduate Financial Support are typically made by April 15 for the upcoming academic year, so applications from students requesting financial support should reach us by February 1, 2019.

**Academic Requirements: (Statistics)** Students who apply to our M.S. program should have 3 semesters of calculus, a semester of linear algebra, at least one (preferably two) semesters of mathematical statistics (i.e. statistics with a calculus prerequisite), a semester of applied statistics or linear regression analysis, and a semester of computer programming. For students who know that they eventually want a Ph.D., it is advisable, though not strictly required, that they have a semester of real analysis.

**Academic Requirements: (Actuarial Science)** Students who apply to our M.S. program should have 3 semesters of calculus, a semester of linear algebra, at least one (preferably two) semesters of mathematical statistics (i.e. statistics with a calculus prerequisite), For students who know that they eventually want a Ph.D., it is advisable, to state this in your personal statement.

**What if I already have a masters may I apply directly to the PhD Program?** Typically, students who wish to pursue a Ph.D. in Statistics will be admitted initially to the M.S. program. After passing the PhD Candidacy Review, the student will be formally admitted to the Ph.D. program.

**What are the Admissions requirements?** The MS and the PhD in Statistics are awarded by the Graduate College. Instruction is offered through the College of Liberal Arts and Sciences. The MS is offered with or without a thesis. Please note the minimum requirements for Graduate program:

A U.S. bachelor's degree from a regionally accredited college or University, or an equivalent degree from another country as determined by the Office of Admissions. A minimum grade-point average (GPA) of 3.00, or foreign equivalent as determined by the Office of Admissions, on the completed undergraduate degree or on at least 12 hours of a graduate degree.

The GRE is required; however, there is no set minimum GRE score. The subject test is not required. Your GRE scores must be reported directly from the testing agency. Those dated within the last five years are acceptable. The University of Iowa institution code is 6681 (you do not need department codes). Please note our department does not accept GMAT scores. We may request an interview (by telephone, Skype, or in person) prior to making an admission decision.

**Are there additional requirements for International Students?** Yes, an International English Language Testing System (IELTS) total score of 7.0, with no sub score less than 6.0, may be used to satisfy the English-language requirement. All IELTS test takers will be required to take the on-campus English Proficiency Evaluation. A minimum TOEFL score of 105 is required on the internet-based test if you are applying for an MS or PhD in Statistics; the minimum TOEFL score of 85 is required on the internet-based test if you are applying for the MS in Actuarial Science. Your TOEFL scores must be reported directly from the testing agency. Those dated within the last two years are acceptable. The University of Iowa's institutional code is 6681 (you do not need departmental codes). Students whose TOEFL scores are below 600 (250 on the computer-based test; 100 on the internet-based test) will be required to sit for an English evaluation upon arrival in Iowa City. The Graduate College will require these students to take and pass recommended course work in English usage. This requirement is waived for applicants who have completed a bachelor's degree (or higher) at an accredited university in the United States, the United Kingdom, Canada (excluding French-speaking Quebec), English-speaking Africa, Australia, or New Zealand.

**Please note regarding TOEFL:** This requirement is waived for applicants who have completed a bachelor's degree (or higher) at an accredited university in the United States, the United Kingdom, Canada (excluding French-speaking Quebec), English-speaking Africa, Australia, or New Zealand. On the official application it will state that TOEFL is required, HOWEVER, this is not waived until The University of Iowa has received notice of your degree (or degrees) which can happen much later (after you graduate). *(So we just say DO NOT WORRY about it and that this will be waived at a later date).* TOEFL scores in general are only valid for 2 years after the test date. So if you took the exam on April 2<sup>nd</sup>, 2017 the scores will only be valid until April 2<sup>nd</sup>, 2019, at which point ETS will not send out official scores for that particular test. As long as the official scores are sent from ETS prior to invalidating, we will accept them.





**How many students apply each year? How many are admitted?** Application volumes can vary substantially from year-to-year. For 2018-19 we received about 199 Statistics and 57 Actuarial Science applications. Incoming cohorts are generally 8-15 students in each program. The number of students admitted usually depends on the availability of funding to support the students.

**What proportion of admitted students receives funding?** Currently, two-thirds of the students admitted to our program have some form of funding. Most receive teaching or research assistantships. Some have external (i.e., non-University of Iowa) funding. A very small number of students receive fellowships from the University of Iowa's Graduate College. Research assistantships are primarily reserved for our PhD candidates. Funding is very competitive, many very well qualified and deserving students will not be granted support. Our needs are greater for students who have a background in Statistics.

**If I am an international student and offered a graduate teaching assistant, what do I need to do to get my English language skills tested?** All students for whom English is not a first language and who have first-time appointments as graduate teaching assistants (TAs) are required to take a test to assess their effectiveness in speaking English before they are assigned assistantship responsibilities. The English Speaking Proficiency Assessment (ESPA) is a test that assesses students' oral language and listening skills. To take the test, students must be enrolled in a graduate program at The University of Iowa, and an academic department must be considering hiring them as teaching assistants. Details will be given to all students.

All students to be tested must first register for the ESPA test through their departments. When a department offers (or is thinking about offering) a teaching assistantship to a student who has never before been a TA at the University, the department sends a Request for Evaluation form to the ESL Programs Office. The ESL Office sends the student (via the department) a letter indicating the time and place of the appropriate ESPA testing.

**What is the difference between a fellowship and a teaching or research assistantship?** A fellowship generally includes a 12-month stipend and a full tuition scholarship, renewable for four or five years (provided that the student is making adequate progress in the program). Usually, the first and last year of a fellowship are free from assisting faculty with research and teaching (while the middle years require that the student work with faculty on assignments related to teaching or research). In contrast, teaching and research assistantships are generally 9-month appointments, carrying a stipend and full tuition scholarship. Students who receive teaching or research assistantships are expected to work an average of 10 (if 1/4-time) or 20 (if 1/2-time) hours per week on assignments related to teaching or research.



**Is funding available for students who are not U.S. citizens?** Yes. Students who are not U.S. citizens are eligible for teaching assistantships, and in most cases, research assistantships. Note, however, that students who receive teaching assistantships must be certified by the English as a Second Language Program.

**What are the minimum GRE scores for each area?** We do not have a required minimum for the GRE scores. Of the 256 students who applied to our program for the 2018-19 academic year they had an average GRE: 152 Verbal, 167 Quantitative score.

We read the entire application file. Consequently, what a student may perceive as a deficiency in one component of the application (say, a low quantitative GRE score) can be compensated with exceptional strengths in others (say high grades in quantitative college courses like mathematics that are reflected on a transcript). If a student feels that her/his GRE scores do not accurately reflect her/his ability, then it is a good idea for the student to explain that in their statement of purpose (pointing to other evidence of their ability in other application materials).



**How recent must my GRE scores be?** Your GRE scores are no longer valid after five years. Thus, if your scores are five years or older, you must re-take the GRE.

**Will you accept the initial report on my GRE that I received after taking it?** No. We must have an official report sent to us by ETS (the organization that administers the GRE). We must have the official report by the application deadline to ensure that your application receives full consideration.

**How many times may I take the GRE?** You may take the GRE as many times as you would like. We will consider all of your scores as an aggregate. That is, we will examine the range, the median, and the trends in the scores. Note that taking the GRE multiple times and scoring higher on one attempt than others does not necessarily mean that we will consider only that highest attempt.

**What is the estimated cost for international students to attend the University of Iowa?** The estimated costs can be better reviewed on this website:

[https://grad.admissions.uiowa.edu/finances?utm\\_source=Admissions%20Page%20Menu&utm\\_medium=Grad%20Finances&utm\\_campaign=UI%20Home%20Page](https://grad.admissions.uiowa.edu/finances?utm_source=Admissions%20Page%20Menu&utm_medium=Grad%20Finances&utm_campaign=UI%20Home%20Page)

In 2018-19, a 1/4 time appointment (10 hours of teaching or grading) receives a full-tuition scholarship and \$9,818 stipend for the school year. A 1/2 time appointment (20 hours of teaching or grading) receives a full-tuition scholarship and \$18,636 stipend for the school year. Students holding an assistantship (quarter-time or more) are classified as residents for fee purposes for the terms during which their appointments are held and any adjacent Summer Sessions in which they are enrolled. They are not assessed a technology fee, but will be responsible for miscellaneous fees assessed each semester (student health, student activities fee, building fee, student union fee, arts and cultural fees, recreation fee, etc., which total \$463 per semester).

**Do you accept letters of recommendation online?** Yes, we do. You just need to enter your recommender email address and Admissions will send a request on your behalf.

**Who should I contact with specific questions?** Please contact us by e-mail at [statistics@uiowa.edu](mailto:statistics@uiowa.edu) or by telephone at 319 335-2082, ask to speak to Margie.

