STATISTICS: APPLIED STATISTICS, MS

This is a named option in the Statistics MS (http://guide.wisc.edu/graduate/statistics/statistics-ms/). The Department of Statistics recognizes that many students wish to have significant training within statistics, but apply their knowledge paired with a domain field in which they will utilize their statistical knowledge. This option within the MS Statistics provides the opportunity to do this. It is expected that many students will wish to pursue this program as a double, dual, or joint MS degree (https://grad.wisc.edu/academic-policies/) or also pursue a PhD in their domain field.

The Applied Statistics option is distinct from the other MS statistics options in its interdisciplinary emphasis with domain-specific electives and research/project and its corresponding reduced depth in statistics. Students interested in training with statistical consulting as the primary focus should apply for the MS Statistics: Statistics (http://guide.wisc.edu/graduate/statistics/statistics-ms/statistics-statistics-ms/).

ADMISSIONS

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).** Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

Requirements	Detail
Fall Deadline	January 2
Spring Deadline	The program does not admit in the spring.
Summer Deadline	The program does not admit in the summer.
GRE (Graduate Record Examinations)	Not required.
English Proficiency Test	Every applicant whose native language is not English, or whose undergraduate instruction was not exclusively in English, must provide an English proficiency test score earned within two years of the anticipated term of enrollment. Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

Applicants to the MS Statistics: Applied Statistics program may fall into two categories:

1. Joint, double, or dual degree with another program on campus. For applicants who fall in to this category, they may apply either while they are applying to their domain program or once they are on campus. It is strongly advised that applicants indicate their domain program in their statement of interest. For applicants already on campus, please contact admissions@stat.wisc.edu for information on how to apply.

2. Stand-alone program applicants. For applicants who fall into this category, it is strongly advised to include information in your statement regarding your specific domain area, ideas for collaboration within the domain field, and address why you are choosing this option versus the traditional MS Statistics: Statistics.

Applicants to the MS Statistics: Applied Statistics program should have completed the following courses equivalent to the UW-Madison courses:

Code	Title	Credits
Undergraduate Calculus		
MATH 221	Calculus and Analytic Geometry 1	5
MATH 222	Calculus and Analytic Geometry 2	4
MATH 234	Calculus--Functions of Several Variables	4
Statistics		
Complete one sequence below		
Option 1		
STAT/ F&W ECOL 571 & STAT/ F&W ECOL 572	Statistical Methods for Bioscience I and Statistical Methods for Bioscience II	
Option 2		
STAT 301	Introduction to Statistical Methods	
or STAT 324	Introductory Applied Statistics for Engineers	
or STAT 371	Introductory Applied Statistics for the Life Sciences	
STAT 303	R for Statistics I	
STAT 333	Applied Regression Analysis	
Option 3		
POLI SCI 812 & POLI SCI 813	Introduction to Statistical Methods in Political Science and Multivariable Statistical Inference for Political Research	

Option 4: or another similar introductory statistics sequence

FUNDING

FUNDING
GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM INFORMATION

Students admitted to the MS Statistics: Applied Statistics option will have the opportunity to apply for teaching assistantships within the Department of Statistics. Students applying to the program by the January 2 deadline will be considered for funding at the time of application. Questions about funding opportunities within the Statistics department should be directed to the graduate program coordinator.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS
MODE OF INSTRUCTION

Face to Face	Evening/Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirements	Detail
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).

Other Grade Requirements	n/a
Assessments and Examinations	Candidates must complete a project with an emphasis on the integration of statistics and science. A final oral examination is also required upon completion of the coursework and project.
Language Requirements	No language requirements.

REQUIRED COURSES

Code	Title	Credits
Introductory Mathematical Statistics		
Complete using one of the following sequences		6
STAT/MATH 309 & STAT/MATH 310	Introduction to Probability and Mathematical Statistics I and Introduction to Probability and Mathematical Statistics II	
STAT 311 & STAT 312	Introduction to Theory and Methods of Mathematical Statistics I and Introduction to Theory and Methods of Mathematical Statistics II	
STAT 609 & STAT 610	Mathematical Statistics I and Introduction to Statistical Inference	
Or equivalent one-year sequence		
Domain Area Electives		**9**
Statistics Graduate Electives: [1]		
STAT courses numbered 600 or above		6
STAT courses numbered 500 or above		3
Applied Experience:		
STAT 678	Introduction to Statistical Consulting	3
Research or Project (see details below)		3
Total Credits		**30**

[1] Excluding STAT/F&W ECOL 571, STAT/F&W ECOL 572, STAT/B M I 541, STAT 698, STAT 699, STAT 990 and any courses/sections reserved for MS Statistics: Data Science or Statistics-VISP students. Credits from suitable quantitative courses taught in other departments (e.g., mathematics) may be substituted.

Selecting Program Coursework

All students in the MS Statistics: Applied Statistics (MSAS) option will work directly with their Statistics advisor prior to initial enrollment. Students will also need to work with their Statistics advisor, and their domain committee member/co-advisor to select appropriate coursework during their first year of enrollment. This will be done by completing the MSAS course plan form (found in the program handbook). Students are strongly encouraged to have all coursework pre-approved and multiple options of courses, in the case of the domain electives, to ensure that they are able to complete appropriate courses approved by their committee.

Domain coursework that covers statistical methodology is limited to a maximum of 3 credits. Independent study or internship credits cannot be included in domain coursework. Students will need to have a central

theme to their domain coursework that can be selected from multiple, related departments. Here are some examples of themes and courses:

- **Ecology**: F&W ECOL/ZOOLOGY 660 Climate Change Ecology, F&W ECOL/BOTANY/ENVIR ST/ZOOLOGY 651 Conservation Biology, ZOOLOGY/BOTANY 725 Ecosystem Concepts
- **Entomology**: ENTOM 450 Basic and Applied Insect Ecology, ENTOM/GENETICS/ZOOLOGY 624 Molecular Ecology, ENTOM 701 Advanced Taxonomy
- **Information**: L I S 615 Systems Analysis and Project Management for Information Professionals L I S 711 Data Management for Information Professionals, L I S 751 Database Design for Information Professionals
- **Plant Breeding and Plant Genetics**: HORT/AGRONOMY 501 Principles of Plant Breeding, HORT/AGRONOMY 811 Biometrical Procedures in Plant Breeding, HORT/GENETICS 550 Molecular Approaches for Potential Crop Improvement
- **Plant Pathology**: PL PATH 300 Introduction to Plant Pathology, PL PATH/BOTANY/ENTOM 505 Plant-Microbe Interactions: Molecular and Ecological Aspects, PL PATH 602 Ecology, Epidemiology and Control of Plant Diseases
- **Political Science**: POLI SCI 817 Empirical Methods of Political Inquiry, POLI SCI 818 Maximum Likelihood Estimation, POLI SCI 919 Seminar-Advanced Methodology
- **Population Health**: POP HLTH 795 Principles of Population Health Sciences, POP HLTH 796 Introduction to Health Services Research, POP HLTH/SOC 797 Introduction to Epidemiology, POP HLTH 798 Epidemiologic Methods

The course plan will be reviewed by the student services coordinator prior to requesting the MS warrant to ensure that the correct and approve courses have been completed.

Research or Project

Each student must complete a project that represents an original contribution to applied statistics as the goal of this named option is to train statisticians who will work in a collaborative research environment. Examples of such contributions may include the creation and evaluation of a useful experimental design, the development and/or comparison of statistical methods, or a novel analysis of some interesting data related to their domain area. All students will work directly with their Statistics advisor and domain committee member/co-advisor to identify an appropriate project.

The project results are to be presented in a manuscript with emphasis on the integration of statistics and science that is approved by the student's 3-member committee. This requirement will be formalized by enrolling in at least three credits of "Research'' or "Directed Study" (for example, independent study or research courses numbered 699, 799, or 999 in Statistics or in another department).

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

NAMED OPTION–SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

With program approval, students are allowed to transfer no more than 9 credits of graduate coursework from other institutions toward the graduate degree credit and graduate coursework (50%) requirements. Coursework earned ten or more years prior to admission to the master's degree is not allowed to satisfy requirements.

Undergraduate Credits Earned at Other Institutions or UW–Madison

No credits from a UW–Madison undergraduate degree are allowed to transfer toward the degree.

Credits Earned as a Professional Student at UW–Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Credits Earned as a University Special Student at UW–Madison

No credits earned while a University Special student are allowed to transfer toward the degree.

PROBATION

Refer to the Graduate School: Probation (https://policy.wisc.edu/library/UW-1217/) policy.

ADVISOR / COMMITTEE

Students are required to meet with their advisor near the beginning of each semester to discuss course selection and progress. Refer to the Graduate School: Advisor (https://policy.wisc.edu/library/UW-1232/) and Graduate School: Committees (Doctoral/Master's/MFA) (https://policy.wisc.edu/library/UW-1201/) policies.

CREDITS PER TERM ALLOWED

15 credits

TIME LIMITS

If the student is enrolled in a concurrent PhD degree, the student should make application for both the master's and PhD degrees during the semester in which they defend. In other words, the Masters Statistics: Applied Statistics degree should be completed by the semester in which the concurrent PhD degree is completed. It is expected that all enrolled students will complete the program within three years.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
    - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)

- Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office Student Assistance and Support (OSAS) (https://osas.wisc.edu/) (for all students to seek grievance assistance and support)
- Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

Students should contact the department chair or program director with questions about grievances. They may also contact the L&S Academic Divisional Associate Deans, the L&S Associate Dean for Teaching and Learning Administration, or the L&S Director of Human Resources.

OTHER
n/a

PROFESSIONAL DEVELOPMENT

PROFESSIONAL DEVELOPMENT
GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

PROGRAM RESOURCES

Students in the MS Statistics: Applied Statistics program are encouraged to participate in program-specific professional development events and work directly, one-on-one, with advisors as well. Information about events and resources will be made available to currently enrolled students via email.

PEOPLE

PEOPLE
FACULTY

Cecile Ane (https://stat.wisc.edu/staff/ane-cecile/), Professor

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