STATISTICS: APPLIED STATISTICS, M.S.

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

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>NO</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
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</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>15 credits (50% of 30) must be graduate-level coursework. Details can be found in the Graduate School's policy: <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> (<a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required. This program follows the Graduate School's policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> (<a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a>).</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>n/a</td>
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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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT/MATH 309 &amp; STAT/MATH 310</td>
<td>Introduction to Probability and Mathematical Statistics I and Introduction to Probability and Mathematical Statistics II</td>
<td>6</td>
</tr>
<tr>
<td>STAT 311 &amp; STAT 312</td>
<td>Introduction to Theory and Methods of Mathematical Statistics I and Introduction to Theory and Methods of Mathematical Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 609 &amp; STAT 610</td>
<td>Mathematical Statistics I and Introduction to Statistical Inference</td>
<td>3</td>
</tr>
</tbody>
</table>

Or equivalent one-year sequence

Domain Area Electives 9

Statistics Graduate Electives: 1

Statistics courses numbered 600 or above 6
Statistics 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/HORT 571, STAT/F&W ECOL/HORT 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 option will work directly with their Statistics advisor prior to initial enrollment and will 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 (which is 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**: LIS 615 Systems Analysis and Project Management for Information Professionals, LIS 711 Data Management for Information Professionals, LIS 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 the requesting of 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 in the MS Statistics: Applied Statistics option 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).