

STATISTICS: STATISTICS AND DATA SCIENCE, MS

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (<https://guide.wisc.edu/graduate/#requirements>) and policies (<https://guide.wisc.edu/graduate/#policies>), 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	Yes

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

Requirement 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 Students may only have one core course (STAT#160;601, STAT#160;610, or STAT#160;615) with a grade below B.

Assessments and Examinations None.

Language Requirements No language requirements.

REQUIRED COURSES

Code	Title	Credits
Core		
STAT 601	Statistical Methods I ¹	4
STAT 610	Introduction to Statistical Inference ¹	4
STAT 615	Statistical Learning ¹	3
Professional Skills Courses		
STAT 605	Data Science Computing Project ¹	3
STAT 628 or STAT 678	Data Science Practicum ¹ Introduction to Statistical Consulting	3
Electives		
Students must complete 13 credits of electives.		13
<i>STAT Courses Numbered 600 or Above</i>		
At least 6 credits of STAT courses numbered 600 or above including the following:		
STAT 606	Computing in Data Science and Statistics (At least 6 credits of STAT courses numbered 600 or above including the following:)	
STAT 609	Mathematical Statistics I	
STAT/B M I 620	Statistics in Human Genetics	
STAT/B M I 641	Statistical Methods for Clinical Trials	
STAT/B M I 642	Statistical Methods for Epidemiology	
STAT 679	Special Topics in Statistics (may be repeated with different topic titles)	
STAT 701	Applied Time Series Analysis, Forecasting and Control I	
STAT/MATH 709	Mathematical Statistics I	
STAT/MATH 710	Mathematical Statistics II	
STAT 732	Large Sample Theory of Statistical Inference	
STAT/B M I 741	Survival Analysis Theory and Methods	
STAT 760	Multivariate Analysis I	
STAT 761	Decision Trees for Multivariate Analysis	
STAT/B M I 768	Statistical Methods for Medical Image Analysis	
STAT 771	Computational Statistics	
STAT 772	Linear Randomized Algorithms for Data Science	
STAT/ECON/ GEN BUS 775	Bayesian Statistics	
STAT/MATH 803	Experimental Design I	
STAT 809	Non Parametric Statistics	

STAT 834	Empirical Processes and Semiparametric Inference
STAT 841	Nonparametric Statistics and Machine Learning Methods
STAT/B M I 877	Statistical Methods for Molecular Biology
STAT 992	Seminar

STAT Courses Numbered 300-599

Students may count up to 3 credits of STAT electives numbered 300-599 including:

STAT 303	R for Statistics I
STAT 304	R for Statistics II
STAT 305	R for Statistics III
STAT 349	Introduction to Time Series
STAT 351	Introductory Nonparametric Statistics
STAT 405	Data Science Computing Project
STAT 411	An Introduction to Sample Survey Theory and Methods
STAT 421	Applied Categorical Data Analysis
STAT 433	Data Science with R
STAT 436	Statistical Data Visualization
STAT 443	Classification and Regression Trees
STAT 451	Introduction to Machine Learning and Statistical Pattern Classification
STAT 453	Introduction to Deep Learning and Generative Models
STAT 456	Applied Multivariate Analysis
STAT 461	Financial Statistics
STAT/ COMP SCI 471	Introduction to Computational Statistics
STAT 479	Special Topics in Statistics
STAT 575	Statistical Methods for Spatial Data

Non-Departmental Course Numbered 500 or Above

Students may count up to 1 elective course (up to 4 credits) numbered 500 or above taught outside of STAT with advisor approval from the courses below. Students are not guaranteed a seat in an elective course taught from outside of the Statistics department. They must obtain departmental permission to enroll.

MATH/I SY E/ OTM/STAT 632	Introduction to Stochastic Processes
COMP SCI 540	Introduction to Artificial Intelligence
COMP SCI 577	Introduction to Algorithms
COMP SCI 640	Introduction to Computer Networks
COMP SCI/I SY E/ MATH/STAT 726	Nonlinear Optimization I

Remaining Electives

To satisfy the 13-credit elective minimum, students may also apply the following courses:

STAT 303	R for Statistics I
STAT 304	R for Statistics II
STAT 305	R for Statistics III

STAT/ COMP SCI 403	Internship Course in Comp Sci and Data Science (1 credit maximum allowed)
STAT 627	Professional Skills in Data Science
STAT 699	Directed Study (2 credits maximum allowed)

Total Credits**30**

¹ Students who are able to demonstrate equivalent prior coursework may request to substitute required course with a Statistics-taught course numbered 600 or above with advisor approval. Substitutions are not guaranteed and will be reviewed on a case-by-case basis.

Graduate and Undergraduate Courses with Similar Topics

Courses that cover the same or similar topic at the undergraduate- and graduate-level may both be used to fulfill the MS in Statistics and Data Science requirements, but if both courses are to be used, the undergraduate level course must be completed first. Note that this policy does not preclude students from taking just the undergraduate or just the graduate version of a topic. These combinations would include STAT 349 and STAT 701, STAT 351 and STAT 809, STAT 405 and STAT 605, STAT 411 and STAT 732, STAT 456 and STAT 760, STAT 443 and STAT 761, STAT 451 and STAT 615, and STAT/COMP SCI 471 and STAT 771. This will also apply to special topics courses that have similar topics between the undergraduate and graduate level.

Other Policy

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval. Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.