

BIOMETRY AND STATISTICS MINOR

College of Agriculture and Life Sciences

Program Website (<https://cals.cornell.edu/education/degrees-programs/biometry-statistics-major-and-minor/>)

Program Description

A minor in Biometry and Statistics is available to all undergraduate students, with the exception of students majoring in Statistics & Biometry. To complete the program, students must submit a minor application form online. Students should contact the Assistant Director of Undergraduate Advising for Statistics and Data Science if they have general questions about Biometry and Statistics courses or the minor.

Minor Requirements

Code	Title	Hours
Calculus I ¹		
MATH 1110	Calculus I	4
Calculus II ²		
MATH 1120	Calculus II	4
	or MATH 1910 Calculus for Engineers	
Multivariable Calculus ³		
MATH 2220	Multivariable Calculus	4
	or MATH 2240 Theoretical Linear Algebra and Calculus	
	or MATH 2130	
	or MATH 1920 Multivariable Calculus for Engineers	
Statistical Methods I ⁴		
BTRY 3010	Statistics I (or)	
BTRY 6010	Statistical Methods I (or)	
An equivalent course: AEM 2100, ENGRD 2700, HADM 2010, ILRST 2100, MATH 1710, PAM 2100/2101, PSYCH 2500, SOC 3010, or STSCI 2150.		
Statistical Methods II		
STSCI 3200	Statistics II	4
	or BTRY 6020 Statistical Methods II	
Probability		
Select one of the following:		
STSCI 3080	Probability Models and Inference	
MATH 4710	Basic Probability	
ECON 3130	Probability and Statistics	
ORIE 3500	Eng Probability and Statistics: Modeling and Data Science II	

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- Students may have this requirement fulfilled by adequate performance in AP Calculus AB. (see Advanced Placement and Non-Cornell (Transfer) (<https://cals.cornell.edu/undergraduate-students/cals-student-services/academic-resources/advanced-placement-and-non-cornell-transfer-credit/>)).
 - Students may have this requirement fulfilled with a passing score ("S") on the CASE Exam (<https://math.cornell.edu/ap/#cornell-placement-exams>) for MATH 1110.

- Students may have this requirement fulfilled if credit is earned for MATH 1110 due to adequate scores on GCE "A" level exams or IB higher-level exams (see Advanced Placement for Calculus (<https://math.cornell.edu/ap/>)).

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- Students may have this requirement fulfilled by adequate performance in AP Calculus BC (see Advanced Placement and Non-Cornell (Transfer) Credit).
 - Students may have this requirement fulfilled with a passing score ("S") on the CASE Exam for MATH 1120 or MATH 1910.
 - Students may have this requirement fulfilled if credit is earned for MATH 1120 due to adequate scores on GCE "A" level exam in Singapore (see Advanced Placement for Calculus).
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- Students may have this requirement fulfilled with a passing score ("S") on the CASE Exam for MATH 1920.
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- Students may have this requirement fulfilled by adequate performance in AP Statistics.

Electives

Only courses for which the student receives a grade of C– or better will count toward the minor in Biometry and Statistics.

Code	Title	Hours
Students must take three additional courses from the list below ¹		
BTRY 3090	Financial Math for Actuarial Science	4
BTRY 3100	Statistical Sampling	4
BTRY 4820		
STSCI 3510		4
STSCI 3740	Data Mining and Machine Learning	4
	or CS 3780 Introduction to Machine Learning	
	or CS 4786	
	or ORIE 3741 Learning with Big Messy Data	
STSCI 3900	Causal Inference	3
STSCI 4010		
STSCI 4050	Modern Regression Models for Data Science	4
STSCI 4060	Python Programming and its Applications in Statistics	4
BTRY 4100	Multivariate Analysis	4
BTRY 4110	Categorical Data	3
BTRY 4140	Applied Design	4
BTRY 4270	Introduction to Survival Analysis and Loss Models	3
STSCI 4550	Applied Time Series Analysis	4
STSCI 4630	Operations Research Tools for Financial Engineering	4
STSCI 4780	Bayesian Data Analysis: Principles and Practice	4
STSCI 5640	Statistics for Financial Engineering	4
BIOCB 4381	Biomedical Data Mining and Modeling	3
BIOCB 4830	Quantitative Genomics and Genetics	4

BIOCB 4840	Computational Genetics and Genomics	4
CS 4740	Natural Language Processing	4
ECON 4110		
NTRES 6700		

Students can take two of the following courses to count as ONE elective: STSCI 3600 (2 cr), STSCI 4610 (2 cr), and STSCI 4850 (2 cr).

¹ Linear Algebra, STSCI 4030 Linear Models with Matrices, STSCI 4090 Theory of Statistics and STSCI 4520 Statistical Computing can also be counted towards this requirement.

Learning Outcomes

- Students will be able to explain and apply the fundamentals of applied statistical methodology.
- Students will be able to use modern computational methods.
- Students will be able to demonstrate knowledge of the statistical foundations of data science.