

Applied Statistical Modeling Certificate

This certificate equips undergraduate students with the tools necessary to understand how to apply statistics to their primary field of study. This certificate program is designed to complement diverse degree programs and to appeal to students across the University in engineering, science, economics, mathematics, and many other disciplines.

Admission

Admission to the certificate is by application only. Students may download an application from the Department of Statistics and Data Science webpage.

Total Hours Required: 18

Requirements

Requirements are listed in the table below. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#). Students should also review the [University's Undergraduate Minor and Certificate Requirements and Policies](#).

Code	Title	Hours
Mathematical Foundation of Statistics		
Hours chosen from:		3
BME 335	Engineering Probability and Statistics	
ECE 351K	Probability and Random Processes	
M 362K	Probability I	
SDS 321	Introduction to Probability and Statistics	
Sequence in Applied Statistics		
Hours chosen from:		3
ECO 329	Economic Statistics	
EDP 371	Introduction to Statistics	
GOV 350K	Statistical Analysis in Political Science	
M 358K	Applied Statistics	
PSY 420M	Psychological Methods and Statistics	
SOC 317L	Introduction to Social Statistics	
SDS 302F	Foundations of Data Analysis	
SDS 320E	Elements of Statistics	
SDS 320H	Elements of Statistics: Honors	
STA 301	Introduction to Data Science	
STA 301H	Introduction to Data Science: Honors	
Hours chosen from:		3
ECE 461P	Data Science Principles	
ECO 441K	Introduction to Econometrics	
M 349R	Applied Regression and Time Series	
PSY 325K	Advanced Statistics	
SDS 322E	Elements of Data Science	
SDS 326E	Elements of Statistical Machine Learning	
SDS 324E	Elements of Regression Analysis	
Electives		
Hours chosen from:		9
ADV 344K	Advertising and Public Relations Research	
C S 342	Neural Networks	
C S 343	Artificial Intelligence	

C S 363M	Principles of Machine Learning I
C S 371R	Information Retrieval and Web Search
CMS 348	Communication Research Methods
ECO 354K	Introductory Game Theory
ECO 348K	Advanced Topics in Econometrics
ECO 342L	Advanced Econometrics
ECO 353M	Empirical Public Economics
GEO 325K	Computational Methods
GEO 365N	Seismic Data Processing
HED 343	Foundations of Epidemiology
HED 373	Evaluation and Research Design
KIN 376	Measurement in Kinesiology
LIN 350.15	Computational Semantics
M 339J	Probability Models with Actuarial Applications
M 349P	Actuarial Statistical Estimates
M 362M	Introduction to Stochastic Processes
M 378K	Introduction to Mathematical Statistics
or SDS 378	Introduction to Mathematical Statistics
M 378P	Decision Analytics
or SDS 378P	Decision Analytics
MIS 372T.11	Advanced Analytics Programming
MIS 372T.22	Predictive Analytics and Data Mining
PBH 354	Epidemiology I
PGE 378	Applied Reservoir Characterization
SDS 322E	Elements of Data Science
SDS 324E	Elements of Regression Analysis
SDS 326E	Elements of Statistical Machine Learning
SDS 375	Special Topics in Scientific Computation
SDS X79R	Undergraduate Research
STA 372T.21	Time Series Forecasting
STA 235	Data Science for Business Applications
STA 235H	Data Science for Business Applications: Honors
Students are encouraged to select courses within their own majors or colleges as appropriate. The Statistics and Data Sciences courses listed are available to students in all majors.	
College Requirements - Natural Sciences	
Undergraduate Minor and Certificate Requirements and Policies	
Total Hours	18

Additional Requirements and Policy

- SDS 322E, SDS 326E, and SDS 324E may only be counted toward one requirement each.
- Students seeking the certificate must also complete the prerequisite course M 408C, M 408L, M 408N, M 408R, or M 408S with a grade of at least C-.
- Students must receive a grade of at least C in each course applied toward the certificate and have a cumulative grade point average of at least 3.0 in the courses presented to fulfill the certificate.
- Courses that appear in multiple approved course lists may be used to satisfy only one requirement.
- Students must contact the Department of Statistics and Data Sciences in the semester in which they are completing the requirements and graduating.