The University of Texas at Austin
Department of Statistics and Data Sciences
College of Natural Sciences

Certificate in Applied Statistical Modeling Course Requirements (2020–2022 Catalog)

Policies and Procedures

- Total of 18 hours (six courses in sections II. – V. below) **must be completed with a grade of C or higher** with a cumulative grade point average of at least 3.0 across all courses used to fulfill the certificate (excluding prerequisite).
- No transfer credit or credit-by-exam may be used to fulfill certificate course requirements (excluding prerequisite).
- Not all courses listed in this document are offered every semester. See UT course schedule for available class offerings.
- See SDS website for how to enroll: stat.utexas.edu/undergraduate/certificate-in-applied-statistical-modeling

I. Prerequisite Knowledge (choose one)

Mathematics: 408C Calculus I, 408L Integral Calculus, 408R Calculus for Biologists, 408S Integral Calculus, 408Q Differential and Integral Calculus for Business

II. Mathematical Foundations of Statistics (choose one)

Statistics & Data Sciences: 321 Intro to Prob & Statistics
Biomedical Engineering: 335 Engineering Probability Statistics
Electrical Engineering: 351K Probability and Random Processes
Mathematics: 362K Probability I

III. Applied Statistics Course 1 (choose one)

Statistics & Data Sciences: 302/306 Data Analysis for the Health Sciences, 302F Foundations of Statistics, 320E Elements of Statistics, 320H Elements of Statistics Honors, 328M Biostatistics
Statistics (IROM): 301/H Introduction to Data Science/Honors, 309 Elementary Business Statistics
Economics: 329 Economic Statistics
Educational Psychology: 371 Intro to Statistics
Government: 350K Statistical Analysis in Political Science
Mathematics: 358K Applied Statistics
Psychology: 418 Statistics & Research Design, 420M Psychological Methods and Statistics
Sociology: 317L Intro to Social Statistics

IV. Applied Statistics Course 2 (choose one)

Statistics & Data Sciences: 325H Honors Statistics, 332 Statistical Models for the Health & Behavioral Sciences, 352 Statistical Modeling, 358.1 Applied Regression, 324E Elements of Regression Analysis
Statistics (IROM): 371G/H Statistics & Modeling/ Honors, 375/H Statistics & Modeling for Finance/Honors
Economics: 441K Intro to Econometrics
Mathematics: 349R Applied Regression

V. Electives (choose three)

Students are encouraged to select courses within their own majors or colleges as appropriate. The *Statistics and Data Sciences* courses are available to students in all majors.

Statistics & Data Sciences: 322E Elements of Data Science, 323 Statistical Learning and Inference, 348 Computational Biology & Bioinformatics, 353 Advanced Multivariate Modeling, 374E Visualization & Data Analysis, 375 Data Viz in R, 378 Intro to Mathematical Statistics, 378P Decision Analytics, 379R Undergraduate Research*

***Research Course:** students must have a faculty supervisor and propose an original research project to be approved by the SDS Faculty Committee prior to enrollment. A final research paper is reviewed to ensure it meets certificate requirements*

Statistics (IROM): 235/H Data Science for Business Applications/Honors, 372.5 Financial & Econometric Time Series Modeling
Advertising: 344K Advertising Research
Communication Studies: 348 Communication Research Methods
Computer Science: 342 Neural Networks, 343 Artificial Intelligence, 343D Introduction to Data Mining
Economics: 348K.1 Advanced Econometrics, 354K Intro to Game Theory
Electrical Engineering: 461P Data Science Principals
Geological Sciences: 325K Computational Methods, 365N Seismic Data Processing
Health Education: 343 Foundations of Epidemiology*, 373 Evaluation & Research Design

***HED 343:** open to non-majors in fall term only*

Kinesiology: 376 Measurement in Kinesiology
Linguistics: 350.15 Computational Semantics
Mathematics: 339J Probability Models with Actuarial Applications, 349P Actuarial Statistical Estimate, 362M Introduction to Stochastic Processes, 378K Introduction to Mathematical Statistics, 378P Decision Analytics
Management Information Systems: 373.11 Advanced Analytics Programming, 373.17 Predictive Analytics and Data Mining
Petroleum & Geosystems Engineering: 378 Applied Reservoir Characterization
Psychology: 325K Advanced Statistics
Public Health: 354 Epidemiology