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

# Certificate in Applied Statistical Modeling Course Requirements (2018–2020 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. Prerequisiting Knowledge (choose one)

**Mathematics**: 408C Calculus I, 408L Integral Calculus, 408R Calculus for Biologists, 408S Integral Calculus

## II. Mathematical Foundations of Statistics (choose one)

**Statistics & Data Sciences:** 321 Intro to Probability & Statistics

**Electrical Engineering:** 351K Probability and Random Processes

**Mathematics:** 362K Probability I

## III. Applied Statistics Course 1 (choose one)

**Statistics & Data Sciences:** 302/304/306 Data Analysis for the Health Sciences, 302F Foundations of Statistics, 320E Elements of Statistics, 328M Biostatistics

**Statistics (IROM):** 309 Elementary Business Statistics

**Economics:** 329 Economic Statistics

**Educational Psychology:** 371 Intro to Statistics

**Mathematics:** 358K Applied Statistics

**Psychology:** 418 Statistics & Research Design

**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, majors only):** 371G/H Statistics & Modeling/Honors, 375/H Statistics and Modeling for Finance/Honors

**Economics:** 341K 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 Methods, 358 Special Topics in Statistics, 374E Visualization & Data Analysis, 375 Special Topics in Scientific Computation, 378 Intro to Mathematical Statistics, 379R Undergraduate Research***

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

**Statistics (IROM):** 372.5 Financial & Econometric Time Series Modeling

**Advertising:** 344K Advertising Research

**Communication Studies:** 348 Communication Research Methods

**Computer Science:** 343 Artificial Intelligence

**Economics**: 350K.4 Advanced Econometrics, 354K Intro to Game Theory

**Electrical Engineering:** 361M Intro to Data Mining

**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

**Mathematics:** 339J Probability Models with Actuarial Applications, 349P Actuarial Statistical Estimate, 362M Introduction to Stochastic Processes, 378K Introduction to Mathematical Statistics, 375T Generalized Linear Models

**Management Information Systems:** 373.17 Data Mining for Business

**Petroleum & Geosystems Engineering:** 378 Applied Reservoir Characterization

**Psychology:** 325K Advanced Statistics

**Public Health:** 354 Epidemiology