

## Certificate in Applied Statistical Modeling Course Requirements (2024–2026 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](https://stat.utexas.edu/undergraduate/certificate-in-applied-statistical-modeling)

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### 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

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### 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

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

**Statistics & Data Sciences:** 302F Foundations of Statistics, 320E/H Elements of Statistics/Honors

**Economics:** 329 Economic Statistics

**Educational Psychology:** 371 Intro to Statistics

**Government:** 350K Statistical Analysis in Political Science

**Mathematics:** 358K Applied Statistics

**Psychology:** 420M Psychological Methods and Statistics

**Sociology:** 317L Intro to Social Statistics

**Statistics (IROM):** 301/H Introduction to Data Science/Honors

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### IV. Applied Statistics Course 2 (choose one)

**Statistics & Data Sciences** *these courses may be used to fulfill this requirement or an elective:* 322E Elements of Data Science, 323 Statistical Learning and Inference, 324E Elements of Regression Analysis

**Electrical Engineering:** 461P Data Science Principals

**Economics:** 441K Intro to Econometrics

**Mathematics:** 349R Applied Regression

**Psychology:** 325K Advanced Statistics

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### V. Electives (choose three)

Students are encouraged to select courses within their own majors or colleges as appropriate. *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, 324E Elements of Regression 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.*

**Advertising:** 344K Advertising Research

**Communication Studies:** 348 Communication Research Methods

**Computer Science:** 342 Neural Networks, 343 Artificial Intelligence, 363D Introduction to Data Mining, 363M Principals of Machine Learning I, 371N Natural Language Processing, 371R Info Retrieval and Web Search

**Economics:** 342L Advanced Econometrics, 343K Causal Inference, 348K Time Series Econometrics, 353M Empirical Public Economics, 354K Game Theory

**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

**Public Health:** 354 Epidemiology

**Statistics (IROM):** 235/H Data Science for Business Applications/Honors, 372.5 Financial & Econometric Time Series Modeling, 372.9 Time Series Forecasting