Policies & Procedures

- Total of 18 hours (six courses in sections II. – V. below) must be completed with a grade of C- or higher.
- No transfer credit or credit-by-exam may be used to fulfill certificate course requirements (except for prerequisite).
- Not all courses listed in this document are offered every semester. See UT course schedule for available class offerings.
- See SDS website for information on how to enroll and for more details about course and research project requirements: stat.utexas.edu/undergraduate/certificate-in-scientific-computation

I. Prerequisite Knowledge (Choose One)

Mathematics: 408D Differential & Integral Calculus, 408M Multivariable Calculus

II. Core Requirements

A. Computer Programming (Choose One)

Aerospace Engineering: 301 Intro to Computer Programming

Biomedical Engineering: 303 Intro to Computing

Computer Science: 313E Elements of Software Design

Electrical Engineering: 312 Software Design & Implementation

Geological Sciences: 325J Programming in FORTRAN & MATLAB

Statistics & Data Sciences: 322 Intro to Scientific Programming

B. Mathematics (Choose One)


Statistics & Data Sciences: 329C Practical Linear Algebra I

III. Scientific Computing Courses

(Choose Two Categories & Take One Course in Each)

A. Numerical Methods

Aerospace Engineering: 211K Engineering Computation

Civil Engineering: 379K Computer Methods for Civil Eng

Chemical Engineering: 348 Numerical Methods in Chemical Engineering


Mathematics: 348 Scientific Computation in Numerical Analysis, 368K Numerical Methods for Applications

Statistics & Data Sciences: 335 Scientific & Technical Computing

B. Statistical Methods

Biomedical Engineering: 335 Engineering, Probability, & Statistics

Economics: 329 Economic Statistics

Electrical Engineering: 351K Probability & Random Processes


Mechanical Engineering: 335 Engineering Statistics

Statistics & Data Sciences: 325H Honor Statistics, 320E Elements of Statistics, 328M Biostatistics

C. Other Computing Topics

Computer Science: 324E Elements of Graphics & Visualization, 327E Elements of Databases, 329E Topics in Elements of Computing*, 377 Principles & Applications of Parallel Programming


Mechanical Engineering: 367S Simulation Modeling

Management Information Systems: 325 Database Management

Neuroscience: 366M Quantitative Methods

Statistics & Data Sciences: 329D Practical Linear Algebra II, 374C Parallel Computing, 374D Distributed & Grid Computing for Sci. & Engineers, 374E Visualization & Data Analysis

*Topics courses must be approved by the faculty committee. See SDS website for details on approval process.

Continued on next page ...
IV. APPLIED COMPUTING COURSES

(choose one)

**Aerospace Engineering**: 347 Intro to Computational Fluid Dynamics

**Biology**: 321G Intro to Computational Bio, 377J Computational Biology Lab

**Computer Science**: 329E Topics in Elements of Computing*

**Chemistry**: 368 Advanced Topics in Chemistry

**Biomedical Engineering**: 341 Engineering Tools for Computational Genomics Lab, 342 Computational Biomechanics, 346 Computational Structural Biology, 377T Topics in Biomedical Engineering*

**Economics**: 363C Computational Economics

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

**Finance/Statistics (IROM)**: 372.6/372 Optimization Methods in Finance

**Geological Sciences**: 325K Computational Methods in Geological Sciences

**Mathematics**: 375T Topics in Mathematics*, 374M Mathematical Modeling in Science & Engineering

**Physics**: 329 Introduction to Computational Physics

**Statistics & Data Sciences**: 322E Elements of Data Science, 348 Computation Biology & Bioinformatics

V. RESEARCH PROJECT

(one course to reach 18 total hours for certificate)

**Statistics & Data Sciences**: 379R, 479R Undergraduate Research

Work with a faculty supervisor on an original research project that is presented in a research paper. Topics must be approved by SDS Faculty Committee prior to enrollment. Students are responsible for finding their own faculty supervisor. See our website for more information.

*Topics courses must be approved by the faculty committee. See SDS website for details on approval process.*