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

Certificate in Scientific Computation Course Progression Worksheet 2024–2026 Catalog

ADMISSION REQUIREMENTS

Course(s) Fulfilled

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

Computational Engineering:
301 Intro to Computer Programming
322 Scientific Computing

Computer Science:
303E Elements of Computers & Programming
313E Elements of Software Design

Electrical and Computer Engineering:
312 Software Design & Implementation
312H Software Design & Implementation Honors

Geological Sciences:
325J Programming in FORTRAN & MATLAB

Statistics & Data Sciences:
322 Intro to Scientific Programming

B. Mathematics (choose one)

Mathematics:
340L Matrices & Matrix Calculations
341 Linear Algebra & Matrix Theory
372K Partial Differential Equations & Applications

Statistics & Data Sciences:
329C Practical Linear Algebra I

III. SCIENTIFIC COMPUTING COURSES

(Choose two categories & take one course in each)

A. Numerical Methods

Biomedical Engineering:
313L Intro to Numerical Methods

Chemical Engineering:
348 Numerical Methods in Chemical Engineering

Computational Engineering:
311K Engineering Computing

Computer Science:
323E Elements of Scientific Computing
323H Scientific Computing-Honors
367 Numerical Methods

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

Petroleum & Geosystems Engineering:
310 Formulation & Solution of Geosystems Engineering Problems

Statistics & Data Sciences:
335 Scientific & Technical Computing

B. Statistical Methods

Biomedical Engineering:
335 Engineering, Probability, & Statistics

Economics:
329 Economic Statistics

Electrical and Computer Engineering:
351K Probability & Random Processes

Mathematics:
358K Applied Statistics
378K Intro to Mathematical Statistics

Mechanical Engineering:
335 Engineering Statistics

Statistics & Data Sciences:
325H Honor Statistics
320E Elements of Statistics

C. Other Computing Topics

Biomedical Engineering:
350 Computational Methods for Biomeical Engineers

Chemistry:
354M Intro to Computational Methods in Chemistry

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

Mathematics:
346 Applied Linear Algebra
362M Introduction to Stochastic Processes
368K Numerical Methods for Applications
372K Partial Differential Equations and Applications
375T Topics in Mathematics (Approved topics)
376C Methods of Applied Mathematics

Course(s) Fulfilled

Continued on reverse side

Certificate in Scientific Computation Course Progression Worksheet 2024–2026 Catalog *(Continued)*

Course(s) Fulfilled

Mechanical Engineering:
367S Simulation Modeling

Management Information Systems:
325 Database Management

Neuroscience:
366M Quantitative Methods

Statistics & Data Sciences:
374C Parallel Computing
374E Visualization & Data Analysis

IV. APPLIED COMPUTING COURSES

(choose one)

Biochemistry:
339N Systems Biology & Bioinformatics

Integrative Biology:
321G Intro to Computational Bio

Computer Science:
324E Elements of Graphics & Visualization
329E Topics in Elements of Computing*

Chemistry:
368 Advanced Topics in Chemistry

Biomedical Engineering:
342 Computational Biomechanics,
346 Computational Structural Biology,
377T Topics in Biomedical Engineering*

Computational Engineering:
347 Introduction to Computational Fluid Dynamics

Economics:
363C Computational Economics

Electrical and Computer Engineering:
379K Topics in Electrical Engineering*

Finance/Statistics:
(IROM) 372T.16 Optimization Methods in Finance

Geological Sciences:
325K Computational Methods in Geological Sciences

Course(s) Fulfilled

Linguistics:
350 Special Topics in the Study of Linguistics*

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

Physics:
329 Introduction to Computational Physics

Statistics and Data Sciences:
322E Elements of Data Science

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

V. RESEARCH PROJECT

Statistics & Data Sciences: 3/479R

Undergraduate Research

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

POLICIES & PROCEDURES

- Return applications to GDC, Campus Mail Code: D9800
- Total of 18 hours required
- All coursework must be completed with a grade of C- or higher
- Please visit the certificate website for more detailed information on course options & policies
- stat.utexas.edu/undergraduate/certificate-in-scientific-computation