ADMISSION REQUIREMENTS

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)

Mathematics: 427K Advanced Calculus for Applications
340L Matrices & Matrix Calculations
341 Linear Algebra & Matrix Theory
362M Introduction to Stochastic Processes
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 Engineering
Chemical Engineering: 348 Numerical Methods in Chemical Engineering
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
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
Mathematics: 358K Applied Statistics
378K Intro to Mathematical Statistics
Mechanical Engineering: 335 Engineering Statistics
Statistics & Data Sciences: 325H Honor 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
Mathematics: 346 Applied Linear Algebra
362M Introduction to Stochastic Processes
368K Numerical Methods for Applications
372K PDE & Applications, 376C Methods of Applied Mathematics
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

Certificate in Scientific Computation Course Progression Worksheet 2016–2018 Catalog

 Continued on reverse side
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

V. RESEARCH PROJECT

**Statistics & Data Sciences:** 2/3/479R

Undergraduate Research

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