## 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
- **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
  - 372K PDE & Applications
- **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

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*Certificate in Scientific Computation Course Progression Worksheet 2018–2020 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

Statistics and Data Sciences:
348 Computation Biology & Bioinformatics

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