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
- Computational Engineering:
  - 301 Intro to Computer Programming
  - 322 Scientific Computing
- Computer Science:
  - 303E Elements of Computers & Programming
  - 313E Elements of Software Design
- Electrical Engineering:
  - 312 Software Design & Implementation
  - 312H Software Design & Implementation Honors
- Geological Sciences:
  - 325J Programming in FORTRAN & MATLAB
- Statistics & Data Sciences:
  - 322 Intro to Scientific Computing

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 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
  - 328M Biostatistics

C. Other Computing Topics
- **Biomedical Engineering:**
  - 350 Computational Methods for Biomedical 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
  - 376C Methods of Applied Mathematics
- **Mechanical Engineering:**
  - 367S Simulation Modeling
- **Management Information Systems:**
  - 325 Database Management

Continued on reverse side
### IV. APPLIED COMPUTING COURSES

(choose one)

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

**Biochemistry:**
- 339N Systems Biology & Bioinformatics

**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 Engineering:**
- 379K Topics in Electrical Engineering*

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

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

**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
- 348 Computation Biology & Bioinformatics

*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