



# South Dakota State University

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## SDSU Math/Stat Department Undergraduate Computational Science Concentration

Students interested in a career in computational science are strongly encouraged to pursue the following program.

### 1. Core MATH/STAT coursework (required of all Mathematics Majors)

MATH 123 Calculus I	MATH 198 The Mathematics Profession	MATH 253 Logic and Sets
MATH 125 Calculus II	MATH 215 Matrix Algebra	MATH 413 Abstract Algebra I
MATH 225 Calculus III	MATH 315 Linear Algebra	MATH 425 Real Analysis I
MATH 321 Differential Equations	STAT 381 Intro to Probability and Statistics	MATH 401 Senior Capstone

### 2. Recommended MATH/STAT coursework

- **Computational Mathematics**
  - MATH 374 Scientific Computation I
  - MATH 456 Scientific Computation II
  - MATH 471 Numerical Analysis I
- **Other Applied Mathematics**
  - MATH 331 Advanced Engineering Math
  - MATH 431 Partial Differential Equations
  - MATH 441 Applied Probability Theory
- **Statistics**
  - STAT 482 Statistics for Physical Science

### 3. Other recommended coursework

- **Computer Science**
  - CSC 218 Intro. To C/C++/Unix for Engineers (substitute for CSC 150 Intro. To Programming)
  - CSC 392 Parallel Programming
- **Discipline Area Courses**
  - Take courses in one or more fields in which you're interested in applying computational techniques.
  - Examples: Physics, Chemistry, Biology/Microbiology, Engineering, Economics, Statistics
  - Speak to an advisor to tailor a set of courses appropriate for you and your interests.

### 4. Other recommendations

- Consider computational science-related internships or work experience.
- Consider a computational science-related Senior Research Project.