



# South Dakota State University

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## SDSU Math/Stat Department Undergraduate Financial Engineering Concentration

Students interested in a career in financial engineering 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

- **Mathematics**
  - MATH 440 Mathematics of Finance
  - MATH 441 Applied Probability Theory
- **Statistics**
  - STAT 445 Nonparametric Statistics
  - STAT 460 Time Series Analysis
  - STAT 482 Statistics for Physical Science
  - STAT 492 Predictive Analytics I
  - STAT 492 Predictive Analytics II
- **Software Tools**
  - CSC 150 Introduction to Programming (included in BS Math required curriculum)
  - STAT 410 Programming Using SAS

### 3. ECON/ACCT/BADM coursework to consider

ECON 201 Principles of Microeconomics	ACCT 210 Principles of Accounting I
ECON 202 Principles of Macroeconomics	ACCT 211 Principles of Accounting II
ECON 301 Intermediate Microeconomics	BADM 310 Business Finance
ECON 330 Money and Banking	BADM 411 Investments
ECON 428 Mathematical Economics	BADM 412 Security Analysis

### 4. Other recommendations

- Consider finance-related internships or work experience.
- Consider a quantitative finance-related Senior Research Project.

### 5. Additional credentials available to students who pursue this track:

- STAT 410 and 412 prepare students to take the SAS certification exam.
- STAT 381 and MATH 441 prepare students to take the first SOA exam, Exam P – Probability.
- MATH 440 prepares students to take the second SOA exam, Exam FM – Financial Mathematics.
- ECON 201 and ECON 202 qualify students for SOA VEE-Economics credit.
- STAT 460 and STAT 482 qualify students for SOA VEE-Applied Statistical Methods credit.
- Consider an Economics Minor