

## MATHEMATICS DEPARTMENT

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### Program Description

The Dixie State College Mathematics Department helps students to achieve their academic, career, and life goals, including those related to basic computational skills, mathematical processes, and knowledge that develops real-life applications, modeling, and problem solving. The Department's comprehensive and integrated offerings help students master mathematical competencies for future career and educational endeavors.

As part of an open-door admissions institution, the Department offers a broad spectrum of Mathematics classes that are useful for skill levels from developmental to selected four-year degree requirements.

The Mathematics faculty is dedicated to providing opportunities that promote student success.

Students may enroll in the Bachelor of Science Mathematics degree or the Bachelor of Science in Mathematics Education degree. In addition, students can select Mathematics as an emphasis in the Integrated Studies Bachelor of Art or Bachelor of Science programs. The DSC Mathematics Department also offers all coursework necessary to obtain a Utah Secondary Education Math Endorsement. The Utah State Office of Education Educator Quality & Licensing information for Secondary Mathematics Endorsements can be found here: <http://www.schools.utah.gov/cert/Endorsements/endmath.htm>.

### Course Prefixes:

- MATH

### Degrees & Certificates

- Bachelor of Science in Mathematics
- Bachelor of Sciences in Mathematics Education
- Secondary Education Mathematics Endorsement courses

## Bachelor of Science in Mathematics

120 credits

A Bachelor of Science in Mathematics degree has four basic components:

1. General Education & Institutional Requirements
2. Mathematics Core Requirements
3. Mathematics Required Electives
4. Mathematics Program Requirements

### General Education & Institutional Requirements

All DSC General Education and Institutional requirements must be fulfilled. A previously earned degree **may** fulfill those requirements, but courses must be equivalent to DSC's minimum General Education standards in American Institutions, English, and Mathematics.

### Institutional Requirement

Complete **one** of the following:

CIS 1200	Computer Literacy	3
CIS 1201	Computer Literacy Exam	0

### General Education Requirements

Complete the following:

ENGL 1010	Intro to Writing	3
ENGL 2010	Intermediate Writing	3
LIB 1010	Information Literacy	1

Complete the following:

Mathematics GE course	3-5
American Institutions GE course	3
Life Sciences GE course	3-5
Physical Science GE course	3-5
Laboratory Science GE course	0-1
Fine Arts GE course	3
Literature / Humanities GE course	3
Social & Behavioral Sciences GE course	3
Exploration GE course	3-5
Two (2) Global & Cultural Perspectives Courses	0-6

### Core Discipline Requirements

Complete the following:

MATH 1210	Calculus I	5
MATH 1220	Calculus II	4
MATH 2200	Discrete Mathematics	3
MATH 2210	Multivariable Calculus	3
MATH 2270	Linear Algebra	3
MATH 2280	Ordinary Differential Equations	3
MATH 3200	Introduction to Analysis I	3
MATH 3400	Probability & Statistics	3
MATH 3900	Number Theory	3
MATH 4000	Foundations of Algebra	3
MATH 4900	Senior Capstone Seminar	3

### Mathematics Required Electives

Complete **12 credits** from the following:

MATH 3000	History of Mathematics	3
MATH 3100	Euclidean / Non-Euclidean Geometry	3
MATH 3210	Introduction to Analysis II	3
MATH 3500	Numerical Analysis	3
MATH 4010	Abstract Algebra	3
MATH 4100	Introduction to Topology	3
MATH 4200	Complex Analysis	3

### Mathematics Program Requirements

Complete the following:

CS 1400	Fundamentals of Programming	3
PHYS 2210/15	Physics for Scientists/Engineers I / Lab	4/1
PHYS 2220/25	Physics for Scientists/Engineers II / Lab	4/1

### Graduation Requirements

1. Complete a minimum of 120 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at DSC for institutional residency
4. Grade C or higher (not C-) required in each Core Discipline Requirement, Mathematics Required Elective, and Mathematics Program Requirement course.
5. Cumulative GPA 2.0 or higher

## Bachelor of Science in Mathematics Education

124 credits

Bachelor of Science in Mathematics Education degree has four basic components:

1. General Education & Institutional Requirements
2. Mathematics Core Requirements
3. Mathematics Program Requirements
4. Secondary Education pre-professional and professional courses

### General Education & Institutional Requirements

All DSC General Education and Institutional requirements must be fulfilled. A previously earned degree **may** fulfill those requirements, but courses must be equivalent to DSC's minimum General Education standards in American Institutions, English, and Mathematics.

### Institutional Requirement

Complete **one** of the following:

CIS 1200	Computer Literacy	3
CIS 1201	Computer Literacy Exam	0

### General Education Requirements

Complete the following:

ENGL 1010	Intro to Writing	3
ENGL 2010	Intermediate Writing	3
LIB 1010	Information Literacy	1

Complete the following:

Mathematics GE course	3-5
Life Sciences GE course	3-5

Physical Science GE course	3-5
Laboratory Science GE course	0-1
Fine Arts GE course	3
Literature / Humanities GE course	3
Exploration GE course	3-5
Two (2) Global & Cultural Perspectives Courses	0-6

Complete **one** of the following American Institutions GE courses (SET requirement):

HIST 1700	American Civilization	3
POLS 1100	American Government	3

Complete **one** of the following Social & Behavioral Sciences GE courses (SET requirement):

FCS 1500	Human Development / Lifespan	3
PSY 1010	General Psychology	3
PSY 1100	Human Development / Lifespan	3

### Core Discipline Requirements

Complete the following:

MATH 1040	Introduction to Statistics	3
MATH 1210	Calculus I	5
MATH 1220	Calculus II	4
MATH 2200	Discrete Mathematics	3
MATH 2210	Multivariable Calculus	3
MATH 2270	Linear Algebra	3
MATH 2280	Ordinary Differential Equations	3
MATH 3000	History of Math	3
MATH 3100	Euclidean/Non-Euclidean Geometry	3
MATH 3200	Introduction to Analysis I	3
MATH 3400	Probability & Statistics	3
MATH 3900	Number Theory	3
MATH 4000	Foundations of Algebra	3

### Mathematics Program Requirements

Complete the following:

CS 1400	Fundamentals of Programming	3
PHYS 2210/15	Physics for Scientists/Engineers I / Lab	4/1

### Secondary Education Pre-Professional Courses

Complete the following pre-professional courses:

EDUC 1010	Foundations/Intro to Education	3
EDUC 2010	Intro Teaching Exceptional Learners	3
EDUC 2400	Foundations of Multicultural & ESL.	3
EDUC 2500	Tech / Educ. / Electronic Portfolio	3
EDUC 3110	Educational Psychology	3

### Secondary Education Teaching (SET) Program Admission

To be admitted to the SET program and enroll in Professional courses, students must have completed all Pre-Professional Education class with 3.0 or higher GPA with no D credit and students must pass the appropriate PRAXIS II content area subject test(s). In addition, one of the following must be completed:

- Students with BA/BS degrees in progress must have completed at least 95% of major coursework and have approval of major academic content area department advisor
- Students with completed BA/BS or higher degrees must have their transcripts reviewed by content area department advisor

### Secondary Education Professional Requirements

#### Semester I

Complete the following:

SCED 3720	Reading / Writing in Content Areas	3
SCED 4100	Curriculum, Instruction, Assessment	3
SCED 4600	Classroom Management	3
MATH 4500	Methods of Teach Secondary Math	3

#### Semester II

Complete the following:

SCED 4900	Secondary Student Teaching	10
SCED 4989	Student Teacher Seminar	2

### Graduation Requirements

1. Complete a minimum of 124 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at DSC for institutional residency.
4. Cumulative GPA 2.75 or higher.
5. Grade C or higher required (not C-) in each Mathematics Core Requirement and Program requirement course.
6. Grade C- or higher in each pre-professional and professional Education and Secondary Education course and 3.0 GPA in pre-professional and professional courses required.

**Suggested Courses Leading to Utah Mathematics Endorsements**

**Level II**

MATH 1040	Introduction to Statistics	3.0
MATH 1050	College Algebra / Pre-Calculus	4.0
MATH 1060	Trigonometry	3.0
MATH 1210	Calculus I	5.0
MATH 2010	Math Elementary Teaching I	3.0
MATH 2020	Math Elementary Teaching II	3.0
MATH 4500	Methods of Teaching Secondary Math	3.0

**Level III**

MATH 1050	College Algebra / Pre-Calculus	4.0
MATH 1060	Trigonometry	3.0
MATH 1210	Calculus I	5.0
MATH 1220	Calculus II	4.0
MATH 2270	Linear Algebra	3.0
MATH 3100	Euclidean/Non-Euclidean Geometry	3.0
MATH 3400	Probability & Statistics	3.0
MATH 4000	Foundations of Algebra	3.0
MATH 4500	Methods of Teaching Secondary Math	3.0

**Level IV**

MATH 1050	College Algebra / Pre-Calculus	4.0
MATH 1060	Trigonometry	3.0
MATH 1210	Calculus I	5.0
MATH 1220	Calculus II	4.0
MATH 2210	Multivariable Calculus	3.0
MATH 2270	Linear Algebra	3.0
MATH 2280	Ordinary Differential Equations	3.0
MATH 3000	History of Math	3.0
MATH 3100	Euclidean/Non-Euclidean Geometry	3.0
MATH 3200	Introduction to Analysis I	3.0
MATH 3400	Probability & Statistics	3.0
MATH 4000	Foundations of Algebra	3.0
MATH 4500	Methods of Teaching Secondary Math	3.0