## Bachelor of Arts in Mathematics

The Bachelor of Arts degree program in Mathematics is designed for the student who, upon graduation, will begin a career involving mathematics or plans to pursue graduate studies in mathematics, and is interested in augmenting their foundational mathematics curriculum with a minor in another field or studies in other subjects.

The B.A. in Mathematics requires a total of 55-58 units of coursework; of those, up to 6 units may be selected from courses that count towards the University's General Education requirements in categories A3 and B4, and one course (MATH 3100) counts toward the upper-division writing intensive requirement.

Students pursuing a career in education are strongly encouraged to consult a faculty advisor when selecting their elective coursework (Math 3345, Math 3460, Math 2900, and Math 4900 should be included).

## Requirements (55-58 units)

Total units required for graduation: 120
Requirements for the B.A. in Mathematics

| (Program Code: MATH) |  |  |
| :--- | :--- | ---: |
| Lower-division requirements (25-26) |  |  |
| MATH 2210 | Calculus I | 4 |
| MATH 2220 | Calculus II | 4 |
| MATH 2265 | Statistics with Applications | 3 |
| MATH 2270 | Differential Equations with Dynamical | 3 |
|  | Systems I |  |
| MATH 2310 | Applied Linear Algebra | 4 |
| MATH 2320 | Multivariable Calculus | 4 |
| Select one of the following CSE courses: | $3-4$ |  |


| CSE 1100 | Critical Thinking Through Computer <br> Programming |
| :--- | :--- |
| CSE 1250 | Programming Basics |
| CSE 2010 | Computer Science I |


| Upper-division requirements (15) |  |  |
| :--- | :--- | ---: |
| MATH 3100 | Mathematical Thinking: Communication <br> and Proof | 4 |
| MATH 3329 | Euclidean Geometry with | 3 |
|  | Transformations |  |
| MATH 4300 | Real Analysis | 4 |
| MATH 4600 | Theory of Rings and Fields | 4 |

Note: MATH 3100 satisfies the GE upper-division Writing Intensive (WI) requirement.

## Electives (15-17)

Five courses (15-17 units) selected from the following with at least one course from each of Group A, Group B, and Group C. At least two of the five elective courses must be at the 4000-level or above.

## Group A:

MATH $3345 \quad$ Number Theory

MATH 3372 Combinatorics

| MATH 3770 | Introduction to Graph Theory |
| :---: | :---: |
| Group B: |  |
| MATH 3320 | Mathematical Interest Theory |
| MATH 3460 | Probability Theory |
| MATH 4270 | Differential Equations with Dynamical Systems II |
| MATH 4455 | Partial Differential Equations \& Fourier Analysis |
| Group C: |  |
| MATH 4485 | Differential Geometry |
| MATH 5170 | Complex Analysis |
| MATH 5310 | Advanced Linear Algebra |
| MATH 5529 | Advanced Topics in Geometry |
| MATH 5550 | Introduction to Topology |
| Group D: |  |
| MATH 2900 | Problem Solving and Mathematical Reasoning for Teachers I |
| MATH 4900 | Problem Solving and Mathematical Reasoning for Teachers II |
| MATH 3480 | Topics in History of Mathematics |
| MATH 4320 | Introduction to Actuarial Modeling |
| MATH 4360 | Linear Statistical Models |
| MATH 5510 | Topics in Advanced Mathematics |
| MATH 5300 | Advanced Real Analysis |
| MATH 5565 | Mathematical Statistics |
| MATH 5600 | Group Theory |
| MATH 5953 | Independent Study |
| PHIL 3560 | Philosophy of Logic and Mathematics |

