Bachelor of Arts in Mathematics

The department offers undergraduate preparation for positions in government, business, and industry and for graduate work in mathematics and statistics. Each student’s major program is individually constructed in consultation with an advisor.

To qualify for a bachelor’s degree with a major in mathematics, a student must satisfy the requirements for one of three options: the standard track, pure mathematics, or secondary teaching. In each option, most courses require calculus as a prerequisite, and in each option some of the courses require satisfying the bridge requirement.

Bachelor of Arts: Standard Track

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MATH 253</td>
<td>Calculus III</td>
<td>4</td>
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<tr>
<td>MATH 281–282</td>
<td>Several-Variable Calculus I-II</td>
<td>8</td>
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<td>MATH 341–342</td>
<td>Elementary Linear Algebra</td>
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<tr>
<td>CIS 122</td>
<td>Introduction to Programming and Problem Solving (or another programming course approved by advisor)</td>
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Select one of the following sets of Bridge courses: 12

- MATH 231–232 and two of MATH 201–206
- MATH 261–262 and two of MATH 201–206
- MATH 307 and four of MATH 201–206

Select one of the following Fundamentals sequences: 8

- MATH 316–317 | Fundamentals of Analysis I-II                         |
- MATH 347–348 | Fundamentals of Number Theory I-II                    |
- MATH 391–392 | Fundamentals of Abstract Algebra I-II                 |

Select four of the following, including at least one two-term sequence: 16

- MATH 316 | Fundamentals of Analysis I                             |
- MATH 317 | Fundamentals of Analysis II                            |
- MATH 320 | Theory of Differential Equations                       |
- MATH 343 | Statistical Models and Methods                           |
- MATH 347 | Fundamentals of Number Theory I                        |
- MATH 348 | Fundamentals of Number Theory II                       |
- MATH 351 | Elementary Numerical Analysis I                        |
- MATH 352 | Elementary Numerical Analysis II                       |
- MATH 391 | Fundamentals of Abstract Algebra I                     |
- MATH 392 | Fundamentals of Abstract Algebra II                    |
- MATH 394 | Geometries from an Advanced Viewpoint I                |
- MATH 395 | Geometries from an Advanced Viewpoint II               |
- MATH 397 | History and Applications of Calculus                   |
- MATH 411 | Functions of a Complex Variable I                      |
- MATH 412 | Functions of a Complex Variable II                     |
- MATH 413 | Introduction to Analysis I                             |
- MATH 414 | Introduction to Analysis II                            |
- MATH 415 | Introduction to Analysis III                           |
- MATH 421M | Partial Differential Equations: Fourier Analysis I     |
- MATH 422 | Partial Differential Equations: Fourier Analysis II    |
- MATH 431 | Introduction to Topology                               |
- MATH 432 | Introduction to Topology                               |
- MATH 433 | Introduction to Differential Geometry                  |
- MATH 441 | Linear Algebra                                         |
- MATH 444 | Introduction to Abstract Algebra I                     |
- MATH 445 | Introduction to Abstract Algebra II                    |
- MATH 446 | Introduction to Abstract Algebra III                   |
- MATH 456 | Networks and Combinatorics                             |
- MATH 457 | Discrete Dynamical Systems                             |
- MATH 458 | Introduction to Mathematical Cryptography              |
- MATH 461 | Introduction to Mathematical Methods of Statistics I   |
- MATH 462 | Introduction to Mathematical Methods of Statistics II  |
- MATH 463 | Mathematical Methods of Regression Analysis and Analysis of Variance |
- MATH 467 | Stochastic Processes                                   |

Total Credits 60

1 For students who have completed Calculus with Theory I-III (MATH 261–263) with a grade of mid-C or better, the department will waive the requirement for Fundamentals of Analysis I-II (MATH 316–317).

2 Sequences include MATH 316-317, 347-348, 351-352, 391-392, 394-395, 411-412, 421M-422, 413-415, 431-432, 444-446, 461-462, 461-467; credit for these courses cannot count for both the two-term Fundamentals sequence and the four upper-division electives.

3 Students cannot receive credit for both Statistical Models and Methods (MATH 343) and Introduction to Mathematical Methods of Statistics II (MATH 462).

Bachelor of Arts: Pure Mathematics

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Select one of the following sets of Bridge courses: 12

- MATH 231–232 and two of MATH 201–206
- MATH 261–262 and two of MATH 201–206
- MATH 307 and four of MATH 201–206

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- MATH 231–232 and two of MATH 201–206
- MATH 261–262 and two of MATH 201–206
- MATH 307 and four of MATH 201–206
Bachelor of Arts in Mathematics

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<td>MATH 307</td>
<td>Introduction to Proof (and four from MATH 201–206)</td>
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Select one of the following Abstract Algebra sequences: 8

- MATH 391–392  
  Fundamentals of Abstract Algebra I-II
- MATH 444–445  
  Introduction to Abstract Algebra I-II

Select two of the following: 2 8

- MATH 320  
  Theory of Differential Equations
- MATH 343  
  Statistical Models and Methods
- MATH 347  
  Elementary Linear Algebra
- MATH 348  
  Fundamentals of Number Theory II
- MATH 351  
  Elementary Numerical Analysis I
- MATH 352  
  Elementary Numerical Analysis II
- MATH 391  
  Fundamentals of Abstract Algebra I
- MATH 392  
  Fundamentals of Abstract Algebra II
- MATH 394  
  Geometries from an Advanced Viewpoint I
- MATH 395  
  Geometries from an Advanced Viewpoint II
- MATH 397  
  History and Applications of Calculus
- MATH 411  
  Functions of a Complex Variable I
- MATH 412  
  Functions of a Complex Variable II
- MATH 413  
  Introduction to Analysis I
- MATH 414  
  Introduction to Analysis II
- MATH 415  
  Introduction to Analysis III
- MATH 421M  
  Partial Differential Equations: Fourier Analysis I
- MATH 422  
  Partial Differential Equations: Fourier Analysis II
- MATH 431  
  Introduction to Topology
- MATH 432  
  Introduction to Topology
- MATH 433  
  Introduction to Differential Geometry
- MATH 441  
  Linear Algebra
- MATH 444  
  Introduction to Abstract Algebra I
- MATH 445  
  Introduction to Abstract Algebra II
- MATH 446  
  Introduction to Abstract Algebra III
- MATH 461  
  Introduction to Mathematical Methods of Statistics I
- MATH 462  
  Introduction to Mathematical Methods of Statistics II
- MATH 463  
  Mathematical Methods of Regression Analysis and Analysis of Variance
- MATH 467  
  Stochastic Processes

Total Credits 60

1. For students who have completed Calculus with Theory I-III (MATH 261–263) with grades of mid-C or better, the department will waive the requirement for Fundamentals of Analysis I-II (MATH 316–317).

2. The two-term abstract algebra sequence—Introduction to Abstract Algebra I (MATH 444), Introduction to Abstract Algebra II (MATH 445)—cannot also count toward the two upper-division electives.

3. Students cannot receive credit for both Statistical Models and Methods (MATH 343) and Introduction to Mathematical Methods of Statistics II (MATH 462).

Bachelor of Arts: Secondary Teaching

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Select one of the following sets of Bridge courses: 12

- MATH 231–232  
  Elements of Discrete Mathematics I-II (and two from MATH 201–206)
- MATH 261–262  
  Calculus with Theory I-II (and two from MATH 201–206)
- MATH 307  
  Introduction to Proof (and from from MATH 201–206)

Select two of the following Fundamentals sequences: 1 16

- MATH 316–317  
  Fundamentals of Analysis I-II
- MATH 347–348  
  Fundamentals of Number Theory I-II
- MATH 391–392  
  Fundamentals of Abstract Algebra I-II
- MATH 394–395  
  Geometries from an Advanced Viewpoint I-II
- MATH 397  
  History and Applications of Calculus

Total Credits 60

1. For students who have completed Calculus with Theory I-III (MATH 261–263) with grades of mid-C or better, the department will waive the requirement for Fundamentals of Analysis I-II (MATH 316–317).