Mathematics

The mathematics major consists of a wide variety of mathematics courses that prepare students for opportunities in the workforce as well as the potential for continued graduate study in mathematics, economics, and operations research.

Major Requirements

Major: Mathematics

Degree Type: B.A. or B.S.
Minimum Degree Credits to Graduate: 122

General Education Requirements for Baccalaureate Degree

- A dynamic list of approved general education courses offered by term is available on the NDSU General Education Requirements (https://www.ndsu.edu/registrar/academics/gened) website.
- General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review the major, minor, and program emphases requirements for minimum grade restrictions, if applicable.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIV 189</td>
<td>Skills For Academic Success (Also offered with the following prefixes: ABEN, AGRI, BUSN, HD&amp;E, ME, NURS, PHRM)</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>1</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>1</td>
</tr>
</tbody>
</table>

Quantitative Reasoning (R) †

Science and Technology (S) †

Humanities and Fine Arts (A) †

Social and Behavioral Sciences (B) †

Wellness (W) †

Cultural Diversity (D) ††

Global Perspectives (G) ††

Total Credits: 40

- May be satisfied by completing courses in another General Education category.
- May be satisfied with courses required in the major. Review major requirements to determine if a specific upper division writing course is required.

College Requirements

Bachelor of Arts (BA) Degree – An additional 12 credits Humanities and Social Sciences and proficiency at the second year level in a modern foreign language.

Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences.

- Humanities and Social Sciences may be fulfilled by any course having the following prefix: ADHM, ANTH, ARCH, ART, CJ, CLAS, COMM, ECON, ENGL, FREN, GEOG, GERM, HDFS, HIST, LA, LANG, MUSC, PHIL, POLS, PSYC, RELS, SOC, SPAN, THEA, WGS, or any course from the approved list of general education courses in humanities and social sciences (general education categories A and B). These credits must come from outside the department of the student’s major.

Major Requirements

A grade of ‘C’ or better is required in all MATH prefix courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 129</td>
<td>Basic Linear Algebra</td>
<td>3</td>
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</tbody>
</table>
Mathematics

MATH 165  Calculus I (includes)  4
MATH 166  Calculus II  4
MATH 265  Calculus III  4
MATH 266  Introduction to Differential Equations  3
MATH 270  Introduction to Abstract Mathematics  3
MATH 329  Intermediate Linear Algebra  3
MATH 346  Metric Space Topology  3
MATH 420  Abstract Algebra I  3
MATH 450  Real Analysis I  3
MATH 452  Complex Analysis  3
MATH 483  Partial Differential Equations  3
MATH 491  Seminar  2
Mathematics Electives  16
MATH prefix courses numbered 300 or higher, not including those listed above.

Related Required Courses
A minor or second major in any other program or 15 credits of coursework that includes at least two 300-level (or higher) courses in another discipline.  15

Total Credits  72

Program Notes
• Except for courses offered only as pass/fail grading, no course may be taken Pass/Fail.

Minor Requirements

Mathematics Minor

Minor Requirements

Required Credits: 21

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 165</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 166</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 265</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 266</td>
<td>Introduction to Differential Equations</td>
<td></td>
</tr>
<tr>
<td>Mathematics Concentration: Select one from the following:</td>
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<td></td>
</tr>
<tr>
<td>MATH 270</td>
<td>Introduction to Abstract Mathematics</td>
<td></td>
</tr>
<tr>
<td>MATH 329</td>
<td>Intermediate Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 346</td>
<td>Metric Space Topology</td>
<td></td>
</tr>
</tbody>
</table>

Electives

6 additional credits of MATH prefix courses numbered greater than or equal to 266 (at least one of which is not listed above).  6

Total Credits  21

Minor Requirements and Notes
• A minimum of 8 credits must be taken at NDSU.
• A grade of ‘C’ or better is required in all courses used toward this minor.