

# Mathematics and Statistics

## Department Information

- **Department Location:**  
Minard Hall or Morrill Hall
- **Department Phone:**  
701-231-8171
- **Department Web Site:**  
[www.ndsu.edu/math/](http://www.ndsu.edu/math/) or [www.ndsu.edu/statistics/](http://www.ndsu.edu/statistics/)
- **Credential Offered:**  
B.S.; B.A.
- **Plan Of Study Sample:**  
[bulletin.ndsu.edu/programs-study/undergraduate/mathematics-statistics/](http://bulletin.ndsu.edu/programs-study/undergraduate/mathematics-statistics/)

## Major Requirements

### Major: Mathematics & Statistics

Degree Type: B.A. or B.S.

Minimum Degree Credits to Graduate: 120

### University Degree Requirements

1. Satisfactory completion of all requirements of the curriculum in which one is enrolled.
2. Earn a minimum total of 120 credits in approved coursework. Some academic programs exceed this minimum.
3. Satisfactory completion of the general education requirements as specified by the university.
4. A minimum institutional GPA of 2.00 based on work taken at NDSU.
5. At least 36 credits presented for graduation must be in courses number 300 or higher.
6. Transfer Students: Must earn a minimum of 60 credits from a baccalaureate-degree granting or professional institution.
  - a. Of these 60, at least 36 must be NDSU residence credits as defined in #7.
  - b. Within the 36 resident credits, a minimum of 15 must be in courses numbered 300 or higher and 15 credits in the major field of study.
7. At least 36 credits must be NDSU resident credits. Residence credits include credits registered and paid for at NDSU.

For complete information, please refer to the Degree and Graduation Requirements (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/degree-and-graduation>) section of this Bulletin.

### University General Education Requirements

Code	Title	Credits
<b>Communication (C)</b>		12
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing <sup>†</sup>		
<b>Quantitative Reasoning (R) <sup>†</sup></b>		3
<b>Science and Technology (S) <sup>†</sup></b>		10
<b>Humanities and Fine Arts (A) <sup>†</sup></b>		6
<b>Social and Behavioral Sciences (B) <sup>†</sup></b>		6
<b>Wellness (W) <sup>†</sup></b>		2
<b>Cultural Diversity (D) <sup>*†</sup></b>		
<b>Global Perspectives (G) <sup>*†</sup></b>		
Total Credits		39

\* May be satisfied by completing courses in another General Education category.

† 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 major requirements to determine if specific courses can also satisfy these general education categories.

- A list of university approved general education courses and administrative policies are available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

## College Requirements

Code	Title	Credits
<b>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.*</b>		12
<b>Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences *</b>		6

- \* 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.

## Mathematics & Statistics Major Requirements

A grade of 'C' or better is required in all MATH and STAT prefix courses.

Code	Title	Credits
<b>Math Major Core Requirements</b>		
MATH 129	Basic Linear Algebra	3
MATH 165	Calculus I (May satisfy general education category R)	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 450	Real Analysis I	3
MATH 491	Seminar	2
Mathematics Electives	Any 300-400 level	3
<b>Statistics Major Requirements</b>		
STAT 330	Introductory Statistics	3
STAT 461	Applied Regression Models	3
STAT 462	Introduction to Experimental Design (Capstone)	3
STAT 467	Probability and Mathematical Statistics I	3
STAT 468	Probability and Mathematical Statistics II	3
Statistics Electives	400 level other than those listed above	18
<b>Related Required Courses:</b>		
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
Total Credits		76

## Major Requirements

### Major: Mathematics & Statistics Pre-Actuarial Option

Degree Type: B.A. or B.S.

Required Degree Credits to Graduate: 120

### University Degree Requirements

1. Satisfactory completion of all requirements of the curriculum in which one is enrolled.
2. Earn a minimum total of 120 credits in approved coursework. Some academic programs exceed this minimum.
3. Satisfactory completion of the general education requirements as specified by the university.
4. A minimum institutional GPA of 2.00 based on work taken at NDSU.
5. At least 36 credits presented for graduation must be in courses number 300 or higher.
6. Transfer Students: Must earn a minimum of 60 credits from a baccalaureate-degree granting or professional institution.

- a. Of these 60, at least 36 must be NDSU residence credits as defined in #7.
  - b. Within the 36 resident credits, a minimum of 15 must be in courses numbered 300 or higher and 15 credits in the major field of study.
7. At least 36 credits must be NDSU resident credits. Residence credits include credits registered and paid for at NDSU.

For complete information, please refer to the Degree and Graduation Requirements (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/degree-and-graduation>) section of this Bulletin.

## University General Education Requirements

Code	Title	Credits
<b>Communication (C)</b>		<b>12</b>
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing <sup>†</sup>		
<b>Quantitative Reasoning (R) <sup>†</sup></b>		<b>3</b>
<b>Science and Technology (S) <sup>†</sup></b>		<b>10</b>
<b>Humanities and Fine Arts (A) <sup>†</sup></b>		<b>6</b>
<b>Social and Behavioral Sciences (B) <sup>†</sup></b>		<b>6</b>
<b>Wellness (W) <sup>†</sup></b>		<b>2</b>
<b>Cultural Diversity (D) <sup>††</sup></b>		
<b>Global Perspectives (G) <sup>††</sup></b>		
Total Credits		39

\* May be satisfied by completing courses in another General Education category.

† 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 major requirements to determine if specific courses can also satisfy these general education categories.

- A list of university approved general education courses and administrative policies are available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

## College Requirements

Code	Title	Credits
<b>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. *</b>		<b>12</b>
<b>Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences *</b>		<b>6</b>

\* 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 for all courses used toward the major.

Code	Title	Credits
<b>Science and Mathematics College Requirements</b>		<b>6-12</b>
<b>Math Major Requirements</b>		
MATH 129	Basic Linear Algebra	3
MATH 165	Calculus I (May satisfy general education category R)	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 376	Actuarial Exam Study	1
MATH 450	Real Analysis I	3
Mathematics Elective	Any 300-400 level	3
<b>Statistics Major Requirements</b>		
STAT 330	Introductory Statistics	3
STAT 461	Applied Regression Models	3
STAT 462	Introduction to Experimental Design (Capstone)	3
STAT 467	Probability and Mathematical Statistics I	3
STAT 468	Probability and Mathematical Statistics II	3
STAT 476	Actuary Exam Study	1
Statistics Electives	Courses must be at the 400 level and not listed above	9
<b>Related Required Courses</b>		
ACCT 200	Elements of Accounting I	3
ACCT 201	Elements of Accounting II	3
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
ECON 201	Principles of Microeconomics (May satisfy general education category B and G)	3
ECON 202	Principles of Macroeconomics (May satisfy general education category B and G)	3
Electives: Select three courses from the following:		9
CSCI 453	Linear Programming and Network Flows	
CSCI 454	Operations Research	
ECON 341	Intermediate Microeconomics	
ECON 343	Intermediate Macroeconomics	
ECON 410	Econometrics	
ECON 440	Game Theory and Strategy	
ECON 456	History of Economic Thought	
ECON 461	Economic Development	
ECON 465	Labor Economics	
ECON 470	Public Economics	
ECON 472	International Trade	
ECON 476	Monetary Theory and Policy	
ECON 480	Industrial Organization	
ECON 481	Natural Resource Economics	
ECON 482	Environmental Economics	
FIN 320	Principles of Finance	
FIN 410	Investment Analysis and Management	
FIN 420	Options, Futures, and Other Derivatives	
FIN 450	Advanced Bank Management	
FIN 460	Corporate Finance	
Total Credits		94-100

## Program Notes

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