Mathematics

BA Mathematics Program Mission

The mission of the Mathematics BA program is to equip students with knowledge in, skills of, and values of mathematics and the ability to apply and advance the knowledge, skills, and values of mathematics.

BSEd Mathematics Education Program Mission

The mission of the program is to graduate prepared pre-service secondary mathematics teachers. Prepared pre-service teachers demonstrate high-tech skills, appropriate dispositions, content knowledge, and instructional practices to teach all their students.

Bachelor of Arts with a Major in Mathematics

General Education		
General Education Courses		38
Required Core		**27**
MATH 165	Calculus I	
MATH 166	Calculus II	
MATH 205	Math Proof and Problem Solving	
MATH 265	Calculus III	
MATH 266	Differential Equations	
MATH 305	Linear Algebra	
MATH 315	Mathematical Programming and Modeling	
Elect from the following (Including at least 12 credits of 400 level coursework)		**14**
MATH 294	Intro to Research in Math	
MATH 320	Number Theory	
MATH 380	History of Mathematics	
MATH 420	Abstract Algebra	
MATH 445	Probability and Statistics I	
MATH 446	Probability and Statistics II	
MATH 450	Real Analysis	
MATH 460	Complex Analysis	
MATH 466	Partial Differential Equations	
MATH 470	Numerical Analysis	
MATH 494	Directed Research in Math **	
*No more than 2 credits of MATH 294 can be used as an elective.		
**No more than 4 credits of MATH 494 can be used as an elective.		
Required Support Course		**4**
CSCI 112	Introduction to Visual Programming	
CSCI 160	Computer Science I	
Electives		**35**
Including a second major, or a minor, or two areas of concentration.		
Total Hours		**118**

Bachelor of Science in Education with a Major in Mathematics

General Education		
General Education Courses [1]		29
Required Core		**41**
MATH 165	Calculus I	
MATH 166	Calculus II	
MATH 208	Discrete Mathematics I	
MATH 265	Calculus III	
or MATH 266	Differential Equations	

MATH 305	Linear Algebra	
MATH 325	Algebra for Secondary Teachers	
MATH 330	College Geometry	
MATH 380	History of Mathematics	
MATH 420	Abstract Algebra	
MATH 445	Probability and Statistics I	
MATH 446	Probability and Statistics II	
MATH 475	Math Education Capstone	
Required Support Course		**4**
Select one of the following:		
CSCI 111	Introductory Programming and Big Data	
CSCI 160	Computer Science I	
Professional Education Sequence		**39**
May be taken prior to admission to Teacher Education		
ED 260	Educational Psychology	
ED 260L	Clinical I	
ED 282	Managing the Learning Environment	
ED 282L	Clinical II	
ED 284	Teaching Diverse Learners	
ED 284L	Clinical III	
ED 287	Early-Level Transition Point Conference	
ED 320	Curriculum, Planning, and Assessment I	
ED 321L	Clinical IV	
ED 323L	Clinical V	
ED 324L	Fall Experience	
ED 380	Technology in Teaching	
ED 407	Mid-Level Transition Point Conference	
SPED 110	Introduction to Exceptional Children	
HIST 283	Diversity in America	
May be taken only after admission to Teacher Education		
ED 322	Data Driven Integrated Instruction	
The following courses are taken at the same time within a semester:		
Group 1		
MATH 381	Secondary Math Practicum	
MATH 391	Secondary Mathematics Teaching Methods	
Group 2		
ED 483	Student Teaching Seminar: Secondary	
or ED 484	Student Teaching Seminar: K12	
or ED 482	Student Teaching Seminar	
ED 493	Student Teaching, Secondary	
Total Hours		**113**

[1] Minot State has a 38 credit general education requirement. Math 165 fulfills the quantitative reasoning requirement (3 credits), CSCI 111/CSCI 160 fulfills one of the natural science and technology requirements (3 credits), and MATH 166 can be used to fulfill one of the two choice requirements (3 credits).

[2] 120 credits in total are required to graduate from Minot State University

Additional Program Requirement: take the PRAXIS II Subject Area exam and the PRAXIS II Principles of Learning and Teaching: Grades 7-12 exam before completing the program

Mathematics Minor

Required Core		
MATH 165	Calculus I	4

MATH 166	Calculus II	4
MATH 205	Math Proof and Problem Solving	3
or MATH 208	Discrete Mathematics I	
MATH 305	Linear Algebra	4
Select two Math Electives from 200, 300, or 400 level courses or DATA 211 [1]		**6-8**
Total Hours		**21-23**

1 **Excluding:** MATH 277 Mathematics for Elementary Teachers I, MATH 377 Mathematics for Elementary Teachers II, MATH 378 Mathematics for Elementary Teachers III, MATH 381 Secondary Math Practicum, MATH 385 Directed Project in Mathematics Education, and MATH 475 Math Education Capstone

2 **MATH 380 and MATH 445 are recommended electives for Education majors**

Applied Statistics Minor

Required Core		
MATH 146	Applied Calculus	3
or MATH 147	Applied Calculus II	
or MATH 166	Calculus II	
MATH 210	Elementary Statistics	4
or DATA 211	Applied Statistics and Data Visualization	
MATH 305	Linear Algebra	4
Select three of the following courses:		**12**
MATH 345	Linear Models	
MATH 346	Experimental Design	
MATH 445	Probability and Statistics I	
MATH 446	Probability and Statistics II	
Total Hours		**23**

Mathematics Concentration

Select 12 credits from the following: [1]		**12**
DATA 211	Applied Statistics and Data Visualization	
MATH 105	College Trigonometry	
or higher-numbered MATH courses		
Total Hours		**12**

1 **Excluding: MATH 201H Environmental Mathematics, MATH 277 Mathematics for Elementary Teachers I, MATH 377 Mathematics for Elementary Teachers II, MATH 378 Mathematics for Elementary Teachers III, MATH 381 Secondary Math Practicum, MATH 391 Secondary Mathematics Teaching Methods, and MATH 392 Praxis Subject Area Exam Preparation**

Applied Statistics Concentration

Select three of the following courses:		**12**
MATH 210	Elementary Statistics	
or DATA 211	Applied Statistics and Data Visualization	
MATH 345	Linear Models	
MATH 346	Experimental Design	
MATH 445	Probability and Statistics I	
MATH 446	Probability and Statistics II	
Total Hours		**12**