

# Mathematics (B.S.)

2023-2024 catalog

Student Name: \_\_\_\_\_ ID Number: \_\_\_\_\_

## Major Requirements

All classes must be completed with a C- grade or better. Each course may count only once towards the major. No more than 4 credits of internship may count towards the major. Students completing a major in Mathematics are not eligible for a minor in Mathematics. At least two MAT courses numbered 300 or above must be taken at Augsburg.

Term Completed/Planned	Grade	Credit	Course #	Title
Complete <b>both</b> Calculus I and Calculus II				
_____	_____	4	MAT145 and 145L:	Calculus I (NSM)
_____	_____	4	MAT146 and 146L:	Calculus II (NSM)
Complete <b>one (1)</b> data analysis course				
_____	_____	4	DST164	Introduction to Statistics (with R) (NSM) (recommended)
_____	_____	4	DST234	Introduction to Data Science (and R) (recommended)
_____	_____	4	MAT163	Introductory Statistics ( <i>offered infrequently</i> )
_____	_____	4	Both PHY395 and PHY396:	Comprehensive Laboratory I and II
_____	_____	4	PSY215	Research Methods and Statistics I
Complete <b>one (1)</b> computational reasoning course				
_____	_____	4	CSC165 and 165L	Introduction to Computer Programming (Python) (recommended)
_____	_____	5	CHM280 and 280L	Quantitative Analytical Chemistry
_____	_____	4	PHY327	Special Functions of Mathematical Physics
Complete <b>one (1)</b> geometric perspective course				
_____	_____	4	MAT255	Multivariable Calculus
_____	_____	4	MAT335	Exploring Geometry
Complete <b>both</b> advanced discrete mathematics and linear algebra				
_____	_____	4	MAT302	Discrete Mathematical Structures
_____	_____	4	MAT315	Linear Algebra
Complete <b>one (1)</b> theoretical structures course				
_____	_____	4	MAT350	Graph Theory
_____	_____	4	MAT360	Dynamical Systems
_____	_____	4	MAT370	Real Analysis
_____	_____	4	MAT380	Abstract Algebra
Complete <b>one (1)</b> applied projects course				
_____	_____	4	DST475	Machine Learning
_____	_____	4	DST490	Data Visualization for Social Justice (KC)
_____	_____	4	MAT455	Numerical Mathematics and Computation
_____	_____	4	MAT465	Modeling and Differential Equations in Biological and Natural Sciences
Complete <b>one (1)</b> advanced mathematics elective numbered 350 or above, chosen from:				
_____	_____	4	MAT350	Graph Theory
_____	_____	4	MAT360	Dynamical Systems
_____	_____	4	MAT370	Real Analysis
_____	_____	4	MAT373	Probability Theory
_____	_____	4	MAT380	Abstract Algebra
_____	_____	4	MAT395	Topics
_____	_____	4	MAT399	Internship (or 4 credits of MAT 396, 397, 398)
_____	_____	4	MAT455	Numerical Mathematics and Computation
_____	_____	4	MAT465	Modeling and Differential Equations in Biological and Natural Sciences
_____	_____	4	MAT499	Independent Study

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Complete **one (1)** advanced elective, chosen from:

_____	_____	5	BIO369 and 369L	Biochemistry
_____	_____	4	CHM362	Physical Chemistry: Macroscopic Theory
_____	_____	4	CHM368	Physical Chemistry: Microscopic Theory
_____	_____	5	CHM369 and 369L	Biochemistry
_____	_____	4	CSC391	Programming Languages
_____	_____	4	An additional DST elective numbered 300 or above	
_____	_____	4	ECO416	Mathematical Economics
_____	_____	4	An additional MAT elective numbered 300 or above	
_____	_____	4	PHY327	Special Functions of Mathematical Physics
_____	_____	4	PHY351	Classical Mechanics
_____	_____	4	PHY365	Electricity and Magnetism

Complete one additional supporting course, chosen from:

_____	_____	4	ACC221	Introduction to Financial Accounting
_____	_____	5	BIO369 and 369L	Biochemistry
_____	_____	5	BIO444 and 444L	Genomics and Biotechnology
_____	_____	5	BIO481 and 481L	Ecology
_____	_____	4	CHM362	Physical Chemistry: Macroscopic Theory
_____	_____	4	CHM368	Physical Chemistry: Microscopic Theory
_____	_____	5	CHM369 and 369L	Biochemistry
_____	_____	4	CSC170 and 170L	Introduction to Object-Oriented Programming (Java)
_____	_____	4	CSC341	Data Structures
_____	_____	4	DST234	Introduction to Data Science (and R)
_____	_____	4	ECO112	Principles of Macroeconomics
_____	_____	4	ECO113	Principles of Microeconomics
_____	_____	3	ESE330	5-12 Methods: Mathematics
_____	_____	4	MIS270	Data Management for Business
_____	_____	4	MKT352	Marketing Research and Analysis
_____	_____	5	PHY121 and 121L	General Physics I
_____	_____	4	PSY315	Research Methods and Statistics II
_____	_____	4	POL483	Political Statistics and Methodology
_____	_____	4	SOC363	Research Methods
_____	_____	4	SWK401	Social Work Research and Evaluation
_____	_____	4	URB295	Topics: Geographic Information Systems ( <i>this topic only</i> )

Pass MAT491 in your final semester

_____	_____	0	MAT491	Mathematics Colloquium
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Complete **one (1)** Speaking skill course

_____	_____	2	MAT201	Communicating Mathematics
_____	_____	4	COM111	Public Speaking (HUM)
_____	_____	4	COM115	Scientific and Technical Public Speaking (HUM)
_____	_____	Speaking skill course from another major:		

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Student's Signature

Date

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Advisor's Printed Name

Signature

Date

Advisor(s): By signing, you indicate you have verified the accuracy of the information above. Faculty advisors must initial next to each course substitution/waiver and sign this form.