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.

Upper-division courses used to satisfy major requirements must be taken for letter grades, and only one D grade (D+ or D or D–) may be counted toward the upper-division requirement. At least 12 credits in upper-division mathematics courses must be taken in residence at the university.

Statistical Methods I (MATH 425 (http://catalog.uoregon.edu/archive/2022-2023/search/?P=MATH%20425)) cannot be used to satisfy requirements for a mathematics major or minor.

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

Code	Title	Credits
MATH 253	Calculus III	4
MATH 281–282	Several-Variable Calculus I-II	8
MATH 341–342	Elementary Linear Algebra	8
CS 122	Introduction to Programming and Problem Solving	4
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: [2]		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 [3, 4]	
MATH 345M	Probability and Statistics for Data Science [3, 4]	
DSCI 345M	Probability and Statistics for Data Science [3, 4]	
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 458	Introduction to Mathematical Cryptography	
MATH 461	Introduction to Mathematical Methods of Statistics I	
MATH 462	Introduction to Mathematical Methods of Statistics II [3, 4]	
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 Fundamentals of Analysis I-II (MATH 316–317), Fundamentals of Number Theory I-II (MATH 347–348), Elementary Numerical Analysis I-II (MATH 351–352), Fundamentals of Abstract Algebra I-II (MATH 391–392), Geometries from an Advanced Viewpoint I-II (MATH 394–395), Functions of a Complex Variable I-II (MATH 411–412), Partial Differential Equations: Fourier Analysis I (MATH 421M) - Partial Differential Equations: Fourier Analysis II (MATH 422), Introduction to Analysis I-III (MATH 413–415), Introduction to Topology (MATH 431–432), Introduction to Abstract Algebra I-III (MATH 444–446), Introduction to Mathematical Methods of Statistics I-II (MATH 461–462), Introduction to Mathematical Methods of Statistics I (MATH 461) - Stochastic Processes (MATH 467); credit for these courses cannot count for both the two-term Fundamentals sequence and the four upper-division electives.

3 After completing Introduction to Mathematical Methods of Statistics II (MATH 462), students cannot receive credit for: Statistical Models and Methods (MATH 343), Probability and Statistics for Data Science (MATH 345M), nor Probability and Statistics for Data Science (DSCI 345M).

[4] Students can only use one of the following toward the two-course upper-division requirement: Statistical Models and Methods (MATH 343), Probability and Statistics for Data Science (MATH 345M), Probability and Statistics for Data Science (DSCI 345M), and Introduction to Mathematical Methods of Statistics II (MATH 462).

Bachelor of Arts: Pure Mathematics

Code	Title	Credits
MATH 253	Calculus III	4
MATH 281–282	Several-Variable Calculus I-II	8
MATH 316–317	Fundamentals of Analysis I-II [1]	8
MATH 341–342	Elementary Linear Algebra	8
CS 122	Introduction to Programming and Problem Solving	4
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 four from MATH 201–206)	
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 [3]	
MATH 345M	Probability and Statistics for Data Science [3, 4]	
DSCI 345M	Probability and Statistics for Data Science [3, 4]	
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 461	Introduction to Mathematical Methods of Statistics I	
MATH 462	Introduction to Mathematical Methods of Statistics II [3]	
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 can only use one of the following toward the two-course upper-division requirement: Statistical Models and Methods (MATH 343), Probability and Statistics for Data Science (MATH 345M), Probability and Statistics for Data Science (DSCI 345M), and Introduction to Mathematical Methods of Statistics II (MATH 462).

[4] After completing Introduction to Mathematical Methods of Statistics II (MATH 462), students cannot receive credit for: Statistical Models and Methods (MATH 343), Probability and Statistics for Data Science (MATH 345M), nor Probability and Statistics for Data Science (DSCI 345M).

Bachelor of Arts: Secondary Teaching

Code	Title	Credits
MATH 253	Calculus III	4
MATH 281	Several-Variable Calculus I	4
MATH 341	Elementary Linear Algebra	4
MATH 343	Statistical Models and Methods	4
CS 122	Introduction to Programming and Problem Solving	4
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	8
MATH 397	History and Applications of Calculus	4
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).