

# MATHEMATICS, APPLIED, B.S.

## Contact

Ryan Hedstrom  
Assistant Academic Director, School of Mathematics and Data Science  
rhedstrom@une.edu

## Mission

Mathematical sciences is an integral part of the strong liberal arts tradition at the University of New England. We believe a student's education is enriched by studying mathematics, and our courses support the Nor'easter Core Curriculum. Our Mathematics, Applied major and minor programs provide a solid foundation in contemporary mathematics which prepares students to pursue further study and careers in the mathematical sciences and other quantitative and analytical fields. The Mathematics and Data Science faculty mentor student research and are active in original scholarship. Through consulting and research collaborations, we are a resource for students and faculty across the University.

## Major Description

The Bachelor of Science with a major in Mathematics, Applied provides a well-rounded, liberal arts-based education focused on the application of the mathematical sciences for inquiry and problem-solving. The program places emphasis on mathematical modeling and statistical methods, and project-based approaches. The curriculum integrates computational and theoretical approaches to enable students to experience both the power and the beauty of mathematics for problem-solving and exploration. This major gives students the quantitative and analytical skills to support careers in the sciences, business, finance, health, government, and many other fields. The program also prepares students for advanced study in the applied mathematical sciences. Students interested in a double major will find Mathematics, Applied to be an excellent complement to majors in the natural sciences and other fields, as many fields continue to experience an increasing reliance on mathematics.

## Transfer Credit

See Undergraduate Admissions (<https://catalog.une.edu/undergraduate/admissions/>) for more information.

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## Financial Information

Tuition and fees for subsequent years may vary. Other expenses include books and housing. For more tuition and fee information, please consult this catalog's Financial Information (<https://catalog.une.edu/undergraduate/financial-information-undergraduate-programs/>) section.

## Curricular Requirements

Code	Title	Hours
<b>Nor'easter Core Requirements</b>		
Nor'easter Core Requirements ( <a href="https://catalog.une.edu/undergraduate/core-curriculum/">https://catalog.une.edu/undergraduate/core-curriculum/</a> )		40
<b>Program Required Courses</b>		

DSC 225	Programming I	3
MAT 150	Statistics for Life Sciences	3
MAT 190	Calculus I	4
MAT 195	Calculus II	4
MAT 200	Calculus III	4
MAT 212	Discrete Mathematics	3
MAT 220	Linear Algebra	3
MAT 315	Applied Mathematics with Differential Equations	3
MAT 323 or STS 250	Applied Regression Analysis Statistical Methods I: Linear Models	3
MAT 400 or MAT 405	(Real Analysis) Intro to Numerical Analysis	3
MAT 480 or MAT 490	Mathematics Research Seminar Topics in Mathematics	3
STS 220	Probability	3
6-8 Credits of Mathematics and/or Science electives at 300-level or above		6-8
Open Elective Courses (Students complete open elective credits as necessary to meet the University's 120-credit minimum for graduation. The total number of elective credits required will depend on the student's completed program, core, and other degree requirements.)		35
<b>Total Hours</b>		<b>120-122</b>

Please note: While some courses can fulfill both core and program requirements, the credits earned do not count twice towards the minimum total required credits for the degree.

Students wishing to pursue teacher certification in Math can complete a double major with Mathematics, Applied and Middle and Secondary Education or a major in Middle and Secondary Education and a concentration in Mathematics, Applied. For more information, see the Middle and Secondary Education catalog page. (<https://catalog.une.edu/programs/middle-secondary-education-certification-bs/>)

Students in this major can participate in the pre-health graduate school preparation tracks. (<https://catalog.une.edu/programs/science-prerequisites-health-professions/>)

## Learning Outcomes

Students completing the Mathematics, Applied major will:

- Use mathematical reasoning, modeling, and statistical methods to explore, represent, and communicate about quantitative relationships
- Apply quantitative methods to solve problems in a variety of disciplines
- Develop proficiency with algebraic and computational software to investigate mathematical concepts and applications
- Prepare mathematical documents for dissemination in written and presentation formats
- Gain analytic and technological skills to support careers in mathematics and related areas, as well as graduate and professional study