

COLLEGE OF ARTS & SCIENCES

# APPLIED MATHEMATICS



Applied mathematics concentrates on using mathematical models and techniques to solve problems, often in science, engineering, economics, finance or business.

The discipline involves specialized knowledge and understanding of sophisticated mathematics. Applying mathematics leads to new ideas and discoveries. In some way, shape or form, math is everywhere.

## OUTCOMES & OPPORTUNITIES

- The career options for applied mathematicians are extensive — graduates are well-qualified to use their skills in research, business or other professional environments.
- Recent applied mathematics graduates have attended programs including: University of Massachusetts, M.S. (Applied Mathematics), University of Illinois, M.C.S. (Data Science), The University of Scranton, M.S. (Secondary Education) and Northeastern University, M.S./M.B.A. (Finance).
- Applied mathematics graduates have successful career outcomes such as:
  - Associate Consultant/IT Administrator/QA Analyst, Glemser Technologies
  - Reporting Analyst, Navient Department of Education Loan Servicing
  - Software Engineer, Susquehanna International Group

## CONTACT INFORMATION

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1.888.SCRANTON

or visit [admissions.scranton.edu](https://admissions.scranton.edu)

[admissions.scranton.edu/appliedmath](https://admissions.scranton.edu/appliedmath)

# APPLIED MATHEMATICS CURRICULUM

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
<b>FIRST YEAR</b>			
MAJOR	MATH 114 - (Q) Calculus I— MATH 221 - (Q) Calculus II	4	4
COGNATE	CMPS 134 - Computer Science I/CMPS 134L — CMPS 144 Computer Science II/CMPS 144L	4	4
GE PHIL–T/RS	PHIL 120 - Introduction to Philosophy – T/RS 121 - (P) Theology I: Introduction to the Bible	3	3
GE WRTG	WRTG 107 - (FYW) Composition	3	
GE HUMN	HUMN ELECT - Humanities Electives	3	3
GE FSEM	First Year Seminar <sup>1</sup>		3
GE EP	EP Foundation Course		3
		<b>17</b>	<b>17</b>
<b>SECOND YEAR</b>			
MAJOR	MATH 222 - (Q) Calculus III – MATH 341 - Differential Equations	4	4
MAJOR	MATH 351 - Linear Algebra – MATH 361 - Numerical Analysis	3	3
COGNATE	COGNATE ELECT - Cognate Electives <sup>2</sup>	3-4.5	3-4.5
GE S/BH	S/BH ELECT - Social/Behavioral Electives	3	3
GE PHIL–T/RS	PHIL 210 - Ethics – T/RS 122 - (P) Theology II: Introduction to Christian Theology	3	3
		<b>16-17.5</b>	<b>16-17.5</b>
<b>THIRD YEAR</b>			
MAJOR	MATH 310 - Applied Probability and Mathematical Statistics – MATH ELECT - Mathematics Elective <sup>3</sup>	4	3
MAJOR	MATH 371 - Applied Combinatorics – MATH ELECT - Mathematics Electives <sup>3</sup>	3	3
COGNATE	COGNATE ELECT - Cognate Electives <sup>2</sup>	3-4.5	
GE HUMN	HUMN ELECT - Humanities Electives	3	3
EPW	EPW ELECT - EP Level II Writing Electives <sup>4</sup>	3	3
GE PHIL or T/RS	PHIL ELECT - Philosophy Elective or T/RS ELECT - T/RS Elective	3	3
		<b>16-17.5</b>	<b>15</b>
<b>FOURTH YEAR</b>			
MAJOR	MATH ELECT - Mathematics Electives <sup>3</sup>	6	3
GE ELECT	FREE ELECT - Free Electives <sup>5</sup>	6	9
		<b>12</b>	<b>12</b>

**Total: 121-125.5 Credits**



<sup>1</sup> The selection of a First Year Seminar is likely to fulfill requirements both for the First Year Seminar and a General Education requirement. Thus, the First Year Seminar will not add to the total credits for the semester.

<sup>2</sup> Three cognate electives, thus five cognate courses overall. Students must complete a two course sequence and a three course sequence. Exactly one sequence must be from Computing Science. The other sequence can come from Biology, Chemistry, Physics, Economics, or Finance. All cognate electives must count toward the major of the relevant department. All related labs also are required.

<sup>3</sup> Five Math electives overall, selected from Math courses numbered MATH 299 or higher. A student must choose at least one from MATH 320, MATH 360, MATH 368, MATH 410, or MATH 441.

<sup>4</sup> These EPW electives might also satisfy other curricular requirement(s). When an EPW elective satisfies other curricular requirement(s), an additional free elective will be required.

<sup>5</sup> If a student chooses a cognate sequence in Economics or Finance, then two electives must be used to satisfy the General Education Natural Science requirement.

Applied Mathematics majors are required to take the Applied Mathematics Exit Exam in order to graduate.

Curriculum grid effective for the 2018-19 academic year in accordance with the undergraduate course catalog.