

COLLEGE OF ARTS & SCIENCES

# BIOMATHEMATICS



Biomathematics uses advanced mathematics to solve problems in biology and medicine. This interdisciplinary field prepares graduates for challenges in fields such as epidemiology, molecular biology, physiology and population biology.

Professionals serve as bridges among biologists, mathematicians, computer scientists and others.

## OUTCOMES & OPPORTUNITIES

- Biomathematics students can begin to make a difference as undergraduates, participating in faculty-sponsored research, collaborating with other students and completing internships and honors projects.
- Biomathematics graduates are well prepared to enter exciting careers or to pursue advanced study. Students find jobs in the areas of public health, environmental engineering, research and academics.
- Recent biomathematics graduates have attended programs including: Virginia Tech, Ph.D. (Genetics, Bioinformatics and Computational Biology), Cornell University, Ph.D. (Biochemistry), Georgetown University, M.S. (Biostatistics) and Jefferson Medical College, M.D. (Medicine).
- Just a few of the prestigious positions that University of Scranton biomathematics majors have held:
  - Albert Einstein School of Medicine, research coordinator and biostatistician
  - Princeton University, lab manager/senior researcher
  - Massachusetts General Hospital/Harvard Medical School, postdoctoral fellow
  - Cardiovascular Research Foundation, senior statistician

## CONTACT INFORMATION

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1.888.SCRANTON

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

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

## BIOMATHEMATICS PRE-HEALTH TRACK CURRICULUM *Research Track also available*

	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
MAJOR	BIOL 141 - (E) (FYOC, FYDT Lab only) General Biology – BIOL 142 - (E) (FYOC, FYDT Lab only) General Biology	4.5	4.5
COGNATE	CHEM 112-113 - (E) General and Analytical Chemistry/CHEM 112L-113L	4.5	4.5
GE WRTG	WRTG 107 - (FYW) Composition	3	
GE PHIL	PHIL 120 - Introduction to Philosophy		3
GE FSEM	First Year Seminar <sup>2</sup>		
		<b>16</b>	<b>16</b>
<b>SECOND YEAR</b>			
MAJOR	MATH 222 - (Q) Calculus III – MATH 341 - Differential Equations	4	4
MAJOR	BIOL ELECT - Biology Electives <sup>1</sup>	5	3
COGNATE	CHEM 232 - (E) Organic Chemistry/CHEM 232L – CHEM 233 - (E) Organic Chemistry/CHEM 233L	4.5	4.5
GE T/RS	T/RS 121 - (P) Theology I: Introduction to the Bible – T/RS 122 - (P) Theology II: Introduction to Christian Theology	3	3
GE PHIL	PHIL 210 - Ethics		3
		<b>16.5</b>	<b>17.5</b>
<b>THIRD YEAR</b>			
MAJOR	MATH 310 - Applied Probability and Mathematical Statistics – MATH 351 - Linear Algebra	4	3
COGNATE	CHEM 350 - General Biochemistry I <sup>3</sup>	3	
COGNATE	PHYS 140/PHYS 140L - (E) Elements of Physics I – PHYS 141/PHYS 141L - (E) Elements of Physics II	4	4
GE HUMN	HUMN ELECT – Humanities Electives	3	6
GE ELECT	S/BH ELECT - Social/Behavioral Elective		3
		<b>14</b>	<b>16</b>
<b>FOURTH YEAR</b>			
MAJOR	BIOL ELECT – Biology Elective <sup>1</sup>		3-5
MAJOR	MATH 463 - Topics in Biomathematics		3
GE ELECT	FREE ELECT - Free Elective		3
EPW	EPW ELECT - EP Level II Writing Electives <sup>4</sup>	3	3
GE HUMN	HUMN ELECT – Humanities Elective	3	
GE S/BH	S/BH ELECT – Social/Behavioral Elective	3	
GE PHIL or T/RS	PHIL ELECT - Philosophy Elective or T/RS ELECT - T/RS Elective	3	
		<b>12</b>	<b>12-14</b>

**Total: 120-122 Credits**



<sup>1</sup>The three biology electives must be Biology Major Electives with at least two of them being from exactly one of three content areas: Molecular & Cellular (MC), Systems (S) and Multi-Organismal (MO). The courses in these three content areas are listed on the catalog page for the Biology, BS.

<sup>2</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. Talk with your advisor if you have any questions.

<sup>3</sup>The lab is optional. Additionally, CHEM 450 - Biochemistry I may be substituted for CHEM 350 - General Biochemistry I

<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.

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