Mathematical Biology Concentration

B.S. in Mathematical Sciences, Mathematical Biology Concentration

(120 credit minimum)

First Year		
1st Semester		**Credits**
MATH 111	Calculus I	4
CS 100	Roadmap to Computing	3
ENGL 101	English Composition: Introduction to Academic Writing	3
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
FYS SEM	First-Year Student Seminar	0
	Term Credits	**14**
2nd Semester		
MATH 112	Calculus II	4
CHEM 125	General Chemistry I	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
ENGL 102	English Composition: Introduction to Writing for Research	3
	Term Credits	**14**
Second Year		
1st Semester		
MATH 213	Calculus III B	4
MATH 227	Mathematical Modeling	3
BIOL 200	Concepts in Biology	4
Social Science GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
	Term Credits	**14**
2nd Semester		
MATH 222	Differential Equations	4
MATH 333	Probability and Statistics	3
MATH 337	Linear Algebra	3
BIOL 205	Foundations of Biology: Ecology and Evolution Lecture	3
BIOL 206	Foundations of Biology: Ecology and Evolution Lab	1
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
	Term Credits	**17**
Third Year		
1st Semester		
MATH 331	Introduction to Partial Differential Equations	3
MATH 340	Applied Numerical Methods	3
MATH 374	Stochastic and Discrete Models in Biology	3
BIOL 201	Found of Biol: Cell & Molecula	3
BIOL 202	Found of Biol: Cell & Molecula	1
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**16**
2nd Semester		
MATH 332	Introduction to Functions of a Complex Variable	3
MATH 373	Introduction to Mathematical Biology	3
Technical Elective		3

Free Elective		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
MATH 430	Analytical and Computational Neuroscience	3
MATH 450	Methods Of Applied Math	3
MATH 480	Introductory Mathematical Analysis	3
Free Elective		3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
	Term Credits	**15**
2nd Semester		
MATH 451	Methods Appl Math II	3
MATH 481	Advanced Calculus	3
Free Elective		3
Technical Elective		3
Technical Elective		3
	Term Credits	**15**
	Total Credits	**120**

General Education Requirements and Electives

All students are required to satisfy the General Education Requirements (GER). All GER courses and additional mathematics, technical, and free electives are to be selected in consultation with a faculty advisor in the Department of Mathematical Sciences. Refer to the General Education Requirements (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/) section of this catalog for further information on electives.

Co-op Courses

In Mathematical Sciences, the co-op courses, MATH 310 Co-op Work Experience I and MATH 410 Co-op Work Experience II, bear degree credit and count as technical or free electives, subject to approval by a faculty advisor in the Department of Mathematical Sciences.

Electives

All electives should be selected after consultation with a Mathematical Sciences faculty advisor. Any mathematics course numbered 331 or above may be used as a mathematics, technical, or free elective. Any NJIT course at or above the 100 level may be used as a technical or free elective; except a technical elective is a course that has a significant mathematical and/or scientific content. All elective courses are to be chosen in consultation with a faculty advisor in the Department of Mathematical Sciences.

This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits. First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.