

Applied Mathematics Concentration

B.S. in Mathematical Sciences, Applied Mathematics Concentration

(120 credits)

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
Social Science GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		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
Select one of the following:		3
MATH 244	Introduction to Probability Theory	
MATH 333	Probability and Statistics	
PHYS 234	Physics III	3
Free Elective		3
Term Credits		16

2nd Semester

MATH 222	Differential Equations	4
MATH 337	Linear Algebra	3
MATH 340	Applied Numerical Methods	3
Technical Elective		3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
Term Credits		16

Third Year

1st Semester

MATH 332	Introduction to Functions of a Complex Variable	3
MATH 473	Intermediate Differential Equations	3
MATH 480	Introductory Mathematical Analysis	3
Technical 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

2nd Semester

MATH 331	Introduction to Partial Differential Equations	3
MATH 481	Advanced Calculus	3

Math 300+ Elective		3
Technical 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 450	Methods Of Applied Math	3
Select one of the following		3
MATH 391	Numerical Linear Algebra	
MATH 440	Advanced Applied Numerical Methods	
MATH 448	Stochastic Simulation	
Technical Elective		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 400+ Elective		3
MATH 451	Methods Appl Math II	3
Technical Elective		3
Technical Elective		3
Free Elective		3
Term Credits		15
Total Credits		120

¹ or approved course at Rutgers-Newark.

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.