

Mathematics of Finance and Actuarial Science Concentration

B.S. in Mathematical Sciences, Mathematics of Finance and Actuarial Science 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
ACCT 115	Fundamentals of Financial Accounting	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 244	Introduction to Probability Theory	3
MATH 337	Linear Algebra	3
ECON 265	Microeconomics	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

2nd Semester

MATH 222	Differential Equations	4
MATH 341	Statistical Methods II	3
MATH 345	Multivariate Distributions	3
ECON 266	Macroeconomics	3
FIN 315	Fundamentals of Corporate Finance	3
Term Credits		16

Third Year

1st Semester

MATH 340	Applied Numerical Methods	3
MATH 344	Regression Analysis	3
MATH 346	Mathematics of Finance I	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

2nd Semester

MATH 347	Mathematics of Finance II	3
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MATH 356	Loss Models	3
MATH 447	Applied Time Series Analysis	3
MATH 477	Stochastic Processes	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 331	Introduction to Partial Differential Equations	3
MATH 432	Mathematics of Financial Derivatives I (Capstone I)	3
MATH 441	Actuarial Mathematics I	3
MATH 448	Stochastic Simulation	3
Select one of the following electives:		3
MATH 442	Actuarial Mathematics II	
MATH 478	Stat Methods in Data Sci	
MATH 480	Introductory Mathematical Analysis	
MATH 481	Advanced Calculus	
R390 330	Corporate Finance	
FIN 416	Advanced Corporate Finance	
FIN 422	International Finance	
FIN 423	Risk Analysis	
Term Credits		15
2nd Semester		
MATH 433	Mathematics of Financial Derivatives II (Capstone II)	3
Select one of the following electives:		3
MATH 442	Actuarial Mathematics II	
MATH 478	Stat Methods in Data Sci	
MATH 480	Introductory Mathematical Analysis	
MATH 481	Advanced Calculus	
R390 330	Corporate Finance	
FIN 416	Advanced Corporate Finance	
FIN 422	International Finance	
FIN 423	Risk Analysis	
Free 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
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.