

Applied Statistics and Data Analysis Concentration

B.S. in Mathematical Sciences, Applied Statistics and Data Analysis 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
CS 113	Introduction to Computer Science 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
MATH 244	Introduction to Probability Theory	3
CS 114	Introduction to Computer Science II	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 337	Linear Algebra	3
CS 280	Programming Language Concepts	3
Social Science GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
Term Credits		16

Third Year

1st Semester

MATH 340	Applied Numerical Methods	3
MATH 344	Regression Analysis	3
MATH 391	Numerical Linear Algebra	3
CS 331	Database System Design & Mgmt	3
Technical Elective		3
Term Credits		15

2nd Semester

MATH 345	Multivariate Distributions	3
MATH 461	Introduction to Statistical Computing with SAS and R	3
MATH 478	Stat Methods in Data Sci	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 480	Introductory Mathematical Analysis	3
MATH 448	Stochastic Simulation	3
MATH 462	Statistics and Statistical Learning (Capstone I)	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 447	Applied Time Series Analysis	3
MATH 463	Statistics and Statistical Learning (Capstone II)	3
MATH 477	Stochastic Processes	3
Technical 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.

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.