

APPLIED STATISTICS IN SOCIAL SCIENCE RESEARCH (MS)

Department Website (<https://steinhardt.nyu.edu/ash/>)

NYSED: 35963 **HEGIS:** 1702.00 **CIP:** 27.0501

Degrees

MS Applied Statistics and Social Science Research
MS/MPA Public and Nonprofit Management and Policy (<https://steinhardt.nyu.edu/degree/ms-applied-statistics-mpa-public-and-nonprofit-management-and-policy/>) (NYU Wagner)

Program Description

The Master of Science in Applied Statistics for Social Science Research (A3SR) provides students with rigorous training in applied statistics research techniques and strategies that can be applied to contemporary social, behavioral, and health science research. This MS program is a good choice for students who want to gain greater knowledge of statistics and its application to everyday problems and policies, and to sharpen their data-analysis and problem-solving skills.

The A3SR curriculum provides students with a firm foundation in statistical modeling tools and theoretical perspectives common within the social, behavioral, and health sciences, while allowing the opportunity to pursue their own interests and develop specialized skills. It prepares students to become applied statisticians and data scientists in the public or private sector, as well as for further academic study in fields that rely on quantitative research. The concentrations and electives can be tailored to students' substantive and methodological interests. A3SR faculty have particular strengths in causal inference, demography, missing data, model selection, multivariate analysis, multi-level modeling, networks, and surveys and sampling. They also have expertise on methods at the intersection between machine learning and statistics. Students are encouraged to work closely with faculty on research that ranges from applied statistical analysis to the development of customized statistical models.

The program is an initiative of the Center for Practice and Research at the Intersection of Information, Society, and Methodology (PRIISM) and is an integral part of the larger university-wide initiative in data science, in which several master's degrees are offered.

A dual-degree option (<https://steinhardt.nyu.edu/degree/ms-applied-statistics-mpa-public-and-nonprofit-management-and-policy/>) offers students interested in contributing to public policy the opportunity to develop both their quantitative skills and their policy analysis and public management expertise by completing both an MS in Applied Statistics at NYU Steinhardt and an MPA in Public and Nonprofit Management at the NYU Wagner Graduate School of Public Service in two years. The MS program focuses on understanding and applying advanced statistical techniques critical to policy issues across the social, behavioral, and health sciences. The MPA program, with its Public Policy Analysis specialization, provides students with key frameworks from economics and political science alongside important skills in management and finance, and sets them up to play a leading role in

designing, implementing, and evaluating policy that better serves the public good.

This dual degree allows for 24 credits of coursework to apply to both degrees, so students can complete their MS and MPA in only two years of continuous, full-time study resulting in considerable financial savings.

Admissions

Admission to graduate programs in the Steinhardt School of Culture, Education, and Human Development requires the following minimum components:

- Résumé/CV
- Statement of Purpose
- Letters of Recommendation
- Transcripts
- Proficiency in English

See NYU Steinhardt's Graduate Admissions website (<https://steinhardt.nyu.edu/admissions/how-apply/graduate-students/>) for additional information on school-wide admission. Some programs may require additional components for admissions.

See How to Apply (<https://steinhardt.nyu.edu/degree/ms-applied-statistics-social-science-research/how-apply/>) for admission requirements and instructions specific to this program.

Program Requirements

This variable-credit program (34–44 credits) offers an accelerated option for students entering with prior statistical training. The program consists of theoretical foundations, statistical inference and generalized linear models, causal inference, survey research methods, multilevel modeling, applied statistics electives, and unrestricted electives. A statistical consulting research seminar and internship provide practical learning experiences.

All students must select one of three concentrations: General Applied Statistics, Computational Methods, or Data Science for Social Impact. The concentrations allow students to tailor their studies and focus more specifically on training and preparation for their career or future research. Data Science for Social Impact prepares students to build research–practice partnerships, become knowledgeable of ethical concerns surrounding data, and effectively communicate research findings and their implications. Computational Methods provides more rigorous training in methodological theory and development, and is particularly appropriate for students who wish to progress to PhD programs. General Applied Statistics offers maximal flexibility, allowing students to customize their programs of study by selecting from a broad set of statistics and related courses. Two applied statistics electives must be taken, selected from among the topics offered in the program or from a curated, approved list. Finally, a small number of unrestricted electives may be taken from departments across the entire university.

Course	Title	Credits
Major Requirements		
<i>Core Requirements</i>		
APSTA-GE 2003	Interm Quantitative Methods: General Linear Model	3
or STAT-GB 2301	Regression and Multivariate Data Analysis	
APSTA-GE 2004	Introductory Statistical Inference in R	2

APSTA-GE 2331	Data Science for Social Impact	3
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2352	Practicum in Applied Statistics: Statistical Computing ²	2
APSTA-GE 2042 or APSTA-GE 2040	Multi-Level Modeling: Nested Data/Longitudinal Data Multi-Level Modeling Growth Curve	2
APSTA-GE 2139 or APSTA-GE 2134	Survey Research Methods Experimental & Quasi Experimental Design	3
APSTA-GE 2044	Generalized Linear Models and Extensions	2
APSTA-GE 2351 ¹	Practicum in Applied Statistics: Applied Probability	3

Electives³

Select 8-10 credits of the following: 8-10
Program Electives

Select 4-10 credits of APSTA-GE courses; not taken to meet any other requirement

Unrestricted Electives

Select 0-6 credits of any NYU graduate level courses. May opt for all APSTA-GE electives

Concentrations

Select one of the following concentrations (8 units minimum): 8

General Applied Statistics Concentration:

Three or more APSTA-GE courses not taken to fulfill another requirement totaling at least 8 credits

Computational Methods Concentration:

APSTA-GE 2011 Supervised and Unsupervised Machine Learning

APSTA-GE 2122 Frequentist Inference

Select two of the following:

APSTA-GE 2123 Bayesian Inference

APSTA-GE 2013 Missing Data

APSTA-GE 2017 Educational Data Science Practicum

Data Science for Social Impact Concentration:

APSTA-GE 2011 Supervised and Unsupervised Machine Learning

APSTA-GE 2062 Ethics of Data Science

APSTA-GE 2355 Data Science Translation: Writing and Visualization

Culminating Experience

APSTA-GE 2310 Internship⁴ 2

APSTA-GE 2401 Statistical Consulting Research Seminar 3

Total Credits 44

1

Indicates that the student with equivalent prior coursework may place out of this course.

2

Indicates that a student with significant experience may qualify for reduced credit or may place out of this course.

3

Each student must have at least 8 elective credits, 4 of which must be APSTA-GE. Minimum of 10 elective credits for those that take APSTA-GE 2310 Internship for 0 credits.

4

If Internship is taken for 0 credits, then the two remaining credits must be made up via electives; may be waived if student has significant professional experience in the field.

**Sample Plan of Study
Full-Time General Applied Statistics**

Course	Title	Credits
1st Semester/Term		
APSTA-GE 2003	Intern Quantitative Methods: General Linear Model	3
APSTA-GE 2331	Data Science for Social Impact	3
APSTA-GE 2351	Practicum in Applied Statistics: Applied Probability	3
APSTA-GE 2352	Practicum in Applied Statistics: Statistical Computing	2
Credits		11

2nd Semester/Term		
Concentration or APSTA elective		2
Credits		2

3rd Semester/Term		
APSTA-GE 2004	Introductory Statistical Inference in R	2
APSTA-GE 2044	Generalized Linear Models and Extensions	2
APSTA-GE 2042	Multi-Level Modeling: Nested Data/Longitudinal Data	2
Concentration or APSTA elective		2
Unrestricted elective		2
Credits		10

4th Semester/Term		
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2401	Statistical Consulting Research Seminar	3
APSTA-GE 2139 or APSTA-GE 2134	Survey Research Methods or Experimental & Quasi Experimental Design	3
Concentration or APSTA elective		2
Credits		11

5th Semester/Term		
APSTA-GE 2310	Internship	2
Concentration or APSTA elective		2
Concentration or APSTA elective		2
Concentration or APSTA elective		2
Unrestricted Elective		2
Credits		10
Total Credits		44

Full-Time Data Science for Social Impact

Course	Title	Credits
1st Semester/Term		
APSTA-GE 2003	Intern Quantitative Methods: General Linear Model	3
APSTA-GE 2331	Data Science for Social Impact	3
APSTA-GE 2351	Practicum in Applied Statistics: Applied Probability	3
APSTA-GE 2352	Practicum in Applied Statistics: Statistical Computing	2
Credits		11

2nd Semester/Term		
APSTA-GE 2011	Supervised and Unsupervised Machine Learning	2
Credits		2

3rd Semester/Term		
APSTA-GE 2004	Introductory Statistical Inference in R	2
APSTA-GE 2044	Generalized Linear Models and Extensions	2
APSTA-GE 2042	Multi-Level Modeling: Nested Data/Longitudinal Data	2
APSTA-GE 2062	Ethics of Data Science	3
APSTA-GE 2355	Data Science Translation: Writing and Visualization	3
Credits		12
4th Semester/Term		
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2401	Statistical Consulting Research Seminar	3
APSTA-GE 2139	Survey Research Methods	3
A3SR Elective		2
Credits		11
5th Semester/Term		
APSTA-GE 2310	Internship	2
Unrestricted Elective		3
Unrestricted Elective		1
A3SR Elective		2
Credits		8
Total Credits		44

2nd Semester/Term		
APSTA-GE 2004	Introductory Statistical Inference in R	2
APSTA-GE 2044	Generalized Linear Models and Extensions	2
Unrestricted Elective		2-3
Credits		6
3rd Semester/Term		
Concentration Course		2
Unrestricted Elective		2-3
Credits		4
4th Semester/Term		
APSTA-GE 2352	Practicum in Applied Statistics: Statistical Computing	2
APSTA-GE 2331	Data Science for Social Impact	3
Credits		5
5th Semester/Term		
A3SR Elective		2
Credits		2
6th Semester/Term		
APSTA-GE 2134	Experimental & Quasi Experimental Design	3
APSTA-GE 2042	Multi-Level Modeling: Nested Data/Longitudinal Data	2
Concentration Course		2
Credits		7
7th Semester/Term		
Concentration Course		2
Credits		2
8th Semester/Term		
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2401	Statistical Consulting Research Seminar	3
Credits		6
9th Semester/Term		
APSTA-GE 2310	Internship	2
A3SR Elective		2
Concentration Course		2
Credits		6
Total Credits		44

Full-Time Computational Methods

Course	Title	Credits
1st Semester/Term		
APSTA-GE 2003	Intern Quantitative Methods: General Linear Model	3
APSTA-GE 2331	Data Science for Social Impact	3
APSTA-GE 2351	Practicum in Applied Statistics: Applied Probability	3
APSTA-GE 2352	Practicum in Applied Statistics: Statistical Computing	2
Credits		11
2nd Semester/Term		
APSTA-GE 2011	Supervised and Unsupervised Machine Learning	2
Credits		2
3rd Semester/Term		
APSTA-GE 2004	Introductory Statistical Inference in R	2
APSTA-GE 2044	Generalized Linear Models and Extensions	2
APSTA-GE 2042	Multi-Level Modeling: Nested Data/Longitudinal Data	2
APSTA-GE 2122	Frequentist Inference	2
APSTA-GE 2123	Bayesian Inference	2
APSTA-GE 2013	Missing Data	2
Credits		12
4th Semester/Term		
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2401	Statistical Consulting Research Seminar	3
APSTA-GE 2139	Survey Research Methods	3
A3SR Elective		2
Credits		11
5th Semester/Term		
APSTA-GE 2310	Internship	2
Unrestricted Elective		3
Unrestricted Elective		1
A3SR Elective		2
Credits		8
Total Credits		44

Part-Time Sample Plan

Course	Title	Credits
1st Semester/Term		
APSTA-GE 2003	Intern Quantitative Methods: General Linear Model	3
APSTA-GE 2351	Practicum in Applied Statistics: Applied Probability	3
Credits		6

Credits		2
7th Semester/Term		
Concentration Course		2
Credits		2
8th Semester/Term		
APSTA-GE 2012	Causal Inference	3
APSTA-GE 2401	Statistical Consulting Research Seminar	3
Credits		6
9th Semester/Term		
APSTA-GE 2310	Internship	2
A3SR Elective		2
Concentration Course		2
Credits		6
Total Credits		44

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Build a strong foundation in statistical research techniques and apply them to address critical issues in contemporary social, behavioral, health science and policy research.
2. Develop core statistical programming skills.
3. Develop ability to communicate about statistical methods and results to a non-technical audience.
4. Ability to apply statistical methods in research or professional settings.
5. Develop proficiency in core statistical competencies.

Policies

STEM OPT Benefits for International Students

If you're an international student, you may be able to work in the United States after graduation for an extended period of time. Most students studying on F-1 visas will be eligible for 12 months of Optional Practical Training (OPT) off-campus work authorization. F-1 students in this program may also be eligible for the STEM (Science, Technology, Engineering, or Mathematics) OPT extension, allowing you to extend your time in the United States to pursue degree-related work experience for a total of 36 months or 3 years. For more information on who can apply for

this extension visit NYU's Office of Global Services: STEM OPT (<http://www.nyu.edu/students/student-information-and-resources/student-visa-and-immigration/alumni/extend-your-opt/stem-opt.html>).

NYU Policies

University-wide policies can be found on the New York University Policy pages (<https://bulletins.nyu.edu/nyu/policies/>).

Steinhardt Academic Policies

Additional academic policies can be found the Steinhardt academic policies page (<https://bulletins.nyu.edu/graduate/culture-education-human-development/academic-policies/>).