

GENOME HEALTH ANALYSIS (MS)

Department Website (<https://med.nyu.edu/research/vilcek-institute-graduate-biomedical-sciences/ms-genome-health-analysis/>)

NYSED: 43227 **HEGIS:** 1299.20 **CIP:** 26.0807

Program Description

Students in our MS in Genome Health Analysis program take part in courses offered by both NYU Langone's Vilcek Institute Biomedical Sciences and Sarah Lawrence College's Joan H. Mark Graduate Program in Human Genetics. The program, which culminates in a degree from NYU, is typically completed in two years and includes coursework, case-based skills labs, and a practicum for immersion in future work environments. With individualized coaching from faculty of both programs, students acquire competencies that can be successfully adapted to a variety of careers in personalized healthcare and genomic medicine.

Students also have opportunities to engage in interdisciplinary, collaborative learning with faculty and students at Sarah Lawrence College and NYU Grossman School of Medicine. All of these experiences help our graduates develop strong professional identities as change agents and valued members of interprofessional teams, which enables them to innovate new healthcare roles.

Admissions

We conduct a holistic review of each application. Required materials include the following:

- A bachelor's degree from an accredited institution. A GPA of 3.0 or higher is encouraged, but not necessary for admission.
- At least one course in each of the following subjects: genetics, statistics, and introductory computer programming. A strong background is not required; students in our program learn computational and quantitative methods and how to apply them to clinical cases.
- A statement of purpose that demonstrates an interest in genetics and healthcare
- Two letters of recommendation

Applicants' prior academic and professional experiences are reviewed to identify ability to succeed in graduate-level work and to function as part of a group.

Evaluation Criteria and Test Scores

A committee of faculty members from NYU Grossman School of Medicine and Sarah Lawrence College evaluates each applicant's academic qualifications. Interviews with program faculty are required as part of the admissions process. The program does not require GRE/GMAT scores.

Competitive applicants are proficient in spoken and written English. If you are an international student or a U.S. resident who has not taken classes in the United States, you must demonstrate English-language skills in reading, writing, speaking, and comprehension.

Official Test of English as a Foreign Language (TOEFL) (<https://www.ets.org/toefl.html>) score reports should be sent to NYU's Graduate School of Arts and Science, institution code 2596, department code 45. International English Language Testing System (IELTS) scores reports

should be submitted electronically to "NYU Vilcek Institute of Grad Biomed Studies." We are no longer accepting Duolingo test scores.

How to Apply

For the application cycle that is currently open, applicants must submit the following through our application portal.

- an online application form
- transcripts from all academic institutions attended (if your institution does not provide a transcript in English, you must obtain a certified English translation through a credential evaluation organization such as World Education Services)
- a statement of purpose
- a CV or resume
- two letters of recommendation

Your application will not be reviewed until all materials have been received.

International Applicants

We welcome international applicants. Please apply through our application portal and indicate in the online application that you are an international candidate.

Program Schedule

The MS in Genome Health Analysis program is typically 21 months. We currently do not offer online courses or part-time schedules.

Program Requirements

Course	Title	Credits
GHA-MD 1001	Advanced Human Genetics	3
GHA-MD 1002	Healthcare Systems	3
GHA-MD 1003	Evidence-Based Practice	3
BMSC-GA 1358	Introduction to Programming	2
BMIN-GA 3004	Applied Sequencing Informatics	3
	Professional Identities	3
	Human Disease Genomics	3
	Clinical Risk Assessment	3
	Practicum 1	2
BMSC-GA 4455	Introduction to Healthcare AI	3
	Human Genome Variant Interpretation	3
	Unix Basics and Bash Scripting	1
	Skills Lab 1	4
	Practicum 2	4
	Skills Lab 2	2
	Translational Healthcare	3
	Emerging Genomics Technologies	3
Total Credits		48

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
BMSC-GA 1358	Introduction to Programming	2
	Human Genetics	3
	Healthcare Systems	3
	Evidence-based Practice	3

Unix Basics and Bash Scripting	1
Credits	12
2nd Semester/Term	
BMIN-GA 3004 Applied Sequencing Informatics	3
Professional Identities	3
Human Disease Genomics	3
Clinical Risk Assessment	3
Credits	12
3rd Semester/Term	
Practicum 1	2
BMSC-GA 4455 Introduction to Healthcare AI	3
Human Genome Variant Interpretation	3
Skills Lab 1	4
Credits	12
4th Semester/Term	
Practicum 2	4
Skills Lab 2	2
Translational Healthcare	3
Emerging Genomics Technologies	3
Credits	12
Total Credits	48

Learning Outcomes

Upon successful completion of this program:

1. Trainees will acquire deep and practical expertise in human genetics, genomics, and associated technologies, with an emphasis on bioinformatics and translational healthcare systems, and will gain competencies in human genome data analysis and translational care coordination.
2. This program will train a new class of health professionals who will generate medically actionable genomic information from an individual's genome and provide guidance to improve health outcomes.
3. Students will be prepared to succeed in a number of roles in genetic and genomic testing companies and within the healthcare system, especially in roles that involve the interpretation of variants on human health upon genetic testing.

Policies

NYU Policies

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

Grossman School of Medicine Policies

A list of related academic policies can be found on the Grossman School of Medicine Academic Policies page (<https://bulletins.nyu.edu/graduate/medicine-grossman/academic-policies/>).