

# EPIDEMIOLOGY (MS)

NYSED: 40722 HEGIS: 0419.00 CIP: 26.1309

## Program Description

The Master of Science in Epidemiology is a research-focused degree that prepares students to design and conduct epidemiologic studies as well as analyze, interpret, model, and report on data from public health, health care, biomedical, clinical and population-based studies.

## Focus Areas

There are four program focus areas that allow students to develop a specific area of content or methodological expertise:

- General Epidemiology
- Infectious Disease Epidemiology
- Noncommunicable Disease Epidemiology
- Modeling

Graduates from the program will be prepared to assume collaborative research team member roles in public health and healthcare settings around the globe with a skillset that has both breadth and depth. They can also pursue doctoral level studies in epidemiology, biostatistics, or other quantitative health fields. In addition, the MS in Epidemiology can serve as a terminal degree for those interested in working as a master's level project director/coordinator or statistician/data analyst in a wide array of research settings including government, academia, industry (e.g., pharmaceutical companies, contract research organization, healthcare consulting), non-governmental organizations, and nonprofit and community-based organizations.

## Admissions

All applicants are required to submit the following:

- SOPHAS application form, select a single area of concentration
- Official transcripts from each institution attended (or an evaluation of your credentials if you graduated from a foreign institution)
- Three letters of recommendation
- Personal statement
- Resume/CV
- English language proficiency exam (TOEFL iBT or IELTS Academic) results for all applicants whose native language is not English and who did not receive the equivalent of a US bachelor's degree at an institution where English is the primary language of instruction.
  - International students requiring a visa to attend NYU must complete the IELTS exam in person at an authorized test center. If you are required to take the exam but will not need it for visa purposes you may choose to take it online or at a test center.

## Program Requirements

Course	Title	Credits
<b>Required Courses</b>		
GPH-GU 2106	Epidemiology	3
GPH-GU 2450	Intermediate Epidemiology	3
GPH-GU 2930	Epidemiological Methods and Design	3
GPH-GU 2374	Evaluation of Epidemiological Studies	3
GPH-GU 2995	Biostatistics for Public Health	3

GPH-GU 2332	Applied Regression Analyses	3
GPH-GU 2152	Introduction to Agent-Based Modeling	3
GPH-GU 5170	Introduction to Public Health	0

### Focus Areas

Select one of the following Focus Areas: 21

- General Epidemiology
- Infectious Disease Epidemiology
- Noncommunicable Disease Epidemiology
- Modeling

### Culminating Experience

GPH-GU 2686	Thesis I: Practice and Integrative Learning Experiences	2
GPH-GU 2687	Thesis II: Practice and Integrative Learning Experiences	2

**Total Credits** 46

## Focus Area Requirements

### General Epidemiology

Course	Title	Credits
<b>Required Courses</b>		
GPH-GU 2324	Infectious Disease Epidemiology	3
GPH-GU 2230	Global Non-Communicable Disease Prev & Control	3
<b>Electives</b>		
Select five courses from the following:		15
GPH-GU 9325	Behavioral and Communication Strategies for Global Epidemics	
GPH-GU 2363	Causal Inference: Design and Analysis	
GPH-GU 2380	Data-Driven Decision Making in Global Public Health	
GPH-GU 2440	Emerging Diseases and Bioterrorism	
GPH-GU 2342	Global Issues in Public Health Nutrition	
GPH-GU 2140	Global Issues in Social & Behavioral Health	
GPH-GU 2480	Longitudinal Analysis of Public Health Data	
GPH-GU 2344	Maternal and Child Nutrition in Public Health	
GPH-GU 2275	Nutrition Epidemiology for Public Health	
GPH-GU 3275	Practical Applications in Epidemiology	
GPH-GU 2227	Psychiatric Epidemiology	
GPH-GU 9345	Public Health Emergency Preparedness and Response: A Global Perspective	
GPH-GU 2198	Simulations in Biostatistics	
GPH-GU 2255	Substance Use and Public Health	
GPH-GU 2137	Topics in Dynamic Modeling	
<b>Total Credits</b>		<b>21</b>

### Infectious Disease Epidemiology

Course	Title	Credits
<b>Required Courses</b>		
GPH-GU 2324	Infectious Disease Epidemiology	3
or GPH-GU 2274	Outbreak Epidemiology: Re-emerging and Emerging Infectious Diseases	
Select two of the following:		6
GPH-GU 2232	Detection and Control of Waterborne Pathogens	
GPH-GU 2440	Emerging Diseases and Bioterrorism	

GPH-GU 5120	HIV/AIDS from a Global Perspective	
<b>Electives</b>		
Select four courses from the following:		12
GPH-GU 2368	Applied Survival Analysis	
GPH-GU 9325	Behavioral and Communication Strategies for Global Epidemics	
GPH-GU 2232	Detection and Control of Waterborne Pathogens	
GPH-GU 2440	Emerging Diseases and Bioterrorism	
GPH-GU 2140	Global Issues in Social & Behavioral Health	
GPH-GU 5120	HIV/AIDS from a Global Perspective	
GPH-GU 2480	Longitudinal Analysis of Public Health Data	
<b>Total Credits</b>		<b>21</b>

Noncommunicable Disease Epidemiology

<b>Course</b>	<b>Title</b>	<b>Credits</b>
<b>Required Courses</b>		
GPH-GU 2230	Global Non-Communicable Disease Prev & Control	3
Select two of the following:		6
GPH-GU 2275	Nutrition Epidemiology for Public Health	
GPH-GU 2255	Substance Use and Public Health	
GPH-GU 2227	Psychiatric Epidemiology	
<b>Electives</b>		
Select four courses from the following:		12
GPH-GU 2368	Applied Survival Analysis	
GPH-GU 2278	Global Cancer Epidemiology	
GPH-GU 2342	Global Issues in Public Health Nutrition	
GPH-GU 2140	Global Issues in Social & Behavioral Health	
GPH-GU 2480	Longitudinal Analysis of Public Health Data	
GPH-GU 2227	Psychiatric Epidemiology	
<b>Total Credits</b>		<b>21</b>

Modeling

<b>Course</b>	<b>Title</b>	<b>Credits</b>
<b>Required Course</b>		
GPH-GU 3152	Advanced Agent-Based Modeling	3
<b>Electives</b>		
Select six courses from the following:		18
GPH-GU 2368	Applied Survival Analysis	
GPH-GU 2363	Causal Inference: Design and Analysis	
GPH-GU 2374	Evaluation of Epidemiological Studies	
GPH-GU 2230	Global Non-Communicable Disease Prev & Control	
GPH-GU 2324	Infectious Disease Epidemiology	
or GPH-GU 2274	Outbreak Epidemiology: Re-emerging and Emerging Infectious Diseases	
GPH-GU 2480	Longitudinal Analysis of Public Health Data	
GPH-GU 2137	Topics in Dynamic Modeling	
<b>Total Credits</b>		<b>21</b>

Sample Plan of Study

Full-Time

<b>Course</b>	<b>Title</b>	<b>Credits</b>
<b>1st Semester/Term</b>		
GPH-GU 2106	Epidemiology	3

GPH-GU 2995	Biostatistics for Public Health	3
GPH-GU 2152	Introduction to Agent-Based Modeling	3
Area Elective		3
<b>Credits</b>		<b>12</b>
<b>2nd Semester/Term</b>		
GPH-GU 2450	Intermediate Epidemiology	3
GPH-GU 2332	Applied Regression Analyses	3
GPH-GU 5170	Introduction to Public Health	0
Area Elective		3
Area Elective		3
<b>Credits</b>		<b>12</b>
<b>3rd Semester/Term</b>		
GPH-GU 2930	Epidemiological Methods and Design	3
GPH-GU 2686	Thesis I: Practice and Integrative Learning Experiences	2
Area Elective		3
Area Elective		3
<b>Credits</b>		<b>11</b>
<b>4th Semester/Term</b>		
GPH-GU 2687	Thesis II: Practice and Integrative Learning Experiences	2
GPH-GU 2374	Evaluation of Epidemiological Studies	3
Area Elective		3
Area Elective		3
<b>Credits</b>		<b>11</b>
<b>Total Credits</b>		<b>46</b>

Part-Time

<b>Course</b>	<b>Title</b>	<b>Credits</b>
<b>1st Semester/Term</b>		
GPH-GU 2106	Epidemiology	3
GPH-GU 2995	Biostatistics for Public Health	3
<b>Credits</b>		<b>6</b>
<b>2nd Semester/Term</b>		
GPH-GU 2450	Intermediate Epidemiology	3
GPH-GU 2332	Applied Regression Analyses	3
GPH-GU 5170	Introduction to Public Health	0
<b>Credits</b>		<b>6</b>
<b>3rd Semester/Term</b>		
GPH-GU 2152	Introduction to Agent-Based Modeling	3
Area Elective		3
<b>Credits</b>		<b>6</b>
<b>4th Semester/Term</b>		
GPH-GU 2374	Evaluation of Epidemiological Studies	3
Area Elective		3
<b>Credits</b>		<b>6</b>
<b>5th Semester/Term</b>		
GPH-GU 2930	Epidemiological Methods and Design	3
Area Elective		3
<b>Credits</b>		<b>6</b>
<b>6th Semester/Term</b>		
Area Elective		3
Area Elective		3
<b>Credits</b>		<b>6</b>
<b>7th Semester/Term</b>		
GPH-GU 2686	Thesis I: Practice and Integrative Learning Experiences	2
Area Elective		3
<b>Credits</b>		<b>5</b>
<b>8th Semester/Term</b>		
GPH-GU 2687	Thesis II: Practice and Integrative Learning Experiences	2

Area Elective	3
Credits	5
Total Credits	46

## Learning Outcomes

Upon completion of the Epidemiology Master of Science degree, graduates will have the skills and competencies to:

1. Explain and provide examples of fundamental epidemiological concepts (e.g., prevalence, incidence, odds ratio, relative risk, attributable risk, direct and indirect standardization, standardized mortality ratio, cross-sectional, case-control, cohort, precision, bias, confounding, effect modification).
2. Critically evaluate the application of epidemiologic methods to answer public health questions.
3. Conduct quantitative analyses skills of epidemiologic data using statistical software.
4. Explain and provide examples of the application of epidemiologic methods to the study of the social determinants of health.
5. Synthesize the extant epidemiologic literature and identify its limitations and gaps.
6. Design robust observational and experimental studies to address public health and clinical problems.
7. Effectively communicate epidemiologic findings orally, visually, and in writing.
8. Understand and apply principles of ethical conduct to epidemiological studies.
9. Critically evaluate and apply dynamic models of epidemiologic phenomena using equation- and agent-based models.

## Policies

### NYU Policies

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

### School of Global Public Health Policies

A list of related academic policies can be found on the School of Global Public Health academic policies page (<https://bulletins.nyu.edu/graduate/global-public-health/academic-policies/>).