

GLOBAL PUBLIC HEALTH AND SCIENCE (BS)

NYSED: 35040 HEGIS: 1214.00 CIP: 51.2201

Program Description

The highly selective, demanding undergraduate majors in Global Public Health (GPH) allow CAS students to choose a course of study that is a combination of public health and an academic discipline housed in the College (GPH is not a stand-alone major), and also provide them with instructors and courses drawn from the entire university. This unique structure responds to the ever-increasing demand for interdisciplinary public health practitioners both in the U.S. and abroad. The coursework is integrated with experiential learning and study away requirements to ensure that students are broadly trained and uniquely prepared for a variety of careers.

The majors' global public health courses are offered by the NYU School of Global Public Health (GPH). GPH delivers truly interdisciplinary public health education at the undergraduate, master's, and doctoral level. It builds on the global reach of NYU's unique Global Network University; draws strength from the entrepreneurial spirit of NYU's many talented faculty and students; and serves as a conduit for groundbreaking research and education that advances and promotes equitable health for all.

Students interested in this major will choose one of the following concentrations:

Concentrations

Global Public Health and Biology

Students pursuing this combined major complete a concentration in biology that emphasizes one of the following areas: genetics and genomics, infectious diseases, or environmental health. This major provides a unique opportunity for students to explore cutting-edge life science and how recent advances can help address some of the world's most complex health challenges. Graduates are well-prepared to pursue professional studies in medicine, dentistry, public health, and nutrition, as well as academic and research positions.

Departmental advising is absolutely crucial for students pursuing this demanding major. Students must satisfy all requirements of the College Core Curriculum (the First-Year Seminar, foreign language, expository writing, and Foundations of Contemporary Culture). Careful planning is necessary to ensure that all major, pre-health, and College Core Curriculum requirements can be completed in four years.

Students in this combined major must consult with the DUS or other departmental advisor to work out a course plan, especially as this major requires students to study away for one semester.

Global Public Health and Chemistry

Students pursuing this combined program concentrate in chemistry—the central natural science that interfaces physics and mathematics with the life sciences.

Departmental advising is absolutely crucial for students pursuing this demanding major. As with all majors and minors offered by the Department of Chemistry, BIOL-UA 11 Principles of Biology I, BIOL-UA 12 are not required for this major; however, prehealth students

must take this sequence in addition to the major requirements outlined below. In addition, students must satisfy all requirements of the College Core Curriculum (the First-Year Seminar, foreign language, expository writing, and Foundations of Contemporary Culture). Careful planning is necessary to ensure that all major, prehealth, and College Core Curriculum requirements can be completed in four years.

Students in this combined major must consult with the DUS or other departmental adviser to work out a course plan, especially as this major requires students to study away for one semester.

Admissions

New York University's Office of Undergraduate Admissions supports the application process for all undergraduate programs at NYU. For additional information about undergraduate admissions, including application requirements, see How to Apply (<https://www.nyu.edu/admissions/undergraduate-admissions/how-to-apply.html>).

Program Requirements

The program requires the completion of 130 or 134 credits, depending on the concentration chosen. Students must choose from one of the concentrations below:

Global Public Health and Biology

Students in this combined major must consult with the DUS or other departmental adviser to work out a course plan, especially as this major requires students to study away for one semester. The major requirements (94 credits) must be completed with a grade of C or higher.

Note: The post-intermediate language requirement for the major applies only to students who matriculated before fall 2021; if they are granted a waiver or exemption from the requirement, they must take an additional (third) 4-credit elective in the major. Students who matriculate in and after fall 2021 have no post-intermediate language requirement for this major, and are all required to take three major electives.

Course	Title	Credits
General Education Requirements		
First-Year Seminar		4
EXPOS-UA 1	Writing The Essay:	4
Foreign Language ¹		16
Texts and Ideas		4
Cultures and Contexts		4
Societies and the Social Sciences		4
Expressive Culture		4
Major Requirements		
<i>Global Public Health Requirements</i>		
UGPH-GU 10	Health and Society in a Global Context (no prerequisites) ^{2,3}	4
BIOL-UA 42	Biostatistics ⁴	4
UGPH-GU 30	Epidemiology for Global Health ^{3,5}	4
UGPH-GU 40	Health Policy in a Global World	4
UGPH-GU 50	Environmental Health in a Global World	4
UGPH-GU 60	Undergraduate Experiential Learning in Global Public Health	4
<i>Foreign Language Course</i>		
Select one foreign language course above the intermediate two level ⁶		4

*Biology Core Courses*⁷

BIOL-UA 11	Principles of Biology I	4
BIOL-UA 12		4
BIOL-UA 21	Molecular and Cell Biology I ⁸	4
BIOL-UA 22		4

Biology Emphasis Area

BIOL-UA 223	Molecular and Cell Biology Laboratory ¹¹	1
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Select two upper-level biology courses from one of these three areas:⁹

Genetics and Genomics

Infectious Diseases

Environmental Health

Additional Required Courses in Science and Mathematics

Chemistry:

CHEM-UA 125	General Chemistry I & Laboratory	5
CHEM-UA 126	General Chemistry II & Laboratory	5
CHEM-UA 225	Organic Chemistry I & Laboratory	5
CHEM-UA 226	Organic Chemistry II & Laboratory	5

Physics:

PHYS-UA 11	General Physics I	5
PHYS-UA 12	General Physics II	5

Mathematics:

MATH-UA 121	Calculus I	4
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Study Away Requirement		8-12
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Total Credits **134**

1

The foreign language requirement is satisfied upon successful completion through the Intermediate level of a language. This may be accomplished in fewer than 16 credits, but those credits must then be completed as elective credit.

2

UGPH-GU 10 Health and Society in a Global Context is the prerequisite or corequisite for UGPH-GU 20 Biostatistics for Public Health, UGPH-GU 30 Epidemiology for Global Health, UGPH-GU 40 Health Policy in a Global World, and UGPH-GU 50 Environmental Health in a Global World.

3

UGPH-GU 10 Health and Society in a Global Context, UGPH-GU 20 Biostatistics for Public Health, and UGPH-GU 30 Epidemiology for Global Health are firm prerequisites for UGPH-GU 60 Undergraduate Experiential Learning in Global Public Health.

4

Taken in lieu of UGPH-GU 20 Biostatistics for Public Health.

5

UGPH-GU 30 Epidemiology for Global Health is an additional (recommended) prerequisite or corequisite for UGPH-GU 40 Health Policy in a Global World.

6

• **This requirement applies only to students who matriculated before fall 2021; students who matriculate in and after fall 2021 do not take this additional course.**

• Students in the former category may petition for a waiver from the requirement, or may use an NYU language placement or language exemption exam to meet this requirement. If they successfully waive or exempt out of the requirement, they **must** take an additional (third) 4-point major elective (see below) to satisfy the total number of credits required for the major. For more details, consult the archived PDF of the 2020-2022 CAS Bulletin at bulletin.cas.nyu.edu. (<http://bulletin.cas.nyu.edu/>), or discuss with a major adviser.

• Students in the latter category are all required to take a third elective in the major (see below) to replace the discontinued (for them) 4-point post-intermediate language requirement and satisfy the total number of credits required for the major.

7

Note: Biology majors are not required to register for the 1-credit BIOL-UA 123. It is intended for prehealth students not majoring in biology.

8

Note: It is strongly recommended that students in this combined major take the optional 1-credit BIOL-UA 223 Molecular and Cell Biology Laboratory concurrently with BIOL-UA 21 Molecular and Cell Biology I.

9

A current list of courses satisfying each area is maintained on the official web site of the Department of Biology.

10

• One additional biology elective **must** be completed by **all** students pursuing this major. A current list of courses approved as electives is maintained on the official web site of the Department of Biology.

• A second (and, for some students, also a third) elective must be completed that either is one of these approved biology electives or an elective approved by the GPH program, as follows:

- Students who matriculate in and after fall 2021 must take three major electives in total. The third elective replaces the discontinued (for them) post-intermediate language requirement in this major.

- Students who matriculated before fall 2021 technically have a major elective requirement of only two courses/8 points; however, if they waive or exempt out of the major's post-intermediate language requirement, they must take a third major elective for 4 points.

11

This course is strongly recommended. Brings total credit requirement to 135 credits.

Global Public Health and Chemistry

The major requirements (90 credits) must be completed with a grade of C or higher.

Note: The post-intermediate language requirement for the major applies only to students who matriculated before fall 2021; if they are granted a waiver or exemption from the requirement, they must take an additional (third) 4-credit elective in the major. Students who matriculate in and after

fall 2021 have no post-intermediate language requirement for this major, and are all required to take three major electives.

Course	Title	Credits
General Education Requirements		
First-Year Seminar		4
EXPOS-UA 1	Writing The Essay:	4
Foreign Language ¹		16
Texts and Ideas		4
Cultures and Contexts		4
Societies and the Social Sciences		4
Expressive Culture		4
Major Requirements		
<i>Global Public Health Requirements</i>		
UGPH-GU 10	Health and Society in a Global Context (no prerequisites) ^{2,3}	4
UGPH-GU 20	Biostatistics for Public Health ³	4
UGPH-GU 30	Epidemiology for Global Health ^{3,4}	4
UGPH-GU 40	Health Policy in a Global World	4
UGPH-GU 50	Environmental Health in a Global World	4
UGPH-GU 60	Undergraduate Experiential Learning in Global Public Health	4
<i>Foreign Language Course</i>		
Select one foreign language course above the intermediate two level ⁵		4
<i>Chemistry Core Courses</i>		
CHEM-UA 125 & CHEM-UA 126	General Chemistry I & Laboratory and General Chemistry II & Laboratory ⁶	10
Select one of the following:		10
CHEM-UA 225 & CHEM-UA 226	Organic Chemistry I & Laboratory and Organic Chemistry II & Laboratory	
CHEM-UA 227 & CHEM-UA 228	Majors Organic Chemistry I & Laboratory and Majors Organic Chemistry II & Laboratory	
CHEM-UA 651 & CHEM-UA 652	Quantum Mechanics & Spectroscopy and Thermodynamics & Kinetics	8
CHEM-UA 881 & CHEM-UA 882	Biochemistry I and	8
<i>Additional Required Courses in Science and Mathematics</i>		
Mathematics:		
MATH-UA 121	Calculus I	4
MATH-UA 122	Calculus II ⁷	4
Physics:		
PHYS-UA 11	General Physics I ⁸	5
PHYS-UA 12	General Physics II ⁸	5
Study Away Requirement		8-12
Total Credits		130

1

The foreign language requirement is satisfied upon successful completion through the Intermediate level of a language. This may be accomplished in fewer than 16 credits, but those credits must then be completed as elective credit.

2

UGPH-GU 10 Health and Society in a Global Context is the prerequisite or corequisite for UGPH-GU 20 Biostatistics for Public Health, UGPH-GU 30 Epidemiology for Global Health, UGPH-GU 40 Health Policy in a Global World, and UGPH-GU 50 Environmental Health in a Global World.

3

UGPH-GU 10 Health and Society in a Global Context, UGPH-GU 20 Biostatistics for Public Health, and UGPH-GU 30 Epidemiology for Global Health are firm prerequisites for UGPH-GU 60 Undergraduate Experiential Learning in Global Public Health.

4

UGPH-GU 30 Epidemiology for Global Health is an additional (recommended) prerequisite or corequisite for UGPH-GU 40 Health Policy in a Global World.

5

• **This requirement applies only to students who matriculated before fall 2021; students who matriculate in and after fall 2021 do not take this additional course.**

• Students in the former category may petition for a waiver from the requirement, or may use an NYU language placement or language exemption exam to meet this requirement. If they successfully waive or exempt out of the requirement, they **must** take an additional (third) 4-point major elective (see below) to satisfy the total number of credits required for the major. For more details, consult the archived PDF of the 2020-2022 CAS Bulletin at bulletin.cas.nyu.edu (<http://bulletin.cas.nyu.edu/>), or discuss with a major adviser.

• Students in the latter category are all required to take a third elective in the major (see below) to replace the discontinued (for them) 4-point post-intermediate language requirement and satisfy the total number of credits required for the major.

6

The one-semester CHEM-UA 129 Accelerated General Chemistry may be taken by qualified students and substitutes for this sequence.

7

Advanced Placement credit for Calculus II (a score of 5 on BC Calculus) is not accepted for this major requirement. Students with this AP credit must either (1) take Calculus II at NYU and forfeit 4 of the 8 AP credits, or (2) register for one of the following: CHEM-UA 140 Mathematics of Chemistry, MATH-UA 123 Calculus III or MATH-UA 140 Linear Algebra, using the BC credits as a prerequisite.

8

Credit for AP Physics C: Mechanics is accepted for PHYS-UA 11 General Physics I and credit for AP Physics C: Electricity and Magnetism is accepted for PHYS-UA 12 General Physics II, but only for students who are not prehealth. No other AP or equivalent international credit is accepted. (Because of medical, dental, etc., school admissions requirements, students on the prehealth track cannot use AP Physics C credit to place out of either or both semesters of General Physics.)

9

- Three additional electives must be completed in the GPH program or chemistry, by advisement. For students who matriculate in and after fall 2021, the third elective replaces the discontinued (for them) post-intermediate language requirement in this major.
- Students who matriculated before fall 2021 technically have a major elective requirement of only two courses/8 points; however, if they waive or exempt out of the major's post-intermediate language requirement, they **must** take a third major elective for 4 points.

Study Away

All majors must also study away for one semester. Programs of study are planned with the director of undergraduate studies in the chosen CAS department. The e-mail address for general inquiries from CAS students is cas.gph@nyu.edu.

Sample Plan of Study Global Public Health and Biology

Course	Title	Credits
1st Semester/Term		
BIOL-UA 11	Principles of Biology I	4
CHEM-UA 125	General Chemistry I & Laboratory	5
MATH-UA 121	Calculus I	4
First-Year Seminar		4
Credits		17
2nd Semester/Term		
BIOL-UA 12		4
CHEM-UA 126	General Chemistry II & Laboratory	5
UGPH-GU 10	Health and Society in a Global Context	4
EXPOS-UA 1	Writing The Essay:	4
Credits		17
3rd Semester/Term		
BIOL-UA 21	Molecular and Cell Biology I	4
BIOL-UA 223	Molecular and Cell Biology Laboratory (strongly recommended; total credits for degree will equal 135)	1
CHEM-UA 225	Organic Chemistry I & Laboratory	5
Foreign Language		4
Texts and Ideas		4
Credits		17
4th Semester/Term		
BIOL-UA 22		4
CHEM-UA 226	Organic Chemistry II & Laboratory	5
Foreign Language		4
Cultures and Contexts		4
Credits		17
5th Semester/Term		
BIOL-UA 42	Biostatistics	4
UGPH-GU 30	Epidemiology for Global Health	4
PHYS-UA 11	General Physics I	5
Foreign Language		4
Credits		17
6th Semester/Term		
UGPH-GU 40	Health Policy in a Global World	4
PHYS-UA 12	General Physics II	5
Foreign Language		4
Biology Emphasis Area 1 of 2 ¹		4
Credits		17
7th Semester/Term		
UGPH-GU 50	Environmental Health in a Global World	4

Expressive Culture	4	
Biology Emphasis Area 2 of 2 ¹	4	
Additional Biology Elective ²	4	
Credits		16
8th Semester/Term		
UGPH-GU 60	Undergraduate Experiential Learning in Global Public Health	4
Additional Major Elective 1 of 2 ³		4
Additional Major Elective 2 of 2 ³		4
Societies and the Social Sciences		4
Credits		16
Total Credits		134

1

Students select two upper-level Biology courses from one of the following three areas: genetics and genomics; infectious diseases; or environmental health; a current list of courses satisfying each area is maintained on the official website of the Department of Biology.

2

Must be completed by all students pursuing this concentration; a current list of upper-level courses satisfying this requirement is maintained on the official website of the Department of Biology.

3

Chosen from courses in the GPH program or in Biology, by advisement). Note: students who matriculated before fall 2021 take only **one** additional major elective, but **must take** one foreign language course above the intermediate two level.

Global Public Health and Chemistry

Course	Title	Credits
1st Semester/Term		
CHEM-UA 125	General Chemistry I & Laboratory	5
MATH-UA 121	Calculus I	4
UGPH-GU 10	Health and Society in a Global Context	4
First-Year Seminar		4
Credits		17
2nd Semester/Term		
CHEM-UA 126	General Chemistry II & Laboratory	5
MATH-UA 122	Calculus II	4
UGPH-GU 20	Biostatistics for Public Health	4
Expository Writing		4
Credits		17
3rd Semester/Term		
CHEM-UA 225 or CHEM-UA 227	Organic Chemistry I & Laboratory or Majors Organic Chemistry I & Laboratory	5
UGPH-GU 30	Epidemiology for Global Health	4
Foreign Language		4
Texts and Ideas		4
Credits		17
4th Semester/Term		
CHEM-UA 226 or CHEM-UA 228	Organic Chemistry II & Laboratory or Majors Organic Chemistry II & Laboratory	5
UGPH-GU 40	Health Policy in a Global World	4
Foreign Language		4
Cultures and Contexts		4
Credits		17
5th Semester/Term		
CHEM-UA 881	Biochemistry I	4
PHYS-UA 11	General Physics I	5
Foreign Language		4

Expressive Culture		4
	Credits	17
6th Semester/Term		
CHEM-UA 882		4
PHYS-UA 12	General Physics II	5
Foreign Language		4
Societies and the Social Sciences		4
	Credits	17
7th Semester/Term		
CHEM-UA 651	Quantum Mechanics & Spectroscopy	4
UGPH-GU 50	Environmental Health in a Global World	4
Additional Major Elective 1 of 3 ¹		4
Additional Major Elective 2 of 3 ¹		4
	Credits	16
8th Semester/Term		
CHEM-UA 652	Thermodynamics & Kinetics	4
UGPH-GU 60	Undergraduate Experiential Learning in Global Public Health	4
Additional Major Elective 3 of 3 ¹		4
	Credits	12
	Total Credits	130

1

Chosen from courses in the GPH program or in Chemistry, by advisement. Note: students who matriculated before fall 2021 take only **two** additional major electives, but **must take** one foreign language course above the intermediate two level.

Learning Outcomes

Upon successful completion of the program, graduates will:

Biology

1. Demonstrate a foundation of knowledge in current concepts of, and the mechanisms underlying, living systems.
2. Utilize skills that enable them to reason critically and to analyze primary literature in the life sciences.
3. Conduct problem-solving, including quantitative analysis.
4. Use the scientific method to design and implement controlled experiments or tests to address explicit hypotheses.
5. Communicate scientific ideas in both oral and written formats, and also collaborate on common scientific projects.
6. Recognize key historical milestones in the development and evolution of the field of public health with examples from both the U.S. and international contexts.
7. Describe and assess the biological, social, environmental, and structural determinants of health by applying interdisciplinary approaches and methodologies.
8. Explain key data analytic techniques and epidemiologic concepts for measuring disease occurrence and frequency and how the information obtained from these measures is used to assess the health of populations.
9. Apply public health promotion and prevention concepts to engage in collaborative and culturally relevant public health activities.
10. Connect public health concepts to disciplinary practice in the field.

Chemistry

1. Demonstrate a fundamental command of chemistry, as well as of the subdisciplines of organic, inorganic, and physical chemistry.
2. Display mastery of laboratory skills in organic and physical chemistry.

3. Demonstrate familiarity with contemporary problems in chemistry and both articulate these problems and propose well-considered solutions.
4. Demonstrate expertise in modern research methods as applied in contemporary scientific studies.
5. Recognize key historical milestones in the development and evolution of the field of public health with examples from both the U.S. and international contexts.
6. Describe and assess the biological, social, environmental, and structural determinants of health by applying interdisciplinary approaches and methodologies.
7. Explain key data analytic techniques and epidemiologic concepts for measuring disease occurrence and frequency and how the information obtained from these measures is used to assess the health of populations.
8. Apply public health promotion and prevention concepts to engage in collaborative and culturally relevant public health activities.
9. Connect public health concepts to disciplinary practice in the field.

Policies

General Policies Applying to the Combined Global Public Health Majors

CAS students are allowed to count 16 credits from the other schools of the University toward the baccalaureate degree. Four of the six core UGPH-GU courses required for the combined GPH majors are treated as liberal arts courses and therefore do not count against the 16-credit allowance: UGPH-GU 10, 20, 30, and 50. (These four courses are exempt from the 16-credit rule both for declared GPH majors and also for CAS students who simply take one or more of them as electives.) The two required GPH core courses UGPH-GU 40 and 60 are not exempt from the 16-credit rule, and together use up 8 credits of each student's 16-credit allowance. Any other UGPH-GU courses besides 10, 20, 30, and 50 will also count against the 16 credits.

Students may request additional non-CAS, non-liberal arts credits beyond the 16-credit limit through the College Advising Center, 726 Broadway, 7th floor; 212-998-8130.

No UGPH-GU courses can count toward the 64 credits that internal or external transfer students are required to complete in CAS (-UA) courses.

Students must earn a C or better in all courses for their combined major and maintain a 2.0 major GPA. Courses graded Pass/Fail cannot be counted toward the major.

The GPH tracks with anthropology, history, and sociology all satisfy the College Core Curriculum requirement in Societies and the Social Sciences. However, the two GPH concentrations in science do not satisfy this requirement. None of the UGPH-GU courses can exempt students from any part of the Core's Foundations of Contemporary Culture.

Transfer Student Policies Applying to the Combined Global Public Health Majors

Transfer students to CAS must complete at least half of their entire combined GPH major at NYU, with at least half of the CAS coursework required for the major completed at NYU. In addition, GPH stipulates that transfer credit cannot be used for more than one of the six core GPH requirements (the other five must always be completed at NYU).

The internship course (UGPH-GU 60) can never be satisfied with transfer credit.

Applicants to schools of the health professions who are pursuing one of the science GPH majors must complete at least five of the required prehealth science courses at NYU in order to be eligible for a committee interview and letter from the CAS Preprofessional Advising Center.

Some transfer students may therefore be required to complete more than half of their GPH major at NYU to satisfy these policies, regardless of transfer coursework presented.

NYU Policies

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

College of Arts and Science Policies

A full list of relevant academic policies can be found on the CAS Academic Policies page (<https://bulletins.nyu.edu/undergraduate/arts-science/academic-policies/>).