

Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

Milken Institute School of Public Health Bachelor of Science in Public Health 2021-2022

Note: All curriculum revisions will be updated
immediately on the GWSPH website
(<http://publichealth.gwu.edu>).

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BACKGROUND

Established in 1997, GW's Milken Institute School of Public Health (GWSPH) is fully accredited by the Council on Education for Public Health (CEPH). GWSPH offers several undergraduate degrees and programs, including the Bachelor of Science in Public Health, Bachelor of Science in Public Health with a Pre-Medical Professions concentration, Bachelor of Science in Exercise Science (with various concentrations), Bachelor of Science in Nutrition Science, Bachelor of Science in Nutrition Science with a Pre-Medical Professions Concentration, Minors in Public Health, Exercise Science, Nutrition Science, and Bioinformatics, and dual BS/MPH degrees in Public Health and Nutrition Science. To learn more about GWSPH, visit <http://publichealth.gwu.edu>.

MISSION STATEMENT

In the context of a liberal arts and sciences tradition that emphasizes critical thinking, analysis, and synthesis of information, students in the Bachelor of Science in Public Health program will acquire knowledge and skills in the critical component elements of public health. Students with a Pre-Medical Professions (PMP) concentration will also acquire knowledge and skills in areas critical to pursuing a future in the medical profession.

VISION

The Bachelor of Science in Public Health program strives to be a leader in the development of undergraduate public health education. The program hopes to matriculate students who will carry forward their public health knowledge and skills into diverse fields of professional practice, including the medical professions. Our students will bring an informed and evidence-based viewpoint to public health issues affecting medical practice and society at large.

VALUES

While nurturing students' capacity to think analytically and creatively, we strive to deepen their commitment to improving the public's health and bringing diverse public health viewpoints to their future professions.

LEARNING OBJECTIVES in the LIBERAL ARTS TRADITION

The Bachelor of Science (BS) in Public Health, founded in the liberal arts tradition often associated with small private colleges, is a respected and proven model for teaching students to assume responsibility for their own life-long learning. Liberal arts education has its foundation in both the arts (*trivium*, based on three disciplines: language, logic, and rhetoric) and the sciences (*quadrivium*, based on four disciplines of

natural phenomena: arithmetic, geometry, astronomy, and music) as studied in medieval universities. While contemporary arts and sciences programs have expanded well beyond the imagination and expectations of medieval founders, it is within the context of this liberal arts tradition that the BS in Public Health strives to prepare students for progressive independence, maturity, knowledge of the world, understanding of diverse inhabitants, and respect for differing points of view. Because this degree is intended to include technical detail and analytic skills, grounded in a liberal arts philosophical base, it also has the educational objectives of nurturing critical thinking, analysis, and synthesis of information, and recognizing the historical and societal associations of current trends in public health and health care delivery. The BS in Public Health with a PMP concentration is intended to provide students with a major that both achieves the goals of a liberal arts education in public health and provides them with the requisite knowledge and skills to pursue a future in the medical professions.

PUBLIC HEALTH CORE COURSE COMPETENCIES

The following competencies are designed to be achieved by all public health majors through the indicated courses. Upon completion of the Bachelor of Science in Public Health, students will be able to:

1. Overview of Public Health: Address the history and philosophy of public health as well as its core values, concepts, and functions across the globe and in society (PUBH 1101, 2110, 3132, 3133, 4140W)
2. Role and Importance of Data in Public Health: Address the basic concepts, methods, and tools of public health data collection, use, and analysis and why evidence-based approaches are an essential part of public health practice (PUBH 1101, 2110, 2142, 3131, 3132, 3133, 3135W, 4140W, and the Research Methods Selective)
3. Identifying and Addressing Population Health Challenges: Address the concepts of population health, and the basic processes, approaches, and interventions that identify and address the major health-related needs and concerns of populations (PUBH 1101, 2110, 2112, 3130, 3131, 3132, 3133, 3135W, 4140W)
4. Human Health: Address the underlying science of human health and disease including opportunities for promoting and protecting health across the life course (PUBH 1101, 2110, 3132, 3133)
5. Determinants of Health: Address the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities (PUBH 1101, 2110, 2112, 3132, 3133, 3135W, 4140W)
6. Project Implementation: Address the fundamental concepts and features of project implementation, including planning, assessment, and evaluation (PUBH 2112, 3130, 3133, 4140W)
7. Overview of the Health System: Address the fundamental characteristics and organizational structures of the U.S. health system as well as to the differences in systems in other countries (PUBH 1101, 3130, 3133, 3135W)
8. Health Policy, Law, Ethics, and Economics: Address the basic concepts of legal, ethical, economic, and regulatory dimensions of health care and public health policy, and the roles, influences and responsibilities of the different agencies and branches of government (PUBH 1101, 3130, 3133, 3135W)
9. Health Communications: Address the basic concepts of public health-specific communication, including technical and professional writing and the use of mass media and electronic technology (PUBH 1101, 2110, 2112, 3130, 3131, 3133, 3135W, 4140W)

CAREERS

The BS in Public Health strives to increase awareness and understanding of public health principles among students who are preparing for professional careers in fields such as:

- Allied Health
- Government
- Business
- Health Education
- Health Services Administration
- Law
- Medicine, Nursing, and other health professions
- Public Health (both those who plan to pursue graduate degrees in public health and students who intend to pursue entry-level jobs in specific sectors of public health, health services, or public policy for which a bachelor's level education is appropriate)

ADMISSIONS

Incoming freshman and external transfer students may apply directly to the major through GW admissions.

Internal transfer students accepted into the program matriculate in the semester following admission. We will accept transfers from students with a GPA of 2.75 or higher. Students should use the internal transfer form found on the Registrar's website: <https://registrar.gwu.edu/undergraduate-internal-transfer>. The internal transfer application deadline is October 15th in the fall semester and February 15th in the spring semester.

Students follow the prescribed curriculum effective in the year that they matriculate into the BS in Public Health program.

DEGREE REQUIREMENTS

There are three categories of Degree Requirements for all Public Health students: (1) University General Education Requirements; (2) Public Health Core Courses; and (3) Public Health Electives. Students in the PMP concentration will also take PMP requirements/recommended courses. Students take additional elective courses to reach the 120 total credits required to graduate.

General Education Requirements (19 credits)

The Public Health program follows the University General Education Requirements. **See the University Bulletin website for the most up-to-date version of Gen Ed requirements and approved courses:** <http://bulletin.gwu.edu/university-regulations/general-education/>

University General Education Requirements (GenEd) Courses** (See <i>University Bulletin for General Education Requirements</i>)		
University Writing	UW 1020 UNIVERSITY WRITING OR HONR 1015	4
Humanities	ONE COURSE IN HUMANITIES http://bulletin.gwu.edu/university-regulations/general-education/	3
Mathematics or Statistics	ONE COURSE IN EITHER MATH OR STATISTICS http://bulletin.gwu.edu/university-regulations/general-education/	3
Science	ONE NATURAL OR PHYSICAL SCIENCE COURSE WITH LABORATORY EXPERIENCE http://bulletin.gwu.edu/university-regulations/general-education/	3
Social Science	TWO COURSES IN THE SOCIAL SCIENCES http://bulletin.gwu.edu/university-regulations/general-education/	6
TOTAL GenEd		19

Prerequisite Requirements: Please note that these are prerequisites for required core courses, rather than prerequisites to apply to the program.

<i>Required Course</i>	<i>Prerequisite(s)</i>
PUBH 2110	BISC 1005*, 1006*, 1007*, 1008*, BISC 1111* (formerly BISC 1115/1125), BISC 1112* (formerly BISC 1116/1126), or HONR 1033* (<i>Scientific Reasoning & Discovery: Biology Only</i>)
PUBH 2112	PUBH 1101- Introduction to Public Health (can be taken concurrently)
PUBH 3130	ECON 1011- Principles of Economics I (Microeconomics)*
PUBH 3131	PUBH 2142 - Introduction to Biostatistics for Public Health**
PUBH 3133	<i>Restricted to Juniors and Seniors.</i>
PUBH 3135W	PUBH 1101- Introduction to Public Health. <i>Restricted to Juniors and Seniors.</i>
PUBH 4140W	PUBH 1101, PUBH 3130, PUBH 3135W, Research Methods Selective, and at least 4 of these 5 courses^: PUBH 2110, PUBH 2112, PUBH 3131, PUBH 3132, and/or PUBH 3133. <i>Restricted to Seniors only.</i>

*These courses also count as GenEd requirements.

** Public Health majors must take PUBH 2142, however Public Health minors and other students may take STAT 1051, 1053 or 1127 as a prerequisite for PUBH 3131, though PUBH 2142 is preferred.

^One core course from this list can be completed concurrently with PUBH 4140W, but students are encouraged to complete all 5 classes PRIOR to enrolling in PUBH 4140W

Public Health Required Core & Research Methods Selective (34 credits)

The public health major curriculum constitutes 46 credits: *34 core credit credits and 12 elective credit* offered through the GWSPH.

Public Health Core Courses (34 Credits)					
Required Courses (31 Credits)			Research Methods Selective^ (3 credits) Students will choose one (1) of these courses		
Course	Credits	Course Title	Choose 1 Course	Credits	Course Title
PUBH 1010*	1	First-Year Experience in Public Health	PUBH 3152	3	Qualitative Methods in Public Health
PUBH 1101	3	Introduction to Public Health and Health Services	PUBH 3199	3	Public Health Research Methods
PUBH 2110	3	Public Health Biology	EXNS 3111W	3	Exercise and Nutrition Science Research Methods
PUBH 2112	3	Principles of Health Education and Health Promotion	^Additional research methods course as pre-approved by the Program Director		
PUBH 2142	3	Introduction to Biostatistics for Public Health**			
PUBH 3130	3	Health Services Management and Economics			
PUBH 3131	3	Epidemiology: Measuring Health and Disease			
PUBH 3132	3	Health and Environment			
PUBH 3133	3	Global Health and Development			
PUBH 3135W	3	Health Policy			
PUBH 4140W	3	Senior Seminar			

*PUBH 1010: Internal transfer students (i.e., transferring from within another program or school at GW) may satisfy this requirement if they took EXNS 1103, EXNS 1109, or a first-year experience course at another school within GW. Transfer students from other colleges/universities are also exempt from this requirement.

**PUBH 2142 is a prerequisite for PUBH 3131.

Public Health Electives (12 credits)

No more than 9 elective credits may be taken through approved study abroad programs or non-GW domestic courses. Electives must be taken from the Approved Public Health Elective list or with advanced approval of the Program Director.

Concentration Requirements:

No Concentration:

BS Public Health - No Concentration - Must Fulfill the Following Degree Requirements	
All General Education Requirements (GenEd)	19 Credits
All Public Health Core Curriculum/Research Methods Requirements <ul style="list-style-type: none"> • C- or better required in core Public Health courses 	34 Credits
Public Health Electives: <ul style="list-style-type: none"> • Please see the “Guided Electives” worksheet for a list of approved courses • C- or better required in Public Health Electives 	12 Credits
General Electives	55 Credits
Total Number of Credits	120

Pre-Medical Professionals Concentration:

Pre-Medical Professionals Concentration Required Courses					
Course	Course Title	Credits	Course	Course Title	Credits
BISC 1111 ^a (formerly BISC 1115/1125)	Intro Biology: Cells & Molecules*	4	BISC 3261 or CHEM 3165	Intro to Biochemistry or Biochemistry I	3
BISC 1112 ^a (formerly BISC 1116/1126)	Intro Biology: The Biology of Organisms	4	MATH 1220 or 1221 or 1231 ^a or 1232 ^{a*}	Calculus with Precalculus I (or higher level MATH)	3
CHEM 1111 ^a	General Chemistry I	4	PHYS 1011 ^a and 1012 ^a OR PHYS 1021 ^a and 1022 ^a OR PHYS 1025 and 1026	General or University Physics I and II	8
CHEM 1112 ^a	General Chemistry II	4			
CHEM 2151/2153	Organic Chemistry I and Lab	4	PSYC 1001 or SOC 1001	General Psychology or Intro to Sociology	3
CHEM 2152/2154	Organic Chemistry II and Lab	4			
Total Pre-Medical Profession Concentration Requirements (*these courses also count as GenEd requirements)					41

^a Students who receive AP credit for these courses do not need to repeat these courses at GW. However, medical schools will expect that students have a minimum of 8 credit hours of upper level BISC coursework **with lab components** and may expect students to have a specific number of semesters/credits of CHEM coursework and advanced PHYS coursework.

Additional Courses Recommended for Pre-Medical Professionals		
English or Writing ^a	Required/Strongly Recommended	6
PUBH 2142 ^b or STAT 1051, 1053, or 1127	Required/Strongly Recommended	3
BISC 2202: Cell Biology	Helpful/Not Required	3
BISC 2207-8: Genetics	Helpful/Not Required	3-4
BISC 2322: Human Physiology	Helpful/Not Required	3
BISC 2337W: Intro Microbiology	Helpful/Not Required	4
Total PMP Additional Recommended Courses		22-23

^a May be fulfilled with UW20/WID courses; also meets GenEd requirements

^b This course is also required for the BSPH major

BS Public Health – PMP Concentration - Must Fulfill the Following Degree Requirements	
All General Education Requirements (GenEd) <ul style="list-style-type: none"> GenEds credit total = GenEds <i>plus</i> premedical concentration curricular requirements and recommendations 	54 - 71 Credits
All Public Health Core Curriculum/Research Methods Requirements <ul style="list-style-type: none"> C- or better required in core Public Health courses 	34 Credits
Public Health Electives <ul style="list-style-type: none"> Please see the “Guided Electives” worksheet for a list of approved courses C- or better required in Public Health Electives 	12 Credits
General Electives	3 - 20 Credits
Total Number of Credits	120

Pre-Health Concentration:

The pre-health concentration is comprised of two components: a set of required courses and a selective. Students must complete all required courses and choose at least four (4) courses from the list of selectives, based on their desired program requirements. Program requirements may vary by individual programs, so please review admissions requirements and consult with the [pre-health advisors](#). Substitutions will be considered on a case-by-case basis. Please contact your Academic Advisor if you would like to make a substitution.

Pre-Health Concentration Required Courses					
Course	Course Title	Credits	Course	Course Title	Credits
BISC 1111 ^{a*} (formerly BISC 1115/1125)	Intro Biology: Cells & Molecules	4	BISC 2336 and BISC 2337	Microbiology	4
BISC 1112 ^{a*} (formerly BISC 1116/1126)	Intro Biology: The Biology of Organisms	4	MATH 1220 or 1221* or 1231 ^{a*} or 1232 ^{a*}	Calculus with Precalculus I (or higher level MATH)	3
CHEM 1111 ^{a*}	General Chemistry I	4	PSYC 1001	General Psychology	3
CHEM 1112 ^{a*}	General Chemistry II	4			
EXNS 1110	Anatomy & Physiology I	4			
EXNS 1111	Anatomy & Physiology II	4			
Total Pre-Health Concentration Core Requirements					34

^a Students who receive AP credit for these courses do not need to repeat these courses at GW. Students should check with specific graduate programs to assess whether there are minimum expectations for advanced coursework in BISC, CHEM, and/or MATH.

*These courses also count at GenEd requirements.

Selective Courses – based on the Pre-Health concentration selected (See concentration table below.) (Choose 4 courses from this list.)					
Course	Course Title	Credits	Course	Course Title	Credits
PHYS 1011*	General Physics I	4	PUBH 3151W or HSCI 2105**	Current Issues in Bioethics	3
PHYS 1012*	General Physics II	4	HSSJ 2171	Child & Adolescent Development	3
PSYC 2011* or PSYC 2013*	Abnormal or Developmental Psychology	3	HSSJ 2172	Adult Development	3
EXNS 2119**	Intro to Nutrition Science	3	BISC 2207- 2208 (lab optional)	Genetics	3-4
CHEM 2151 and 2153	Organic Chemistry I and lab	4	BISC 2322	Human Physiology	3
CHEM 2152 and 2154	Organic Chemistry II and lab	4	BISC 3165 or CHEM 3165	Biochemistry I	3

*These courses also count as General Education requirements.

**These courses also count as Public Health Electives

Four (4) recommended selective courses are listed here by common pre-health fields. Note that most dentistry programs require an additional two courses:

Nursing	Physician Assistant	Physical Therapist	Dentistry
EXNS 2119	CHEM 2151/2153	PHYS 1011	CHEM 2151/2153
HSCI 2105	CHEM 2152/2154	PHYS 1012	CHEM 2152/ 2154
HSSJ 2171	BISC 3165 or CHEM 3165	PSYC 2011 or 2013	BISC 3165 or CHEM 3165
HSSJ 2172	BISC 2207/2208	BISC 2322	PHYS 1011
			PHYS 1012
			BISC 2207/2208

BS Public Health – Pre-Health Concentration - Must Fulfill the Following Degree Requirements	
All General Education Requirements (GenEd) • GenEd’s credit total = GenEds <i>plus</i> pre-health concentration courses	59 - 63 Credits
All Public Health Core Curriculum/Research Methods Requirements • C- or better required in core Public Health courses	34 Credits
Public Health Electives • Please see the “Guided Electives” worksheet for a list of approved courses • C- or better required in Public Health Electives	12 Credits
General Electives	11 - 15 Credits
Total Number of Credits	120

EXPECTATIONS OF STUDENTS/POLICIES

1. Consult your GWSPH Undergraduate Program Advisor prior to the first term's course registration and in future terms as needed. Students are expected to consult a program advisor in all matters affecting the program of study, such as substitutions, or withdrawals.
2. Students following the PMP and Pre-health concentrations must consult with the University Pre-Health advising team (<https://prehealth.gwu.edu/>) regarding pre-health expectations and procedures.
3. Students must earn a C- or higher in all courses required for the major (core and elective) to graduate with a BSPH major. All BSPH core and elective courses must be taken for a letter grade.
4. Students can double count BSPH courses with other majors/minor requirements so long as the other program allows it.
5. Students are responsible for reviewing, understanding, and following the policies and requirements as outlined in the Undergraduate Student Handbook (<https://publichealth.gwu.edu/content/services-students>) and the University's Bulletin (www.gwu.edu/~bulletin/).
6. Earn 120 total credits and satisfy all course requirements for the Public Health major and concentrations as listed above.

Course Descriptions, program information, and registration information can be found on the website: <http://publichealth.gwu.edu/academics> and <http://bulletin.gwu.edu/courses/PUBH/>.

PUBLIC HEALTH ELECTIVES, 2021-2022

Students may petition the BSPH program director for approval of a GW elective not listed below (syllabus must be provided).

AMERICAN STUDIES

AMST 3950	Topics: Narrative Medicine in American History <i>only</i>	3
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ANTHROPOLOGY

ANTH 3503	Psychological Anthropology	3
ANTH 3504	Illness, Healing, and Culture	3
ANTH 3513/3513W	Anthropology of Human Rights	3

BUSINESS ADMINISTRATION

BADM 4101/4101W	Business Ethics and the Legal Environment	3
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BIOCHEMISTRY

BIOC 3560	Diet, Health, & Longevity	3
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BIOLOGICAL SCIENCES

BISC 2450	Organic Evolution	3
BISC 3450 or 3450W	Evolutionary Medicine	3

COMMUNICATION

COMM 3179	Sexual Communication	3
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COMPUTER SCIENCE

CSCI 1011	Introduction to Programming with Java	3
CSCI 1012	Introduction to Programming with Python	3
CSCI 1121	Introduction to C Programming	3

ECONOMICS

ECON 2151	Economic Development	3
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EMERGENCY HEALTH SERVICES

EHS 2107 ¹	Theory and Practice of Research in a Clinical Setting	4
EHS 2109	Infectious Disease and Bioterrorism	3
EHS 3175	Community Risk Management and Safety in EHS	3

EXERCISE & NUTRITION SCIENCES

EXNS 1114	Community Nutrition	3
EXNS 1199	Topics in EXNS: International Nutrition <i>only</i>	3
EXNS 2116	Exercise and Health Psychology	3
EXNS 2119	Introduction to Nutrition Science	3
EXNS 2122	Food Systems in Public Health	3
EXNS 2123	Nutrition and Chronic Disease	3
EXNS 3995 ²	Undergraduate Research	0-6

GEOGRAPHY

GEOG 1003	Society and Environment	3
GEOG 2104	Introduction to Cartography and GIS	3
GEOG 2127	Population Geography	3
GEOG 2137	Environmental Hazards	3
GEOG 3106	Intermediate GIS	3

HISTORY

HIST 3363	Race, Medicine, and Public Health	3
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HEALTH & WELLNESS

HLWL 1106	Drug Awareness	3
HLWL 1109	Human Sexuality	3

HEALTH SCIENCES

HSCI 2101	Psychological Aspects of Health (Residential only)	3
HSCI 2105	Current Issues in Bioethics (may not be taken in a semester when PUBH 3151W is offered; students can receive BSPH elective credit for either HSCI 2105 or PUBH 3151W, but cannot receive BSPH elective credit for both)	3
HSCI 2118	Global Women's Health	1
HSCI 3100	Applied Health Equity in Washington, DC	1
HSCI 4103	Health Care Law/Regulation (may not be taken in a semester when PUBH 3136 is offered; students can receive BSPH elective credit for either HSCI 4103 or PUBH 3136, but cannot receive BSPH elective credit for both)	3

PHILISOPHY

PHIL 2124	Philosophies of Disability	3
PHIL 2125W	Philosophy of Race and Gender	3
PHIL 2281	Philosophy of the Environment	3

POLITICAL SCIENCE

PSC 2367 ³	Human Rights	3
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PSYCHOLOGY

PSYC 3128	Health Psychology	3
PSYC 3199	Substance Abuse and Addictions	3

PUBLIC HEALTH

PUBH 1102 ⁴	History of Public Health	3
PUBH 2113	Impact of Culture Upon Health	3
PUBH 2114	Environment, Health and Development	3
PUBH 2117	Service Learning in Public Health	3
PUBH 3115	Global Health and Human Rights	3
PUBH 3116	Global Health Systems Performance	3
PUBH 3136	Health Law	3
PUBH 3150	Sustainable Energy and Environmental Health	3
PUBH 3151W	Current Issues in Bioethics	3
PUBH 3199	Various Topics in Public Health	1-3
PUBH 3201	Introduction to Bioinformatics	3
PUBH 3202	Introduction to Genomics	3
PUBH 3995 ²	Undergraduate Research	1-6
PUBH 4199 ⁵	Independent Study	1-6
PUBH 4201	Practical Computing	3
PUBH 4202	Bioinformatics, Algorithms, and Data Structures	3

SOCIOLOGY

SOC 2189	Special Topics in Criminal Justice: Rethinking DC Youth & Policing only	3
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STATISTICS

STAT 2118	Regression Analysis	3
STAT 2183/2183W	Intermediate Statistics Lab/Package	3

WOMEN'S, GENDER, AND SEXUALITY STUDIES

WGSS 3170	Special Topics in Women's, Gender, and Sexuality Studies: Writing/Righting Black Girls' and Women's Health <i>only</i>	3
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*NOTE: Courses offered online may only be taken in the summer term

¹EHS 2107 cannot be double counted as an elective and as meeting the research methods requirement.

²EXNS/PUBH 3995: BSPH majors may apply up to 6 credits of Undergraduate Research toward their major elective requirement.

³Cannot be taken if ANTH 3513 was also taken.

⁴PUBH 1102 is an elective for BSPH students who were admitted to the program in or after Fall 2020 (and for all Public Health minors). For BSPH students admitted to the program in Spring 2020 or earlier, PUBH 1102 is a required course.

⁵PUBH 4199: BSPH majors may apply up to 6 credits of Independent Study toward their major elective requirement. This course must be taken for a grade; it cannot be taken Pass/Fail.