

Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

Department of Epidemiology and Biostatistics

Master of Public Health Epidemiology 2015-2016

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

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Mission

The mission of the Epidemiology Program is to educate graduate students by developing the necessary methodological and quantitative skills to work successfully in the field. While nurturing students' capacity to think critically and creatively, we strive to deepen their commitment to improving the public's health and to engaging in and promoting public service qualities we believe are essential for future epidemiologists and public health practitioners.

Goals

The goals of the Epidemiology Program are to ensure that graduates:

- Understand and adhere to high scientific standards for research;
- Understand and follow guidelines for ethical treatment of research participants;
- Can communicate research findings to a lay audience; and
- Respect cultural diversity throughout all of the above.

Course Requirements

All Milken Institute SPH MPH students who select the MPH Epidemiology Program enroll in Core Courses (15 credits), Program-Specific Courses (21 credits), and Electives (5 credits). The total 45 credit degree program also includes a Practicum (2 credits) and a Culminating Experience (2 credits) where students apply their didactic education in a real world setting. The curriculum sheets that follow describe the requirements for the MPH in Epidemiology.

Program-Specific Competencies

The Epidemiology specialization prepares students for epidemiological research and evaluation in academic, governmental, private-sector, and community health care sites. The curriculum prepares students to design and conduct studies, manage health data, and make leadership decisions in public health and clinical epidemiology. The following competencies were developed in concert with professors of epidemiology courses (at GWU as well as other CEPH-accredited MPH programs), epidemiology textbooks, conversations with prospective employers likely to hire MPH-epidemiology graduates, and experience teaching epidemiology courses to MPH students. ASPH Education Committee competencies were also consulted.

Upon completion of the MPH in Epidemiology, students will demonstrate functional competence to:

- Apply epidemiological and biomedical concepts in identifying and describing the determinants and the distribution of disease in human populations. Relevant courses: PubH 6247, 6252, 6014, 6015
- Identify and assess patterns of emerging diseases to postulate hypotheses and to identify appropriate strategies in order to evaluate the impact of health problems. Relevant courses: PubH 6014, 6015, 6247, 6252
- Enumerate and apply underlying principles and methods to design, plan, and conduct epidemiologic studies including observational and experimental designs, screening programs, public health surveillance, and other epidemiologic designs. Relevant courses: PubH 6247, 6252, 6014, 6015

- Identify the appropriate data analysis methods, conduct data analysis using computerized software program, and interpret the results from epidemiological studies. Relevant courses: PubH 6249, 6252, 6260, 6261, 6014, 6015
- Demonstrate proficiency in constructing and managing databases from epidemiological studies using statistical software, e.g. The SAS[®] System. Relevant courses: PubH 6249, 6260, 6052, 6014, 6015
- Synthesize data and relevant literature to interpret findings in a causal framework, write manuscripts, and make oral presentations. Relevant courses: PubH 6247, 6249, 6252, 6260, 6261, 6014, 6015
- Work in a multidisciplinary research team and recognize and appropriately respond to ethical and legal issues that arise in research. Relevant courses: PubH 6247, 6249, 6252, 6260, 6261, 6014, 6015
- Define and critically assess issues in at least two of the following specialty areas in epidemiology:
 - Clinical epidemiology such as decision analysis, cost-effectiveness to clinical and public health problems.
 - Major topics in infectious disease epidemiology, including emerging infectious diseases, drug resistant pathogens, and perinatal and neonatal infections.
 - Methods and issues of cancer epidemiology including descriptive and analytical studies with emphasis on genetic and molecular epidemiology.
 - Methods and issues of chronic disease Methods and issues of surveillance systems in public health.
 Relevant courses: PubH 6247, 6252, 6014, 6015

*Selected epidemiology-biostatistics topics/electives including 6258 and 6262

Sample Capstone Project Topics

Cancer:

- Inflammatory Breast Cancer
- Disparities in Cancer Diagnosis and Treatment
- Associations between Behavioral Factors and Cancer

HIV/AIDS:

- Use of Technology in the Care of HIV-Infected Individuals
- Care of Pediatric and Adolescent HIV-Infected Patients
- Adherence to Antiretroviral Medications
- Development of Resistance to Antiretroviral Medications

Infectious Disease:

- Listeria at Meat Packaging Plants
- Food Contamination and Surveillance

Other:

- Racial/Ethnic Disparities in Low Birth Weight
- Use of Standardized Case Definitions in Adverse Events following Immunization Surveillance

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Master of Public Health Epidemiology Program

Program-at-a-Glance

2015-2016

Required Core Courses				
Required Core Courses		Credits	Semester Offered	Grade
PubH 6001	Biological Concepts for Public Health	2	Fall, Spring, Summer I	
PubH 6002	Biostatistical Applications for Public Health	3	Fall, Spring, Summer 10 wk	
PubH 6003	Principles and Practice of Epidemiology	3	Fall, Spring, Summer 10 wk	
PubH 6004	Environmental and Occupational Health in a Sustainable World	2	Fall, Spring, Summer I	
PubH 6006	Management and Policy Approaches to Public Health	3	Fall, Spring, Summer 10 wk	
PubH 6007	Social and Behavioral Approaches to Public Health	2	Fall, Spring, Summer I	
Sub-Total	Core Credits	15		
Required Program-Specific Courses				
Required Program Specific Courses		Credits	Semester Offered	Grade
PubH 6247	Design of Health Studies	3	Fall, Spring	
PubH 6249	Use of Statistical Packages: Data Management and Data Analysis	3	Fall, Spring	
PubH 6252	Advanced Epidemiology Methods	3	Fall, Spring	
PubH 6260	Advanced Data Analysis for Public Health	3	Fall, Spring	
PubH 6261	Epidemiology and Biostatistics Skills Building Seminar	1	Fall, Spring	
Sub-Total	Epidemiology Methods Credits	13		
Epidemiology Content Foundation Courses (Select at least 4 credits from the list below.)				
Required Epidemiology Content Foundation Courses		Credits	Semester Offered	Grade
PubH 6242	Clinical Epidemiology and Decision Analysis	2	Spring	
PubH 6244	Cancer Epidemiology	2	Spring	
PubH 6245	Infectious Disease Epidemiology	2	Spring	
PubH 6250	Epidemiology of HIV/AIDS	2	Fall	
PubH 6259	Epidemiology Surveillance in Public Health	2	Spring	
Sub-Total	Epidemiology Content Foundation Credits	4		

Curriculum continued on next page . . .

Department of Epidemiology-Biostatistics Electives				
(Select at least 4 credits from the list below. May also use credits from the Content Foundation Courses above.)				
Epidemiology-Biostatistics Electives		Credits	Semester Offered	Grade
PubH 6238	Molecular Epidemiology	1	Summer	
PubH 6239	Epidemiology of Food and Waterborne Diseases	1	Summer	
PubH 6240	Pediatric HIV/AIDS	1	Summer	
PubH 6241	Nutritional Epidemiology	2	Fall	
PubH 6243	Topics in Clinical Epidemiology and Decision Analysis	1	Spring	
PubH 6253	Issues in HIV Care and Treatment	1	Fall	
PubH 6255	Organizational Responses to the Local, National & Global HIV/AIDS Epidemics	2	Spring	
PubH 6258	Advanced Topics in Biostatistical Consulting (Instructor's Approval Required)	1	Spring	
PubH 6262	Introduction to Geographic Information Systems	1	Summer, Fall, Spring	
PubH 6263	Advanced GIS	1	Fall, Spring	
PubH 6267	Time Series Applications in Public Health	1	Spring	
PubH 6268	Advanced SAS	1	Summer	
PubH 6269	Reproductive and Perinatal Epidemiology	1	Summer	
PubH 6271	Disaster Epidemiology: Methods and Applications	1	Summer	
PubH 6270	HIV/AIDS Surveillance	1	Summer	
PubH 6272	Epidemiology of Infectious Agents Associated with Human Cancer	1	Summer	
PubH 6273	Ethnographic Methods as Applied in Public Health	1	Fall	
PubH 6274	Emerging Infectious Diseases for Public Health Professionals	2	Fall	
PubH 6281	Analysis of Complex Survey Data Using SAS/STATA	1	TBA	
PubH 6282	Introduction to R Programming	1	Summer	
PubH 6484	Prevention and Control of Vector Borne Disease	2	Spring	
PubH 6485	Control of Water and Sanitation Related Diseases	1	Summer	
PubH 6299	Behavioral Epidemiology	1	TBA	
PubH 6299	Chronic Disease Epidemiology	2	Fall	
PubH 6299	Epidemiology of Sexually Transmitted Diseases	2	Spring	
PubH 6299	Qualitative Data Uses in Public Health	1	Fall	
PubH 6299	Others to be announced	1-2	TBA	
Sub-Total	Epi-Bio Electives	4		
School of Public Health Electives				
(Select at least 5 credits from any Milken Institute SPH graduate course(s). May also use credits from the Content Foundation Courses or Electives categories above.)				
Sub-Total	SPH Electives	5	Summer, Fall, Spring	
Practicum and Culminating Experience				
PubH 6014.13 Practicum		2	See advisor	
IMPORTANT: PubH 6261 is a co-requisite for the Practicum.				
PubH 6015.13 Culminating Experience		2	See advisor	
Course Distribution		Credits		
Public Health Core Courses		15		
Program-Specific Courses (includes Epid Content Foundational and Department Electives)		21		
Other SPH Electives		5		
Practicum		2		
Culminating Experience		2		
Total		45		

Course Descriptions and Registration information can be found on the website:

<http://publichealth.gwu.edu/academics/>.

Graduation Requirements

MPH

1. **Graduate Credit Requirement.** 45 graduate credits are required.
2. **Course Requirements.** Successful completion of the Core Courses and the Program-Specific Courses are required.
3. **Grade Point Requirement.** A 3.0 (B average) overall grade point average is required.
4. **Time Limit Requirement.** The degree must be completed within four years.
5. **Transfer Credit Policy.** Up to 12 graduate credits that have not been applied to a previous graduate degree may be transferred to the MPH. Up to 18 credits may be transferred to the MPH from the Milken Institute SPH Graduate Certificate. Credits must have been earned from an accredited institution in the last 3 years with a grade point of 3.0 or better.
6. **CITI Training requirement:** All students are required to complete training regarding human subject protection regulation and the Health Insurance Portability and Accountability Act of 1996 (HIPAA). To fulfill this requirement, you must complete the Collaborative IRB Training Initiative (CITI) Course in The Protection of Human Research Subjects.
7. **Integrity Quiz & Plagiarism requirement:** All students are required to review the George Washington University Code of Academic Integrity and take the quiz within their first semester of study. The Code of Integrity and step-by-step instructions can be found here: <http://publichealth.gwu.edu/integrity>
8. **Professional Enhancement requirement:** Students must participate in 8 hours per degree program of advisor pre-approved Public Health-related lectures, seminars, and symposia, related to your field of study. Professional Enhancement activities supplement the academic curriculum and help prepare students to participate actively in the professional community. Opportunities for professional enhancement are regularly publicized via the Milken Institute SPH Listserv and through your department or advisor. Students must submit documentation of Professional Enhancement activities to the Office of Student Records. The documentation consists of the Professional Enhancement Form <http://publichealth.gwu.edu/academics/forms> (which includes a prior approval signature from the student's advisor, a description of the program agenda, and proof of attendance. Remember to submit your documentation before you apply to graduate!

NOTE: Always see your advisor for course scheduling and sequencing strategies, but remember that proper course selection, fulfilling requirements, and on-time graduation are your responsibilities.

The Master of Public Health (MPH) curriculum consists of four types of courses:

- Required Core Courses (PubH 6001, 6002, 6003, 6004, 6006, and 6007)
- Required Program-Specific Courses, including Epidemiology Content Foundation Courses and Epidemiology electives
- Electives
- Required Practicum and Culminating Experience

The MPH core courses are designed to provide students with a broad public health context as well as a critical foundation for subsequent coursework. Early completion of these core courses ensures that students will have the base of knowledge to successfully complete the program specific courses and to get as much as possible out of them. As such, entering students are expected to enroll in MPH core courses in accordance with the following guidelines:

- We expect MPH students to complete the MPH core courses in their first year of graduate study (fall/spring/summer).
- Students may take core courses in any order.

Part-time students (who generally take 5 to 7 credits per semester) will typically concentrate on taking just core courses in their first year, and then take program-specific courses in their second and third years.

In order to help assure that all students complete core courses in the first year of study, Milken Institute SPH will offer all core courses during all three semesters (fall, spring, and summer). This will allow students who wish to complete their MPH degree within two years to do so, and will allow every student to make steady progress toward completing the MPH degree.

We recognize that there may be exceptional circumstances that make it difficult for a student to complete core courses in the first year as outlined above. Any such student should discuss this situation with his or her academic advisor.

For additional information and resources regarding registration, course descriptions, schedule of classes, etc. follow this link: <http://publichealth.gwu.edu/academics>.

We expect MPH students to complete the MPH core courses in their first year of graduate study (fall/spring/summer). Table 1 (full time students) and Table 2 (part time students) present sample course schedules that MPH Epidemiology students are required to take during their tenure at the Milken Institute SPH. It is noteworthy that fully 45 credits are required, including core courses (15 credits), program specific courses, including Epidemiology Content Foundation and Epidemiology Electives (21 credits), electives (5 credits), and the practicum (2 credits) and culminating experience (2 credits). See below.

MPH in Epidemiology (45 cr)

Sample Schedule for 2-Year Completion (Fall start)

Semester	Cr	Course #	Course Name
Fall 1st year 10 credits	2	PubH 6001	Biological Concepts for Public Health
	3	PubH 6003	Principles and Practice of Epidemiology
	3	PubH 6002	Biostatistical Applications for Public Health
	2	PubH 6004	Environmental & Occupational Health in a Sustainable World
Spring 1 st year 10 credits	3	PubH 6006	Management and Policy Approaches to Public Health
	3	PubH 6247	Design of Health Studies
	2	PubH 6xxx	Epidemiology Content Course
	2	PubH 6xxx	Epi-Bio or SPH electives
Summer 1 st year 4 credits	2	PubH 6007	Social & Behavioral Science Methods
	2	PubH 6xxx	Epi-Bio or SPH electives
Fall 2 nd year 10 credits	2	PubH 6xxx	Epi-Bio or SPH electives
	3	PubH 6249	Use of Statistical Packages
	2	PubH 6xxx	Epidemiology Content Course
	1	PubH 6261	Epidemiology & Biostatistics Skills Bldg Seminar
	2	PubH 6014	Practicum
Spring 2 nd year 9 credits	3	PubH 6260	Advanced Data Analysis for Public Health
	3	PubH 6252	Advanced Epidemiologic Methods
	2	PubH 6015	Culminating Experience
	1	PubH 6xxx	Epi-Bio or SPH elective
Summer 2 nd year 2 credits	2	PubH 6xxx	Epi-Bio or SPH electives

Epidemiology Content Courses

PubH 6242	Clinical Epidemiology	Spring Every Year
PubH 6244	Cancer Epidemiology	Spring Every Year
PubH 6245	Infectious Disease Epidemiology	Spring Every Year
PubH 6250	Epidemiology of HIV/AIDS	Fall Every Year
PubH 6259	Epidemiologic Surveillance	Spring Every Year

4 credits of Epi-Bio Electives –Any 6xxx courses offered by the Epi-Bio Department or any of the above Epidemiology Content Courses

4 credits of Milken Institute SPH Electives-Any courses offered in the SPH

+ Both the Practicum and the Culminating Experience require substantial lead time to plan. Make sure that you start planning your Practicum the semester before you wish to conduct it. Make sure that you start planning your Culminating Experience approximately 2 semesters before you plan to complete it.

Milken Institute School of Public Health

MPH in Epidemiology (45 credit)

Sample Schedule for 3-Year Completion (Fall start)

Semester	Cr	Course #	Course Name
Fall 1 st year 6 credits	3	PubH 6003	Principles and Practice of Epidemiology
	3	PubH 6002	Biostatistical Applications for Public Health
Spring 1 st year 6 credits	2	PubH 6004	Environmental and Occupational Health in a Sustainable World
	2	PubH 6001	Biological Concepts for Public Health
	2	Elective	Epi-Bio or SPH Electives
Summer 1 st year 3 credits	2	PubH 6007	Social & Behavioral Science Methods
	1	PubH 6xxx	Epi-Bio or SPH Elective
Fall 2 nd year 7 credits	3	PubH 6249	Use of Statistical Packages
	3	PubH 6247	Design of Health Studies
	1	PubH 6xxx	Epi-Bio or SPH Elective
Spring 2 nd year 7 credits	2	PubH 6xxx	Epidemiology Content Course
	3	PubH 6252	Advanced Epidemiological Methods
	2	PubH 6xxx	Epi-Bio or SPH Electives
Summer 2 nd year 3 credits	3	PubH 6006	Management and Policy Approaches to Public Health
Fall 3 rd year 7 credits	1	PubH 6261	Epidemiology & Biostatistics Skills Bldg Seminar
	2	PubH 6014	Practicum
	3	PubH 6260	Advanced Data Analysis
	1	PubH 6xxx	Epi-Bio or SPH Elective
Spring 3 rd year 6 credits	2	PubH 6015	Culminating Experience
	2	PubH 6xxx	Epidemiology Content Course
	2	PubH 6xxx	Epi-Bio or SPH Electives

Epidemiology Content Courses

PubH 6242	Clinical Epidemiology	Spring Every Year	Tues 4:10-6:00 pm
PubH 6244	Cancer Epidemiology	Spring Every Year	Wed 4:10-6:00 pm
PubH 6245	Infectious Disease Epidemiology	Spring Every Year	Mon 4:00-6:00 pm
PubH 6250	Epidemiology of HIV/AIDS	Fall Every Year	Thurs 4:10-6:00 pm
PubH 6259	Epidemiologic Surveillance	Spring Every Year	Wed 6:10-8:00 pm

4 credits of Epi-Bio Electives –Any 6xxx courses offered by the Epi-Bio Department or any of the above Epidemiology Content Courses

4 credits of SPH Electives–Any courses offered in the SPH

+ Both the Practicum and the Culminating Experience require substantial lead time to plan. Make sure that you start planning your Practicum the semester before you wish to conduct it. Make sure that you start planning your Culminating Experience approximately 2 semesters before you plan to complete it.