

### Program Director

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### Mission Statement

The sedentary lifestyle and its consequent metabolic and cardiovascular complications now assumes a considerable public health burden in the United States. *Indeed, the promotion of physical activity for people of all ages has become a top priority on public health agenda around the world.* The mission of the Master of Public Health (MPH) degree from the Department of Exercise Science is to develop and train graduate students to integrate physical activity into the core of public health practice. The program encompasses an ecological perspective to the role of physical activity in the etiology, prevention and treatment of chronic disease at the community, national, and global levels. Further, this program is designed to train students as public health scientists and practitioners in order to assist public and private agencies with program development and evaluation with regard to physical activity, health promotion and disease prevention.

### Goals

The goals of this MPH program in the Department of Exercise Science are to ensure graduates:

- Understand the pathophysiology of selected chronic disease processes;
- Understand exercise physiology and the role of physical activity and exercise in health promotion and disease prevention;
- Develop skills in physical activity assessment using state-of-the-art technology;
- Utilize epidemiological methods to develop and test hypotheses pertaining to physical activity and health and disease outcomes at the population level;
- Develop skills in designing, implementing, and evaluating interventions for improving physical activity at the community level;
- Appreciate the role of public health policy in altering physical activity patterns at the community level.

## Course Requirements

All GW School of Public Health and Health Services (SPHHS) MPH students who select the Physical Activity in Public Health program enroll in Core Courses (16 credits), Program-Specific Courses (20 credits), and Electives (5 credits). Program-Specific Courses include options to focus in Epidemiology, or Program Design and Evaluation. The 45 credit degree program also includes a Practicum (2 credits) and a Culminating Experience (2 credits). The curriculum sheets that follow describe the requirements for the MPH in Physical Activity.

## Program Specific Competencies

Upon completion of the MPH in Physical Activity in Public Health, students will possess the following functional competencies:

- **Integrate physical activity within the core functions of public health.**  
Students will be able to describe how the promotion of an active lifestyle can be accomplished within the various disciplines of public health. [EXSC 202]
- **Apply evidence-based knowledge and understanding of the relation of physical activity to health and function across the life-span.**  
Students will be able to describe the role of physical activity in the health and function of the general population. Students will be able to describe various physiological and psychosocial mechanisms that mediate the relation between physical inactivity and chronic disease morbidity and mortality. [EXSC 202; EXSC 210, EXSC 211; EXSC 232]
- **Utilize social and behavioral theories in physical activity and other health promotion programs.**  
Students will be able to understand and to apply various theories of social and behavioral change in understanding physical activity adoption and maintenance. Students will demonstrate skills in the design of physical activity interventions that are consistent with the social and behavioral theories. [EXSC 202; PubH 363; PubH 382; PubH 383]
- **Evaluate the impact of physical activity and sedentary behavior at the community level.**  
Students will be able to use ecological methods to evaluate the association between patterns of physical activity and sedentary living within a community and various pediatric and adult indicators of health in that same community. Students will be able to describe ways of altering the built environment of a given community in order to promote more active living. [EXSC 202; PubH 252; PubH 383]
- **Design, implement, and evaluate physical activity interventions in a variety of age groups and community settings.**  
Students will understand the various dimensions of physical activity and their specific relevance to the health needs of different age groups. Students will apply their knowledge of intervention design and implementation to promote physical activity in the school, workplace, community, and home setting. Students will apply their knowledge of social and behavior changes, as well as their skills in biostatistics and epidemiology, to evaluate the success of their interventions. [PubH 247; PubH 249; PubH 252; PubH 382; PubH 383, PubH 390]
- **Work with other public health professionals to promote physical activity research, practice, and policy at the community, state, or federal level.**  
Students will apply their competencies from the above-referenced list to integrate the science and practice of public health in working with a variety of traditional and non-traditional public health partners. [PubH 363; EXSC 202; EXSC 232]

Please see the curriculum sheets that follow.

THE GEORGE WASHINGTON UNIVERSITY MEDICAL CENTER WASHINGTON DC	<b>School of Public Health and Health Services</b>  <b>Master of Public Health</b> <b>Physical Activity in Public Health</b> <b>Academic Year 2010-2011</b>  <b>Program-at-a-Glance</b>			
<b>Additional Course Requirements – Prerequisites</b> Must be taken prior to EXSC 202, 210, and 211				
		<b>Credits</b>	<b>Semester Offered</b>	<b>Grade</b>
EXSC 152	Exercise Physiology	3	Fall	
<b>Core Courses</b>				
PUBH 201	Biological Concepts for Public Health	2	Fall, Spring, Summer	
PUBH 202	Biostatistical Applications for Public Health	3	Fall, Spring, Summer	
PUBH 203	Principles and Practice of Epidemiology	3	Fall, Spring, Summer	
PUBH 204	Environmental and Occupational Health in a Sustainable World	2	Fall, Spring, Summer	
PUBH 205	Policy Approaches to Public Health	2	Fall, Spring, Summer	
PUBH 207	Social and Behavioral Approaches to Public Health	2	Fall, Spring, Summer	
PUBH 208	Management Approaches to Public Health	2	Fall, Spring, Summer	
<b>Total</b>	<b>Core Credits</b>	<b>16</b>		
<b>Program-Specific Courses (choose Option A or B)</b>				
EXSC 202	Physical Activity: Physiology and Epidemiology	2	Spring	
EXSC 210	Advanced Exercise Physiology 1	3	Fall	
EXSC 211	Advanced Exercise Physiology 2	3	Spring	
EXSC 232	Exercise in Selected Chronic Diseases	3	Spring	
<b>Option A</b>	<b>Epidemiology option</b>			
PUBH 247	Design of Health Studies	3	Fall, Spring	
PUBH 249	Use of Statistical Packages for Data Management and Data Analysis	3	Fall, Spring	
PUBH 252	Advanced Epidemiologic Methods	3	Fall, Spring	
<b>Option B</b>	<b>Program Design and Evaluation option</b>			
PUBH 390	Practical Data Analysis for Prevention and Community Health	1	Fall, Spring, Summer	
PUBH 363	Introduction to Public Health Communication and Marketing	3	Fall, Spring	
PUBH 382	Planning and Administration of HP/DP Programs	2	Fall, Spring	
PUBH 383	Evaluation of Health Promotion/Disease Prevention Programs	3	Fall, Spring	
<b>Total</b>	<b>Program-Specific Credits</b>	<b>20</b>		
<b>Sample Electives (5 credits in EXSC or PUBH)</b>				
EXSC 213	Administration of Physical Activity and Health Programs	3	Spring	
EXSC 225	Nutrition Across the Lifespan	3	Spring	
PUBH 246	Injury Epidemiology and Prevention	2	Fall	
PUBH 260	Advanced Data Analysis	3	Fall	
PUBH 262	Introduction to Geographic Information Systems	1		
PUBH 378	Workplace Health Promotion	2	Spring (alternate years)	
PUBH 380	Maternal and Child Nutrition	1-2	Spring (2) Summer (1)	
PUBH 386	School Health and Safety	1-2	Spring (2) Summer (1)	

	Any SPHHS course			
<b>Total</b>	<b>Elective Credits</b>	<b>5</b>		
PUBH 214.21	Practicum	2	See Advisor	
PUBH 215.21	Culminating Experience	2	See Advisor	
<b>Course Distribution</b>		<b>Credits</b>		
Public Health Core Courses		16		
Program-Specific Courses		20		
Electives		5		
Practicum		2		
Culminating Experience		2		
<b>Total Degree Credits</b>		<b>45</b>		

Last updated 3/29/2010.

School of Public Health and Health Services

Master of Public Health and Graduate Certificate Program  
Physical Activity in Public Health  
2010-2011

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

**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. **“Additional Course” Requirements.** “Additional Course(s)” are determined at the time of admission to the Exercise Science Department and do not count toward the 45 graduate credit requirement. Take these courses \* only if the SPHHS Committee on Admissions has required you to do so.
6. **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 SPHHS Graduate Certificate. Credits must have been earned from an accredited institution in the last 3 years with a grade of B or better.

**Graduation Requirements  
Graduate Certificate**

1. Graduate Credit Requirement for students enrolled in a stand alone Graduate Certificate. 18 credits are required.
2. Graduate Credit Requirement for students enrolled concurrently in a SPHHS Degree Program. 12 credits are required.
3. The Program Director/Advisor must pre-approve all course selections and course sequencing by developing a “program of study” prior to the student’s initial registration. Graduate Certificate students meet with their advisor each semester before registration. All changes in this program of study must be pre-approved by the Program Director/Advisor.
4. Course Requirements. Since most graduate certificate students are currently enrolled in an MPH program or have previously earned a graduate degree, most course credits will be selected from the program-specific course list. Under no circumstances may a certificate student enroll in fewer than 9 credits of program-specific courses.
5. Grade Point Requirement. A 3.0 (B average) overall grade point average or better is required.
6. Time Limit Requirement. The certificate must be completed within 2 years.
7. Transfer Credit Policy. The Program Director/Advisor may approve up to 4 graduate credits that have not been applied to a previous graduate degree to be transferred to the graduate certificate. (Exceptions: GW master’s students and alumni may transfer up to 6 credits of the master’s degree to the Graduate Certificate.) The course(s) must be relevant to the 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.

**Additional Course Requirements\***

Note: This course can be taken for a grade or as pass/fail. When taken for a grade the grade is calculated into the cumulative grade point average.

EXSC	152	Exercise Physiology	3	The physiological functions of the body and the effect of exercise on these functions.
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**Core Courses  
16 Credits**

PubH	201	Biological Concepts for Public Health	2	Provides an overview of current knowledge about biological mechanisms of major diseases causing death and disability in the US and globally; understanding and interpreting the reciprocal relationships of genetic, environmental, and behavioral determinants of health and disease in an ecologic context; analyzing, discussing, and communicating biologic principles of disease from a public health perspective. Fall, Spring, Summer I
PubH	202	Biostatistical Applications for Public Health	3	Application of biostatistical principles to critical analysis of retrospective studies, prospective studies, and controlled clinical trials, as well as studies in the health services literature. Selection, basic calculations, and interpretation of statistical methods for detection of significant associations and differences. Fall, Spr, Sum 10-wk

PubH	203	Principles and Practice of Epidemiology	3	General principles, methods, and applications of epidemiology. Outbreak investigations, measures of disease frequency, standardization of disease rates, study design, measures of association, hypothesis testing, bias, effect modification, causal inference, disease screening, and surveillance. Case studies apply these concepts to a variety of infectious, acute, and chronic health conditions affecting the population. Fall, Spring, Summer 10-week
PubH	204	Environmental & Occupational Health in a Sustainable World	2	Examines the connection between population health and exposures to chemical, physical, and biological agents in the environment. Through the use of problem-solving frameworks, students will become familiar with data sources, methodologies and policy approaches being used to address the public health impacts of environmental and occupational health hazards, including the consequences of climate change, natural resource degradation, and industrial chemicals. The course will integrate key concepts of environmental health with principles of sustainability to illustrate how public policies and practices on the local, national and global level affect population health. Fall, Spring, Summer I
PubH	205	Policy Approaches to Public Health	2	Introductory multidisciplinary course focusing on the interplay of all aspects of global public health on health policy problems. Students will learn how health policy is made, how health care and public health services are delivered, and how to define and analyze key health policy problems drawing on the perspectives and skills of the public health disciplines. Fall, Spring, Summer 10-week
PubH	207	Social and Behavioral Approaches to Public Health	2	Emphasizes social and behavioral science theories, models, and concepts that can be applied to public health problems and interventions. Describes the role of social and community factors, including race/ethnicity and culture, in both the onset and solution of public health problems and describes the inter-relationship between the social/behavioral science. Summer, Fall, Spring
PubH	208	Management Approaches to Public Health	2	An advanced multidisciplinary course examining global public health and health delivery issues through the use of a case study approach. Prerequisites: PubH 201, 202, 203, 204, 205, 207. Fall, Spring, Summer 10-week
<b>Program Specific Courses (Choose Option A or Option B)</b> <b>20 Credits</b>				
EXSC	202	Physical Activity: Physiology and Epidemiology	2	Examines the etiologic link between physical activity and current life-style related risk factors and diseases. Prerequisites: EXSC 152. Spring, Summer
EXSC	210	Advanced Exercise Physiology I	3	Examines the acute and chronic cardiovascular and pulmonary adaptations to exercise training. Special attention is given to the mechanisms that affect oxygen delivery and utilization during aerobic exercise. The responses to exercise in extreme environmental conditions are also explored. Topics are addressed in both lecture and laboratory experiences. Fall \$30.00 lab fee.
EXSC	211	Advanced Exercise Physiology II	3	Examines the acute and chronic metabolic adaptations to exercise training. Special attention is given to the mechanisms that affect metabolic regulation during aerobic and anaerobic exercise. The responses to exercise in extreme environmental conditions are also explored. Topics are addressed in both lecture and laboratory experiences. Spring \$30.00 lab fee
EXSC	232	Exercise in Selected Chronic Diseases	3	This course is designed to explore the basic pathophysiology of selected lifestyle chronic diseases (e.g., type 2 diabetes, cardiovascular disease, and cancer). The course will define the role of exercise in the prevention and treatment of chronic disease across the lifespan (i.e., prenatal to successful aging). Spring.
<b>Option A - Epidemiology</b>				
PubH	247	Design of Health Studies	3	Epidemiologic concepts and methods applied to specific research questions especially new types of public health problems. Recognition and development of the most appropriate study design for a specific health issue. Ecologic, cross-sectional, case-control, cohort studies and clinical trials. Sampling, measurement, questionnaire design, causality and causal criteria. Development of a research proposal. Prerequisite: PubH 203. Fall, Spring

PubH	249	Use of Statistical Packages: Data Management and Data Analysis	3	This course familiarizes the student with one of the most widely used database management systems and statistical analysis software packages, the SAS System, operating in a Windows environment. Throughout the course, several database management system techniques and data analytical strategies for the appropriate analysis of datasets obtained from a variety of studies will be presented. Statistical techniques covered include linear regression, analysis of variance, logistic regression, and survival analysis. Prerequisite: PubH 202. Fall, Spring
PubH	252	Advanced Epidemiology Methods	3	Advanced quantitative epidemiologic methods, with a focus on basic data analytic techniques, identifying and evaluating bias and adjusting for confounding. Dose-response, trend analysis, and multiple linear and logistic regression models. Prerequisites: PubH 202, 203,247; Pre or co-requisite: PubH 249. Fall, Spring
<b>Option B – Program Design and Evaluation</b>				
PubH	363	Introduction to Public Health Communication and Marketing	3	Communication theories and methods used in promoting health and preventing disease. Theoretical background in communication and behavior science and practical communication development methods. Prerequisite: PubH 207, Summer, Fall, Spring
PubH	382	Planning and Administration of Health Promotion/ Disease Prevention Programs	2	Students will develop skills to effectively plan, implement, and manage programs that address public health problems for defined populations in a variety of settings using planning and needs assessment frameworks. Prerequisite: PubH 207. Fall, Spring
PubH	383	Evaluation of Health Promotion/Disease Prevention Programs	3	Provides students with the knowledge, competencies and skills to plan and implement and evaluate health promotion-disease prevention programs for a defined population at risk. Prerequisites: PubH 202, PubH 203, PubH 207, and PubH 382. Fall, Spring
PubH	390	Practical Data Analysis for Prevention and Community Health	1	Practical aspects of dataset creation, data management, rudimentary statistical analysis, and tabular and graphical presentation of results using PASW (formerly SPSS) and Microsoft Excel. Students will create codebooks, enter and clean data, derive new variables from existing ones, choose and implement appropriate analytical techniques, graph and tabulate results, and document and protect work. Examples will be drawn from commonly-encountered situations in PCH, such as needs assessments and program evaluations. Prerequisites: PubH 202, 203, 382. Fall, Spring, Summer
<b>Electives – 5 credits (See sample electives listed on Program-at-a-Glance)</b>				
			5	With advisor's guidance, choose 5 credits from among any SPHHS courses.
<b>Practicum and Culminating Experience – 4 credits</b>				
PubH	214.21	Practicum	1-3	This course provides the opportunity for MPH students to apply the knowledge and skills acquired through their programs of study. A planned, supervised and evaluated practice experience that is relevant to the student's program is an essential component of a public health professional degree program. These opportunities can take place in a variety of agencies or organizations. Each program customizes Practicum requirements to meet students' needs. (Credit/No Credit) Summer, Fall, Spring
PubH	215.21	Culminating Experience	2-3	A culminating experience is one that requires a student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice. It is through this course that faculty evaluates the extent to which the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Each program customizes Culminating Experience requirements to meet students' needs. Summer, Fall, Spring