

HEALTH ECONOMICS AND OUTCOMES RESEARCH, MHS

Program Overview

The Master of Health Science in Health Economics and Outcomes Research (<https://www.jhsph.edu/departments/health-policy-and-management/degree-programs/master-of-health-science-in-health-economics/>) (MHS in HEOR) is a nine-month academic program focused on economic evaluation and outcomes research methods for healthcare.

This rigorous program develops data analytic and economic modeling skills, as employed in the health policy context. In addition to coursework, students complete an independent capstone project with guidance from faculty using taught methods. Graduates work in public health research, healthcare consulting, pharmaceutical and insurance industries. Many graduates go on to pursue doctoral study in health services research, health economics or other areas of economics or public health.

The major components of the MHS in HEOR include nine months of academic coursework building strength in health economics, economic evaluation, and outcomes research. Students may complete additional electives, for a minimum of 70 credits of total course work. All students complete a mentored research experience, the Capstone project.

Program Administration

Program Director: Jeromie Ballreich (<https://www.jhsph.edu/faculty/directory/profile/3522/jeromie-m-ballreich/>), PhD, MHS

Assistant Director: David Earle, MLA

Sr. Academic Coordinator: Mary Wisniewski

BA/MHS Program

The BA/MHS in Health Economics and Outcomes Research is designed exclusively for undergraduate students currently enrolled in the Johns Hopkins University Krieger School of Arts and Sciences program in Public Health Studies. We encourage all other JHU undergraduates to apply to the MHS program during the regular admissions cycle.

Public Health Studies students have the unique opportunity to seek early admission to the MHS in Health Economics degree. The BA/MHS program is focused on economic evaluation and outcomes research methods for healthcare. Students in this program will receive co-advising from both schools to optimize their academic experience.

Requirements

Applications for the BA/MHS degree should be submitted through SOPAHS Express by July 1st between the junior and senior years. Students must be accepted before the start of their senior year. Please note that admitted students must complete the BA degree before formally enrolling in the Bloomberg School of Public Health.

Applicants must submit the following:

- Transcripts from Johns Hopkins University and, if applicable, transcripts from any other college-level institutions you have attended.*
- Three letters of recommendation.
- Resume or curriculum vitae.
- Statement of purpose and objectives.
- A grade of 'B' or better in the prerequisite courses listed below must be achieved at the time of application.

Code	Title	Credits
AS.280.345	Public Health Biostatistics	4
AS.280.350	Fundamentals of Epidemiology	4
AS.180.102	Elements of Microeconomics	3

- Standardized test scores are not required for admission review provided that a minimum GPA of 3.3 in the Public Health core is reached.

*You may upload unofficial transcripts in the document section to expedite the application review process; however, admitted students must submit an official transcript before they can matriculate into the program.

For further information on the BA/MHS in Health Economics and Outcomes Research program, contact Assistant Director, David Earle, or visit our website (<https://www.jhsph.edu/departments/health-policy-and-management/degree-programs/master-of-health-science-in-health-economics/ba-mhs/>).

MHS Program Requirements

Course location and modality is found on the JHSPH website (<https://www.jhsph.edu/courses/>).

Program Core Curriculum

The MHS in HEOR requires the completion of at least 70 credits.

In addition to the program requirements, electives are chosen in consultation with the program or academic adviser. All requirements, including elective courses, must be completed for letter grade if the course is offered for letter grade. Any exceptions must be approved by the Program Director prior to the start of the term.

Course	Title	Credits
First Year		
Summer Term		
PH.550.860	Academic & Research Ethics at JHSPH	
XXX.XXX	Introduction to Online Learning	
XXX.XXX	Title IX and Harassment Prevention Training for Students	
	Credits	0
First Term		
Required		
PH.140.621	Statistical Methods in Public Health I ¹	4
PH.300.651	Introduction to the U.S. Healthcare System	4
PH.318.603	Applied Microeconomics for Policymaking	3
PH.340.721	Epidemiologic Inference in Public Health I ¹	5
PH.552.601	Foundational Principles of Public Health ¹	0.5
PH.552.603	The Role of Qualitative Methods and Science in Describing and Assessing a Population's Health ¹	0.5
	Credits	17
Second Term		
Required		
PH.140.622	Statistical Methods in Public Health II	4
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.313.601	Economic Evaluation I	3

PH.313.643	Health Economics	3
PH.552.608	Biologic, Genetic and Infectious Bases of Human Disease ¹	.5
PH.552.610	The Social Determinants of Health ¹	.5
	Credits	14
Third Term		
Required		
PH.140.623	Statistical Methods in Public Health III	4
PH.309.616	Introduction to Methods for Health Services Research and Evaluation I	2
PH.313.602	Economic Evaluation II	3
PH.313.644	Intermediate Health Economics	3
PH.313.861	Public Health Economics Seminar	1
PH.313.865	MHS Capstone in Health Economics	2
PH.552.607	Essentials of Environmental Health ¹	.5
PH.552.609	Psychological and Behavioral Factors That Affect A Population's Health ¹	.5
	Credits	16
Fourth Term		
Required		
PH.140.624	Statistical Methods in Public Health IV	4
PH.309.617	Introduction to Methods for Health Services Research and Evaluation II	2
PH.313.603	Economic Evaluation III	3
PH.313.604	Economic Evaluation IV	3
PH.313.861	Public Health Economics Seminar	1
PH.313.865	MHS Capstone in Health Economics	2
PH.552.611	Globalization and Population Health ¹	.5
PH.552.612	Essentials of One Health ¹	.5
	Credits	16
	Total Credits	63

¹ Course meets one or more CEPH learning objectives (<http://e-catalog.jhu.edu/public-health/ceph-requirements/>).

Electives

In order to meet the 70 credit graduation requirement, students are required to take 2-3 credits of electives starting in Term 2. The following courses are recommended by the program. All elective courses should be discussed with the student's adviser prior to registration.

Code	Title	Credits
PH.140.632	Introduction to the SAS Statistical Package	3
PH.140.644	Statistical Machine Learning: Methods, Theory, and Applications	4
PH.340.722	Epidemiologic Inference in Public Health II	4
PH.221.651	Econometrics I	4
PH.340.682	Pharmacoepidemiology Methods	3
PH.309.631	Population Health Informatics	3
PH.309.670	Comparative Health insurance	3
PH.340.600	Stata Programming	2
PH.140.632	Introduction to the SAS Statistical Package	3
PH.308.630	U.S. Pharmaceutical Policy	3

Capstone Project

Students will complete a mentored capstone (scholarly article) as the culminating requirement for the program. To facilitate this, each student will enroll for the MHS Capstone in the 4th term. Typically, the capstone is an economic analysis or comprehensive literature review on a topic with health policy implications. The capstone project is completed under the guidance of a JHSPH faculty member. All students are required to submit a written product and give an oral presentation of their capstone work in 4th Term.

MHS Program Policies

MHS Program Prerequisites

1. In order to take required online courses, students must complete Introduction to Online Learning, which is offered through the Center for Teaching and Learning at the Bloomberg School. This non-credit course is a pre-requisite that **must be completed in the summer prior to matriculation**.
2. All students must take the required course PH.550.860 Academic & Research Ethics at JHSPH. This is an online offering that **must be completed in the summer prior to matriculation**. Failure to complete this course will prevent students from registering for 2nd term.

Satisfactory Academic Progress

Students must meet minimum academic standards (https://my.jhsph.edu/Resources/PoliciesProcedures/ppm/PolicyProcedureMemoranda/Academic_Programs_01_GeneralPolicies_7-7-17.pdf) to remain in the MHS in HEOR program. A student's failure to meet any of the criteria is grounds for being placed on academic warning and/or being dismissed from the program.

HPM Policy on Course Waivers

In rare cases, courses may be waived if an equivalent graduate course was completed at another institution within the last 5 years.

Any request for a course waiver must be submitted and approved by the program director in writing at least **one week** prior to the start of the term.

Procedure: In order for any course(s) to be considered for a waiver the student must submit a formal written request with all documentation justifying the request to the Program Director. The decisions on granting approvals for such requests are totally at the discretion of the Program Director in conjunction with the course faculty and will be communicated in writing to the student. The documentation necessary to grant a waiver will, in general, require the title of previous course(s), textbook(s) used, summary of course syllabi, course format (semester or term), grade(s) received, year completed, and institution where course was completed.

HPM Guidelines for Student Employment

Full-time master's students who work for the Bloomberg School are eligible to work a maximum of 19.99 hours per week during each academic term. During periods of academic non-enrollment (i.e., summer, spring break, etc.) student employees may work up to 40 hours per week.

For FICA TAX purposes, 'summer' begins on **June 1st** and ends on the last day of August prior to the first day of Term 1. During this time, students may work up to 40 hours per week.

MHS Learning Outcomes

Program Competencies

The competencies for the MHS in HEOR are met through required and elective coursework, and a mentored research capstone. Upon successful completion of the program, students will have mastered the following program competencies; specifically, students will have the ability to:

- Use statistics and econometric methods (including statistical inferences, regression methods, and applied econometric methods) to solve public health problems
- Measure and calculate health outcomes; differentiate between methods of economic evaluation and practice use of economic evaluation
- Apply economic theory and mathematical microeconomic modeling within the field of health economics
- Evaluate and apply methods in health economics and economic evaluation in public health research
- Assess the analytical methods in health economics and economic techniques in the fields of health services research and health policy
- Cite and reference methods and techniques used within the field of health economics
- Execute a post-graduate career plan

CEPH-Defined Introductory Public Health Learning Objectives

The curriculum for the MHS program includes coursework that has been approved to meet the foundational public health knowledge learning objectives (<http://e-catalog.jhu.edu/public-health/ceph-requirements/>) in the *Profession & Science of Public Health* and *Factors Related to Human Health* domains as required by the Council on Education for Public Health (CEPH).