

# HEALTH ECONOMICS AND OUTCOMES RESEARCH, MHS

## Program Overview

The Master of Health Science in Health Economics and Outcomes Research (<https://publichealth.jhu.edu/academics/mhs-in-health-economics-and-outcomes-research/>) (MHS in HEOR) is an academic and research 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. Methods in this field are used to promote the efficient and equitable allocation of healthcare resources in public health.

Health economics and outcomes research is an applied field of study that draws upon two disciplines: economic evaluation and outcomes research. The discipline of economic evaluation is grounded on seminal theories of health economics that relate the value of healthcare to individuals and society. Statistical and decision sciences further enable researchers to build upon these theories and model the value of healthcare technologies to individuals and society. Some examples of this research include the evaluation of the value of new pharmaceuticals to existing therapies, the value of vaccines to society, or the value of a public health campaign to provide safety.

The discipline of outcomes research is grounded on seminal theories of health services that relate the role of healthcare to improving the lives of individuals and society. These theories enable researchers to identify important clinical, patient, and provider outcomes; design measurement techniques to capture different outcomes; and incorporate outcomes measurement into health systems. Specific examples of this research include assessing the impact of new pharmaceuticals on patient outcomes, how to measure a new approach for healthcare delivery, or how to validate a new patient-reported outcomes instrument for a pediatric population.

Students enrolled in the program have the opportunity to take courses from multiple departments across the Bloomberg School, taught by faculty with expertise in a variety of disciplines, many of whom are true leaders in their respective fields. Through their coursework, experiences at seminars, and capstone projects, students are provided a multidisciplinary experience.

The MHS program can be completed full-time (9 months on-site in Baltimore or online) or part-time (2-3 years online). The curriculum requires a minimum of 64 course credits and a mentored research experience (the Capstone project).

International students in F-1 status who complete this program and obtain post-completion Optional Practical Training (OPT) (<https://ois.jhu.edu/students/current-f-1-students/f-1-training-and-employment/optional-practical-training/>) may be eligible for the STEM OPT Extension (<https://ois.jhu.edu/students/current-f-1-students/f-1-training-and-employment/opt-stem-extension/>). Students should consult the Office of International Services (<https://ois.jhu.edu/contact-ois/announcements/>) if they have questions about this benefit.

## Program Administration

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

Assistant Director: David Earle, MLA

## Bachelor's/MHS Program

*Johns Hopkins University, in conjunction with the Bloomberg School, offers a combined Bachelor's degree and Master of Health Science (MHS) in Health Economics and Outcomes Research degree. The combined degree program has been tailored to prepare students for a career in economic evaluation and outcomes research methods for healthcare.*

JHU undergraduate students have the unique opportunity to seek early admission to the MHS in Health Economics and Outcomes Research degree. The combined Bachelor's/MHS program emphasizes a solid foundation in public health and 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.

Successful applicants to the Bachelor's/MHS program will have taken an undergraduate course in economics or microeconomics.

For further information on the Bachelor's/MHS in Health Economics and Outcomes Research program, contact Assistant Director David Earle ([dearle@jhu.edu](mailto:dearle@jhu.edu)) or visit our website (<https://publichealth.jhu.edu/academics/mhs-in-health-economics-and-outcomes-research/bachelors-mhs-in-health-economics-and-outcomes-research/>).

## MHS Program Requirements

Course location and modality is found on the BSPH website (<https://publichealth.jhu.edu/courses/>).

### Program Core Curriculum

The MHS-HEOR program curriculum requires 64 credits of coursework, which includes both required and elective options. Students may complete the curriculum in four full-time terms, or may complete it part-time over the course of two to three years. Elective courses should be chosen in consultation with the program or academic adviser. All requirements, including elective courses, must be completed for a letter grade if the course is offered for a letter grade. Any exceptions must be approved by the program director prior to the start of the term.

Code	Title	Credits
<b>Summer Prerequisites</b>		
XXX.XXX	Introduction to Online Learning	
PH.550.860	Academic & Research Ethics at BSPH	
<b>Program Core</b>		
PH.140.621	Statistical Methods in Public Health I <sup>1</sup>	4
PH.140.622	Statistical Methods in Public Health II	4
PH.140.623	Statistical Methods in Public Health III	4
PH.300.651	Introduction to the U.S. Healthcare System	4
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.313.601	Economic Evaluation I	3
PH.313.602	Economic Evaluation II	3
PH.313.603	Economic Evaluation III	3
PH.318.603	Applied Microeconomics for Policymaking	3
PH.313.865	MHS Capstone in Health Economics	2
PH.340.721	Epidemiologic Inference in Public Health I <sup>1</sup>	5
PH.313.644	Intermediate Health Economics	3

PH.313.860	Health Economics and Outcomes Research Program Seminar <sup>2</sup>	1
PH.313.641	Introduction to Health Economics	3
or PH.313.643	Health Economics	

**Select one of the options below:**

*Students must choose the two-term sequence (PH.309.616 and PH.309.617) or take the standalone course, PH.300.713*

PH.309.616 & PH.309.617	Introduction to Methods for Health Services Research and Evaluation I and Introduction to Methods for Health Services Research and Evaluation II	4
PH.300.713	Research and Evaluation Methods for Health Policy	3

**CEPH Required Courses**

PH.552.601	Foundational Principles of Public Health <sup>1</sup>	0.5
PH.552.603	The Role of Qualitative Methods and Science in Describing and Assessing a Population's Health <sup>1</sup>	0.5
PH.552.607	Essentials of Environmental Health <sup>1</sup>	0.5
PH.552.608	Biologic, Genetic and Infectious Bases of Human Disease <sup>1</sup>	0.5
PH.552.609	Psychological and Behavioral Factors That Affect A Population's Health <sup>1</sup>	0.5
PH.552.610	The Social Determinants of Health <sup>1</sup>	0.5
PH.552.611	Globalization and Population Health <sup>1</sup>	0.5
PH.552.612	Essentials of One Health <sup>1</sup>	0.5

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

<sup>2</sup> Required for both 1st and 2nd terms.

**Electives**

In order to meet the graduation requirement, students are required to take elective coursework. With so many elective options available, all students should meet with their program advisor prior to registering to determine the right options to meet their program goals.

**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. The capstone is an economic analysis of a topic with health policy implications. The capstone project is completed under the guidance of a BSPH faculty member and maybe done individually or as a group. All students are required to submit a written product and give an oral presentation of their capstone work in the 4th term.

**MHS Program Policies****Satisfactory Academic Progress**

Satisfactory academic progress is measured by the following:

- To maintain satisfactory academic performance and good academic standing, all master's students must maintain a minimum grade point average of 2.75, and grades of A, B, P (pass), or S (satisfactory) in all courses required by the school or by the student's department.

- Written documentation of successful completion of all Bloomberg School and departmental degree requirements within the established time limitations
- Confirmation of satisfactory performance by the student's department and/or adviser as required. Each term, the progress of each student is reviewed, and those not making satisfactory progress in terms of the cumulative grade point average and completion of requirements within established deadlines are identified. Students may not graduate unless in good academic standing. Continuation in the program while not in good academic standing falls under the purview of the department and program leadership. In Health Policy & Management, a grade of D in required courses is not considered passing. Whether a D is considered acceptable to serve as a prerequisite will be determined by the course's sponsoring department.

**IMPORTANT:** Students receiving federal loans and federal work-study funding must adhere to the Federal Satisfactory Academic Progress Policy (<https://publichealth.jhu.edu/offices-and-services/office-of-student-affairs/financial-aid/federal-aid-policies/>) posted on the Financial Aid Office website.

**Course Waivers**

In rare cases, students may request a waiver or substitution of a required program course. Any request must be submitted in writing according to the guidelines outlined below at least one week prior to the start of the academic term and be approved in writing by the student's Program Director.

**Examples of when a substitution might be appropriate:**

- A student has successfully completed a **graduate level** course with a grade of "A" or "B" that covered the same content areas as the required course. (The completed graduate-level course syllabus must be submitted with the request.)
- A course or series of courses fulfills a general area of the required curriculum, such as biostatistics or epidemiology, but the student wishes to take a different course or series that is equally or more advanced than the normal requirement and that better aligns with their overall academic and career goals.

**Course substitutions must abide by the following principles:**

- A strong rationale must be made for how the substitution will benefit the student's overall academic and career goals.
- The resulting curriculum meets the requirements of the learning competencies of the student's program.

**Procedure for making a substitution request:**

- The request for substitution must be submitted to the student's Program Director in writing at least one week before the substituted course is to be offered.
- A brief rationale for the substitution must be provided in writing.
- A completed course-by-course curriculum plan for the degree must accompany the request.
- Approval or denial will be provided by the Program Director within one week of being received. Decisions on course substitutions may not be appealed. As such, students should be prepared to complete the required curriculum if the request is denied.

- Waiver or substitution decisions are communicated to the HPM Office of Academic Affairs for documentation.

## MHS Learning Outcomes

The learning outcomes 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 be able to:

- Apply statistical methods including statistical inferences and regression methods to solve economic and public health problems.
- Measure and calculate health outcomes; differentiate between methods of theoretical economic evaluation and applications of economic evaluation.
- Evaluate and apply methods in health economics and economic evaluation in public health research.
- Apply economic theory and mathematical microeconomic modeling within the field of health economics.
- Apply economic methods for policy and decision-making.
- Assess the analytical methods in public health, including cost-effectiveness analysis, in the fields of health services research and health policy.

According to the requirements of the Council on Education for Public Health (CEPH), all BSPH degree students must be grounded in foundational public health knowledge. Please view the list of specific CEPH requirements by degree type (<https://e-catalogue.jhu.edu/public-health/ceph-requirements/>).