BIOSTATISTICS, MHS

Overview

Our non-concurrent MHS program is not being offered in the 2026-27 academic year.

The Johns Hopkins Department of Biostatistics MHS program (https://publichealth.jhu.edu/academics/mhs-dept-of-biostatistics/) is intended for outstanding individuals with prior professional experience or a professional degree (i.e., PhD or MD) seeking a one-year intensive course of study in biostatistical theory and methods. It is also open to students concurrently enrolled in a doctoral program at the Bloomberg School of Public Health. MHS graduates:

- Design research studies of human health and disease.
- Design and implement data management systems, pipelines and tools.
- Design and implement tabular and graphical displays of quantitative information.
- Draw inferences from quantitative data.
- Use statistical reasoning and theory to deal effectively with non-standard statistical problems.

Program Requirements

The MHS program involves one year of coursework (64 units) in biostatistics and other courses. Students are required to take a year-end comprehensive written examination. Students must demonstrate competence in material covered by the courses:

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

Code	Title	Credits
PH.140.651	Methods in Biostatistics I	4
PH.140.652	Methods in Biostatistics II	4
PH.140.653	Methods in Biostatistics III	4
PH.140.654	Methods in Biostatistics IV	4
PH.140.646	Essentials of Probability and Statistical Inference I: Probability	4
PH.140.647	Essentials of Probability and Statistical Inference II: Statistical Inference	4
PH.140.648	Essentials of Probability and Statistical Inference III: Theory of Modern Statistical Methods	4
PH.140.649	Essentials of Probability and Statistical Inference IV	4
PH.340.721	Epidemiologic Inference in Public Health I	5
Total Credits		**37**

A culminating data analysis project, documenting the statistical ideas and skills developed in the coursework, is also required.

Concurrent School-Wide Master of Health Science Program in Biostatistics

The object of this program is to provide doctoral students in other departments with the opportunity to pursue an MHS program in Biostatistics concurrently with their doctoral program. The administrative requirements and certifications by the faculty as set forth in the existing Policy and Procedure Memoranda for the respective doctoral degrees apply to the doctoral degree requirements of the concurrent School-wide Doctoral/Master of Health Science program in Biostatistics.

Students must have been accepted into one of the doctoral programs at Johns Hopkins University. With the primary department's approval, the student may apply to the Master of Health Science program in Biostatistics. Students already in residence may also apply to the program. Specific details about sequencing of courses, etc., will be arranged in conjunction with the doctoral program involved. Core course requirements consist of successful (graded) completion of the 651 and 646 sequences; these classes should be taken over the course of the student's first two or three years in residence in the doctoral program. Three additional (graded) statistical electives are required (introductory statistics courses excluded; other quantitative courses may serve as substitutes upon approval of the graduate program). Sixty-four total credits of coursework in Biostatistics or other areas are required.

Additionally, students must attend Biostatistics departmental seminars (https://publichealth.jhu.edu/departments/biostatistics/news-and-events/current-biostatistics-seminars/), take a written comprehensive examination, and complete a culminating data analysis project. Upon satisfactory completion of these requirements, the student is then eligible for award of the Master of Health Science in Biostatistics degree.

Before they will be awarded the MHS degree, students whose primary department is NOT in the Bloomberg School of Public Health will also need to:

1. register and pay tuition for two credits of special studies research (PH.140.840 Special Studies and Research Biostatistics) as a School of Public Health student during a summer term;
2. complete a course on the responsible conduct of research (ie, PH.550.860 Academic & Research Ethics at BSPH or PH.306.665 Research Ethics and integrity); and
3. complete all of the following half-credit, online courses: PH.552.601 (Foundational Principles of Public Health); PH.552.603 (Role of Qualitative Methods and Science in Describing and Assessing a Population's Health); PH.552.607 (Essentials of Environmental Health); PH.552.608 (Biologic, Genetic and Infectious Bases of Human Disease); PH.552.609 (Psychological and Behavioral Factors That Affect a Population's Health); PH.552.610 (Social Determinants of Health); PH.552.611 (Globalization and Population Health); and 552.612 (Essentials of One Health).

There is a brief (one-page) application that interested students will need to fill out and have approved by their advisor and department chair. Prospective students should wait to apply until they have completed one term of either the 651 or 646 sequences, but they must apply before they have completed one-half of the required coursework.

For further information about the concurrent school-wide Master of Health Science Program in Biostatistics, or to request an application, please contact Mary Joy Argo (margo@jhsph.edu), academic administrator for the Department of Biostatistics.

The department may accept a few students who do not seek degrees (special students and postdoctoral fellows) for periods of at least one academic year. This provision is intended for mature students who wish to undertake specialized study or research.

The Department offers a weekly seminar (https://publichealth.jhu.edu/departments/biostatistics/news-and-events/current-biostatistics-seminars/)program featuring recent work by outstanding statistical

scientists from around the world. Attendance is required for all graduate students.

Sample Curriculum

The curriculum is essentially the same as that for ScM candidates, with the exception that MHS students do not write a thesis but instead, prepare a culminating data analysis project.

During their time in the program, MHS students may choose from a wide range of elective courses to meet their educational needs.

Code	Title	Credits
Students specifically interested in clinical trials may want to consider the courses:		
PH.140.642	Design of Clinical Experiments	3
PH.340.645	Introduction to Clinical Trials	3
Students specifically interested in learning the SAS statistical package may want to consider the course:		
PH.140.632	Introduction to the SAS Statistical Package	3

Click here (https://publichealth.jhu.edu/courses/) to search for course schedules and descriptions.

Master's Student Academic Standing Guide

This document covers policies regarding academic performance of MHS students that are specific to the Department of Biostatistics. Students also must satisfy the academic standing requirements of the University and Bloomberg School of Public Health. Master's students are expected to maintain a grade point average of no less than 2.75 throughout their studies, to meet the minimum grade threshold of a C in required courses, and to complete academic requirements within established deadlines. For a full list of program policies, please visit the MHS in Biostatistics (https://publichealth.jhu.edu/academics/mhs-dept-of-biostatistics/) page, where students can find a link to our ScM-MHS Student handbook.

Departmental Master's Comprehensive Exam

The Departmental master's exam is taken at the end of the first year of study (typically in early June). The Departmental master's exam is administered only once a year.

The grading of the Departmental exam is as follows. Passing scores are determined by exam writers after grading with examiners blinded from student names. Students who pass all sections of the exam pass the exam. Students failing one or more sections will be discussed by the faculty as a whole. This discussion will include exam and course performance in the first year. Possible resolutions include: declaring the student as passing the exam, declaring the student as having failed the exam, take-home remediation of sections of the exam or a full retake (only available if it is the student's first attempt at the exam).

In the event of a retake of the exam, students are allowed one retake. Student retakes typically occur in the following year, with exceptions occurring when mitigating circumstances are present, such as a leave of absence. In the event of a failure in the retake, the student will be asked to leave the MHS program.

Relevant to stand-alone MHS degree candidates: Students who fail the exam are not eligible to receive the 75% tuition reduction for their second year of study. Failing the exam typically results in at least one extra academic year without the tuition reduction.

Often students who will not receive the 75% tuition reduction in their second year consider switching to part time status. Such a switch must be discussed and approved with the graduate committee. Further, it should be noted that part-time status is often not an option for international students due to visa issues and residency requirements.

Upon successful completion of the Master of Health Science in Biostatistics, students will have mastered the following competencies:

- Apply the probabilistic and theoretical basis for the current methods used in statistical analysis.
- Perform estimation, testing and interpretation for single group summaries such as means, medians, variances, correlations and rates, and two group comparisons such as odds ratios, relative risks and risk differences.
- Formulate a scientific question about the relationship of a response variable Y and predictor variables X in terms of the appropriate linear, logistic, log-linear or survival regression model. Use indicator variables, linear and cubic regression splines, and interaction terms to represent major scientific questions in terms of a regression model.
- Write a methods and results section for a substantive journal, correctly describing the regression model in scientific terms and the method used to specify and estimate the model.
- Develop foundational insights for applying biostatistical theory and methodology to solve public health and scientific problems.

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/).