BIOSTATISTICS, SCM

The Johns Hopkins Department of Biostatistics ScM program is intended for individuals who have demonstrated excellence at the undergraduate level in quantitative or biological sciences and prepares them for a career as a professional statistician. Typically, ScM graduates assume positions in research or professional settings as scientific project coordinators and data analysts where they:

- 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.
- Perform major statistical analyses to address public health or statistical research questions.
- Assist statistical researchers in the conduct of original, methodologic research.

More detailed information is available below, in the Department of Biostatistics Student Handbook, and in the School’s Policies and Procedures Memorandum for the ScM degree.

Program Overview

The ScM program typically takes two years, with the first year spent in didactic coursework and the second year spent working closely with a departmental faculty member in a master’s thesis project and completing elective courses that are in-line with the individual student’s interests.

Program Requirements

Student Evaluations

The Department is committed to providing every opportunity for its ScM students to successfully complete this academic program. To support students in progressing toward the degree, a comprehensive written examination is given at the end of the first year.

Seminars

The Department offers a weekly seminar program (https://www.jhsphealth.edu/departments/biostatistics/about-us/news-and-seminars/seminars/) featuring recent work by outstanding statistical scientists from around the world. Attendance is required for all graduate students. One seminar per month may be designated to be part of the Biostatistics “Grand Rounds” series, which features statistical analyses addressing important public health questions.

In addition, first year graduate students are required to complete the Current Topics in Biostatistics Research course, where faculty, postdocs and senior students from the Department present their research, with a focus on the public health and scientific questions driving the work, why the research makes a difference for the subject area and how to translate the research into practice.

Course location and modality is found on the BSPH website (https://publichealth.jhu.edu/academics/course-directory/courseselectionnumbers-explained/).

Recommended Curriculum

The second year curriculum is considerably less course-intensive than the first, as thesis development becomes a priority during this year. However, we encourage students to avail themselves of the array of biostatistical electives that are available and to be mindful of completing the School’s extra-departmental course requirements and new requirements for students who have not already taken 3 credits of Epidemiology coursework and PH.550.865 Public Health Perspectives on Research.

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>PH.140.630</td>
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PH.140.649 Essentials of Probability and Statistical Inference IV 4

Electives

PH.140.840 Special Studies and Research Biostatistics (Credits as needed in order to get to at least 16 credits total) 1 - 22

PH.140.860 Current Topics in Biostatistics Research 1

Credits 10-31

Second Year

First Term

PH.140.776 Statistical Computing (if not taken in first year) 3

PH.140.711 Advanced Data Science I 3

PH.550.860 Academic & Research Ethics at BSPH (if not taken in first year) 0

Electives 8

Epidemiology Course (at least 3 credits), if applicable 3

"Cells to Society" modules, if applicable 9

Select one or both of the following: 1-22

PH.140.820 Thesis Research Biostatistics (credits as needed in order to get to at least 16 credits total)

PH.140.840 Special Studies and Research Biostatistics (credits as needed in order to get to at least 16 credits total)

Credits 10-31

Second Term

PH.140.712 Advanced Data Science II 3

PH.140.643 Practice of Statistical Consulting 3

Epidemiology Course (at least 3 credits), if applicable 3

"Cells to Society" modules, if applicable 9

Electives 8

Select one or both of the following: 1-22

PH.140.820 Thesis Research Biostatistics (credits as needed in order to get to at least 16 credits total)

PH.140.840 Special Studies and Research Biostatistics (credits as needed in order to get to at least 16 credits total)

Credits 10-31

Third Term

Electives 8

Epidemiology Courses (at least 3 credits), if applicable 3

"Cells to Society" modules, if applicable 9

Select one or both of the following: 1-22

PH.140.820 Thesis Research Biostatistics (credits as needed in order to get to at least 16 credits total)

PH.140.840 Special Studies and Research Biostatistics (credits as needed in order to get to at least 16 credits total)

Credits 10-31

Fourth Term

Electives 8

Epidemiology Courses (at least 3 credits), if applicable 3

Credits 4-25

Additional Notes and Requirements

First Year

- Students must enroll in a minimum of 16 credits per term. The 16 credits can be reached by enrolling for special studies credit...
During their time in the program, ScM students may choose from a wide range of elective courses to meet their educational needs.

**Code** | **Title** | **Credits**
---|---|---
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 to search for course times and descriptions (https://www.jhsph.edu/courses/).

**Master’s Student Academic Standing Guide**

This document covers policies regarding academic performance of master’s 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.

**Departmental Master’s Comprehensive Exam**

The Departmental master’s exam is taken at the end of the first year of study (typically the third Monday following the end of the 4th term). 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 their master’s program or switch to another program (for example from ScM to MHS).

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 foreign students due to visa issues and residency requirements.

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

- 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.
- Perform major statistical analyses to address public health or statistical research questions.
- Assist statistical researchers in the conduct of original, methodologic research.