

Second Year PhD Students

Recommended Curriculum, 2015-16

1st term

Advanced Data Science I (140.711)
Statistical Computing (140.776, 3 credits) *(if not taken in first year)*
Responsible Conduct of Research (550.600, 1 credit) *(if not taken in first year)**
Academic and Research Ethics at JHSPH (550.860, 0 credits) *(if not taken in a previous term)***
Electives
Special Studies (140.840, credits as needed in order to get to at least 16 credits total)

2nd term

Advanced Data Science II (140.712)
Public Health Perspectives (550.865, 2 credits)*** *(if not taken in first year; this course may be moving to 3rd term)*
Electives
Special Studies (140.840, credits as needed in order to get to at least 16 credits total)

3rd term

Electives
Thesis Research (140.820) (credits as needed in order to get to at least 16 credits total) and/or Special Studies (140.840, credits as needed in order to get to at least 16 credits total)

4th term

Electives
Thesis Research (140.820) (credits as needed in order to get to at least 16 credits total) and/or Special Studies (140.840, credits as needed in order to get to at least 16 credits total)

* Students may take the 3rd term course 306.665 Research Ethics and Integrity: US and International Issues in lieu of 550.600

** Although this course is offered in subsequent terms, continuing students who have not previously taken the course are required to take this during 1st term of 2015-16 and will not be able to register for 2nd term until they have done so.

*** Students who hold an MPH from a domestic university within the last 10 years can waive Public Health Perspectives

NOTES:

In order for PhD students to graduate from the Bloomberg School of Public Health: At least 18 credit units of formal coursework are required in courses outside the student's primary department. At least nine of these credits must be taken in the School of Public Health. Students must also satisfactorily complete the courses 550.865 Public Health Perspectives on Research, 550.860 Academic and Research Ethics at JHSPH, and 550.600 Responsible Conduct of Research.

Students must enroll for a minimum of 16 credits per term. The 16 credits can be reached by enrolling for special studies credit. These special studies must have a clearly defined objective.

All students are expected to obtain training in the statistics/science interface (see attached).

Students are required to attend departmental seminars and participate in a working group.

During the course of the second year, students should start the process of identifying a thesis topic/advisor with the expectation that they start the thesis work at the beginning of their third year.

In order to take the preliminary schoolwide oral exam (to be held no later than end of December of the 3rd year), students should prepare a paper/proposal related to their potential thesis topic.

When selecting a preliminary oral exam committee, note that at least two members are expected to be non-statistical scientists and the chair must approve the committee.

Expectations of Doctoral Students Regarding Training at the Statistics-Science Interface

Biostatistics comprises the reasoning and methods for using data as evidence to address public health and biomedical questions. It is a methodology for empirical research. Successful research biostatisticians must work at the interface of mathematical statistics and science, translating and connecting ideas from each domain.

An essential learning objective of the Johns Hopkins PhD program in biostatistics is the ability to work at the statistics-science interface: formulating scientific questions in statistical terms; using mathematical and statistical models to quantify empirical evidence relevant to scientific questions; interpreting quantitative findings in scientific terms and communicating key statistical ideas for scientific audiences.

To achieve this objective, Hopkins PhD students are expected to demonstrate their ability to work effectively at the statistics-science interface. Specifically, they must demonstrate their ability to:

1. master and communicate the scientific background, context, language and ideas relevant to a particular research question;
2. represent scientific questions in terms amenable to the design and analysis of empirical studies to address the question;
3. quantify study findings using appropriate statistical ideas and methods;
4. correctly interpret and communicate the statistical results in terms that are meaningful to their scientific colleagues.

Students are expected to:

1. develop expertise in a scientific area outside biostatistics (through course work, self-study, directed reading or other means);
2. demonstrate in the preliminary exam written proposals, preliminary and final public oral exams, and periodic research-in-progress meetings with their thesis committees the ability to communicate effectively with statistical and non-statistical scientists from outside the department about the major ideas from the minor and about statistical concepts and methods in relevant, scientific terms;
3. to submit annual progress reports, to be reviewed by the graduate program directors, during their third through fifth years that detail their training at the statistics-science interface;
4. select oral exam committees and a thesis committee that has adequate representation by non-statistical scientists; the preliminary oral exam committee is expected to have at least two non-statistical scientists. The committees will be approved by the department chair.