EPIDEMIOLOGY AND BIOSTATISTICS: BIOSTATISTICS, PHD

The PhD program in biostatistics is designed to prepare students to be independent researchers in the development of statistical methodologies and in the appropriate and innovative application of these methodologies to biomedical research problems. In the first five semesters of the program, students complete a series of courses in both theory and applied methodology, engage in individually mentored research experiences, explore statistical collaboration, and complete the qualifications examination. Within this period, students also identify a dissertation research problem and an advisor and present a research proposal as part of the candidacy examination. Students typically defend their dissertations and graduate within five years of matriculation.

For more information: https://www.med.upenn.edu/ggeb/ggeb-courses.html

View the University's Academic Rules for PhD Programs (http://catalog.upenn.edu/pennbook/academic-rules-phd/).

Required Courses

Code	Title	Course Units
Coursework		
Theory Courses		
BSTA 6200	Probability I	
BSTA 6210	Statistical Inference I	
BSTA 6220	Statistical Inference II	
Methods Courses		
BSTA 6300	Statistical Methods and Data Analysis I	
BSTA 6320	Statistical Methods for Categorical and Survival Data	
BSTA 6510	Introduction to Linear Models and Generalized Linear Models	
BSTA 6560	Longitudinal Data Analysis	
BSTA 6600	Design of Observational Studies	
BSTA 6610	Design of Interventional Studies	
BSTA 6700	Statistical Computing	
BSTA 5110	Biostatistics in Practice	
Additional Coursework		
Electives		
BSTA 7510	Statistical Methods for Neuroimaging	
BSTA 7820	Stat Meth/Incomplet Data	
BSTA 7870	Methods for Statistical Genetics and Genomics in Complex Human Disease	
BSTA 7890	Big Data	
BSTA 7900	Causal Inference in Biomedical Research	
Research Requirements		
BSTA 6990	Lab Rotation	
BSTA 8990	Pre-Dissertation Research	
BSTA 9950	Dissertation	
BSTA 7500	Statistical Methods for Risk Prediction and Precision Medicine	

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2024 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

Sample Plan of Study

Code	Title	Course Units
Year 1		
Fall		
BSTA 6200	Probability I	
BSTA 6300	Statistical Methods and Data Analysis I	
BSTA 6600	Design of Observational Studies	
BSTA 6610	Design of Interventional Studies	
BSTA 6990	Lab Rotation	
Spring		
BSTA 6210	Statistical Inference I	
BSTA 6320	Statistical Methods for Categorical and Survival Data	
BSTA 6510	Introduction to Linear Models and Generalized Linear Models	
BSTA 6990	Lab Rotation	
Summer		
BSTA 6990	Lab Rotation	
Year 2		
Fall		
BSTA 6220	Statistical Inference II	
BSTA 6560	Longitudinal Data Analysis	
BSTA 5110	Biostatistics in Practice	
BSTA 6990	Lab Rotation [1]	
or BSTA 899	Pre-Dissertation Research	
Spring		
BSTA 6700	Statistical Computing	
Advanced Elective/Minor		
BSTA 6990	Lab Rotation [1]	
or BSTA 899	Pre-Dissertation Research	
Elective		
Year 3		
Fall		
BSTA 8990	Pre-Dissertation Research	
Elective		
Spring		
BSTA 9950	Dissertation	
Year 4 and Beyond		
BSTA 9950	Dissertation	
Elective		

[1] Students should take BSTA 6990 Lab Rotation if mentor is not yet selected or BSTA 8990 Pre-Dissertation Research if mentor has been selected.