PH.D. IN BIOSTATISTICS

Overview

The PhD in Biostatistics, offered through the Division of Biostatistics in the Department of Public Health Sciences at the Miller School of Medicine, provides a comprehensive curriculum that covers both theoretical and computational aspects of biostatistics.

Admitted PhD students are expected to take a full suite of courses including several iterations of the seminar course, a consulting practicum, and a series of elective coursework (cognate area) that ensure the candidate has studied a subject matter discipline within biomedical research. PhD students are also expected to take high-level courses in statistical theory, survival analysis, and high-dimensional and complex data not generally taken by MS students. The PhD program consists of 37 credits of core coursework, 6 credits of introductory public health coursework, 12 credits of electives, and 12 credits of dissertation research for a total of 67 credits to complete the degree. PhD students are expected to pass a first-year written diagnostic exam at the end of their first year of study. A second oral and written exam will be administered at the end of the third year.

To obtain additional information on the PhD in Biostatistics, please visit our Graduate Programs in Public Health website (https://graduatestudies.publichealth.med.miami.edu/).

Admission Requirements

- All applicants for the PhD in Biostatistics program must submit the following items on SOPHAS (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsophas.liaisoncas.com%2Fapplicant-ux%2F%23%2Fdeeplink%2FprogramSearch%2Forganization%2F1034082811816155136.&data=05%7C02%7CHRose%40med.miami.edu%7Ce388d33512f243609f3f08dc387a54f0%7C2a144b72f23942d48c0e6f0f17c48e33%7C0%7C0%7C638447345285281464%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=ofbijlyVHGXeLXtaQyG8ApMqFLBu%2B7sHelvIjJXaFi4%3D&reserved=0):
  - Application fee
  - Curriculum Vitae/Resume
  - Three letters of recommendation
  - Statement of Purpose/Personal Statement
  - Official transcripts from every post-secondary school attended
  - Graduate Record Exam (GRE)
- This graduate degree program also requires submission of certain supplemental materials, including:
  - TOEFL/IELTS score, as applicable
  - Foreign evaluation on international transcripts, as applicable

For more detailed information, please visit our Public Health Sciences Graduate Studies Admission Website (https://graduatestudies.publichealth.med.miami.edu/admissions/application-process/).

For further information, please contact:

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Curriculum Requirements

Code	Title	Credit Hours
Core Courses		
BST 603	An Introduction to Probability Theory and Its Applications	3
MTH 625	Introduction to Mathematical Statistics	3
MTH 642	Statistical Analysis	3
EPH 600	Introduction to the Science Practice of Public Health	3
BST 610	Introduction to Statistical Collaboration	3
EPH 621	Fundamentals of Epidemiology	3
BST 630	Longitudinal and Multilevel Data	3
BST 640	Modern Numerical Multivariate Methods	3
BST 650	Topics in Biostatistical Research [1]	4

BST 665	Design and Analysis of Clinical Trials	3
BST 676	Introduction to Generalized Linear Models	3
BST 680	Advanced Statistical Theory	3
BST 690	Theory of Survival Analysis	3
BST 691	High Dimensional and Complex Data	3
Electives		**12**
Dissertation		**12**
BST 830	Doctoral Dissertation (pre-candidacy)	
BST 840	Doctoral Dissertation (Post-Candidacy)	
Total Credit Hours		**67**

[1] BST 650 is taken for 1 credit in Fall and Spring during the first 2 years of study

Sample Plan of Study

Admitted PhD students are expected to take a full suite of courses including several iterations of the seminar course, a consulting practicum (or advanced computing course), and a series of elective coursework (cognate area) that ensure the candidate has studied a subject matter discipline within biomedical research. PhD students are also expected to take high-level courses in statistical theory, survival analysis, and high-dimensional and complex data not generally taken by MS students.

The PhD in Biostatistics program consists of 37 credits of core coursework, 6 credits of introductory public health coursework, 12 credits of electives, and 12 credits of dissertation research for a total of 67 credits to complete the degree. Students complete structured coursework (core and elective credits) during the first three years of study. PhD students are expected to pass a first-year written diagnostic exam at the end of their first year of study. A second oral and written exam will be administered at the end of the third year of study.

This is a sample plan of study. Your actual course sequence may vary depending on your previous academic experience as well as current course offerings. Students should meet with their academic advisor each semester to determine appropriate course selection.

Year One		
Fall		**Credit Hours**
BST 603	An Introduction to Probability Theory and Its Applications	3
EPH 600	Introduction to the Science Practice of Public Health	3
MTH 642	Statistical Analysis	3
	Credit Hours	**9**
Spring		
MTH 625	Introduction to Mathematical Statistics	3
BST 630	Longitudinal and Multilevel Data	3
BST 676	Introduction to Generalized Linear Models	3
	Credit Hours	**9**
Summer		
BST 610	Introduction to Statistical Collaboration	3
	Credit Hours	**3**
Year Two		
Fall		
BST 665	Design and Analysis of Clinical Trials	3
BST 650	Topics in Biostatistical Research	1
BST 640	Modern Numerical Multivariate Methods	3
Elective Coursework		3
	Credit Hours	**10**
Spring		
BST 650	Topics in Biostatistical Research	1
BST 691	High Dimensional and Complex Data	3
BST 680	Advanced Statistical Theory	3
Elective Cousrework		3
	Credit Hours	**10**

Summer		
BST 830	Doctoral Dissertation (pre-candidacy)	1
	Credit Hours	**1**
Year Three		
Fall		
EPH 621	Fundamentals of Epidemiology	3
Elective Coursework		3
Elective Coursework		3
BST 650	Topics in Biostatistical Research	1
	Credit Hours	**10**
Spring		
BST 690	Theory of Survival Analysis	3
BST 650	Topics in Biostatistical Research	1
BST 830	Doctoral Dissertation (pre-candidacy)	1
	Credit Hours	**5**
Year Four		
Fall		
BST 830	Doctoral Dissertation (pre-candidacy)	1
	Credit Hours	**1**
Spring		
BST 830	Doctoral Dissertation (pre-candidacy)	3
	Credit Hours	**3**
Year Five		
Fall		
BST 840	Doctoral Dissertation (Post-Candidacy)	3
	Credit Hours	**3**
Spring		
BST 840	Doctoral Dissertation (Post-Candidacy)	3
	Credit Hours	**3**
	Total Credit Hours	**67**

Mission

The Doctorate Program in Biostatistics prepares students who have demonstrated excellence in mathematics, statistics, and the natural or social sciences to become research biostatisticians in academia, industry, or government positions, with a general focus on biostatistical applications, big data, and data science.

Goals

Upon completion of the doctoral degree in Biostatistics, all graduates will be able to:

- Conduct original research on the theory and/or methodology of biostatistics
- Apply innovative theory and/or methods to scientific problems
- Apply appropriate advanced data analysis and management techniques to analyze epidemiological data
- Communicate research findings and conclusions (written and oral) in a clear and concise manner
- Serve as an expert biostatistician on collaborative scientific teams

Student Learning Outcomes

- Students will demonstrate an overall knowledge and understanding of the core concepts in biostatistics, including the essential skills to conduct research in biostatistics.
- Students will demonstrate critical thinking skills, the capability to develop conjectures, and the ability to make scholarly contributions.
- Students will demonstrate mastery of research competencies.