Biostatistics, PhD

Requirements

The Doctor of Philosophy (PhD) program in biostatistics requires a minimum of 79 s.h. of graduate credit, including credit from a master's degree.

All students must successfully complete a comprehensive examination and a dissertation. The research topic and content, which vary depending on the program of study, must be approved by a student's dissertation committee. Other degree requirements include approved electives chosen from the Department of Biostatistics and other University of Iowa courses.

The PhD in biostatistics requires the following work.

Requirements	Hours
Foundational Coursework	33
Core Courses	17
Focus Electives	16
Dissertation	6-13
General Electives	0-7

Foundational Coursework

PhD students must take the following courses required for the Master of Science in biostatistics. Students who have completed equivalent coursework at other institutions may request substitutions and/or transfers of credit. Students who earned a Master of Science in biostatistics at the University of Iowa automatically receive credit for these courses.

All foundational courses except CPH:6100 and BIOS:7270 must be taken on an A–F graded basis.

Course #	Title	Hours
This sequence:		
STAT:4100/ IGPI:4100	Statistical Inference I	3
STAT:4101/ IGPI:4101	Statistical Inference II	3
This sequence:		
BIOS:5710/ IGPI:5710	Biostatistical Methods I	4
BIOS:5720/ IGPI:5720	Biostatistical Methods II	4
All of these:		
BIOS:5510/ IGPI:5510	Biostatistical Computing (taken twice for 2 s.h. each; topics should be programming with R and programming with SAS)	4
BIOS:5730/ IGPI:5730	Biostatistical Methods in Categorical Data	3
BIOS:6610/ IGPI:6610	Statistical Methods in Clinical Trials	3
BIOS:7500	Preceptorship in Biostatistics	3
EPID:4400	Epidemiology I: Principles	3

Public Health Requirement

Course #	Title	Hours
This course:		
CPH:6100	Essentials of Public Health	2

Responsible Conduct of Research Training

Course #	Title	Hours
This course:		
BIOS:7270	Scholarly Integrity in Biostatistics	1

Core Courses

Students must earn a grade of B-minus or higher in all core courses.

Course #	Title	Hours
All of these:		
BIOS:6810	Bayesian Methods and Design	3
BIOS:7110	Likelihood Theory and Extensions	4
BIOS:7210/ IGPI:7210/ STAT:7570	Survival Data Analysis	3
BIOS:7250	Theory of Linear and Generalized Linear Models	4
BIOS:7310/ IGPI:7310	Longitudinal Data Analysis	3

Focus Electives

Students complete a minimum of 16 s.h. in focus elective courses; at least 6 s.h. must be taken on an A–F graded basis. Students select courses according to their interest in biostatistics, statistics, genetics, computing, public health, or other areas; focus electives are approved by the student's advisor.

At least 11 of the 16 s.h. must be in quantitative coursework selected from biostatistics or statistics courses (prefixes BIOS or STAT) numbered 5000 or above, excluding BIOS:5120, BIOS:5130, BIOS:5310, and BIOS:7900.

Up to 5 s.h. of non-quantitative courses selected from the following list may be counted toward the focus electives. Additional courses not listed here may be approved by an advisor.

Course #	Title	Hours
BIOL:4213/ GENE:4213/ IGPI:4213	Bioinformatics	2,4
BME:5335	Computational Bioinformatics	3
CBH:4105	Introduction to Health Promotion and Disease Prevention	3
CPH:5100	Introduction to Public Health	3
GENE:7191	Human Molecular Genetics	3
HHP:4390	Understanding Human Disease	3
HMP:4000	Introduction to the U.S. Health Care System	3

ISE:4172	Big Data Analytics	3
OEH:4240	Global Environmental Health	3
PATH:5270/ MMED:5270/ IGPI:5270	Pathogenesis of Major Human Diseases	3
PATH:8133	Introduction to Human Pathology for Graduate Students	2-4
RHET:7940	Public Speaking for Academics	3

Dissertation

Students are required to complete at least 6 s.h. in BIOS:7900 Thesis/Dissertation. Students may count up to an additional 7 s.h. for a maximum total of 13 s.h. of this course toward the degree.

General Electives

Elective courses must bring the total credit for the degree to 79 s.h., if needed. Electives may be selected from biostatistics or statistics courses (prefixes BIOS or STAT) numbered 5000 or above.