

BIOSTATISTICS (PHD)

Graduate Committee

Dr. Christopher Wichman (Program Director), Dr. Ying Zhang, Dr. Su Chen, Dr. Hongying Dai, Dr. Ran Dai, Dr. James Dong, Dr. Yeogjin Gwon, Dr. Gleb Haynatzki, Dr. Lynette Smith, Dr. Fang Yu, and Dr. Cheng Zheng

The Ph.D. in Biostatistics is intended to develop the next generation of biomedical informaticians who will advance research and practice in contemporary information and knowledge management using innovative evidence based approaches to improve human health. The program is designed to provide students with the instruction and research experience necessary to become high quality academic faculty members, researchers and leaders in biomedicine and public health throughout Nebraska, the country, and the world. They may also choose careers as scientists in government and private research agencies. The expected completion time for the Ph.D. in Biostatistics is 4-5 years.

PhD Curriculum

General Requirements

- successful completion of 60 semester hours of courses beyond the master's level (including core, required, elective, cognate, and dissertation hours),
- successful passing of the qualifying exam at the PhD level, based on core courses,
- passing a comprehensive exam at the Ph.D. level,
- writing a doctoral dissertation, and
- oral defense of the dissertation

Coursework

Students pursuing the PhD in Biostatistics must complete the required courses listed below. No more than one-third of the credit hours for the Ph.D. may be master's level or introductory courses (800-level with 600-level or lower counterparts). Examples of master's level courses that may be taken by Ph.D. students include those in a cognate field, as well as the 800-level courses from the Biostatistics M.P.H. program, the latter being prerequisites for some of the Ph.D.-level courses.

Code	Title	Credit Hours
Biostatistics Core (6 courses/18 credits)		
BIOS 901	ADVANCED BIostatISTICS THEORY I	3
BIOS 902	ADVANCED BIostatISTICS THEORY II	3
BIOS 918	BIostatISTICAL LINEAR MODELS: THEORY AND APPLICATIONS	3
BIOS 924	BIostatISTICAL THEORY AND MODELS SURVIVAL DATA	3
BIOS 925	THEORY OF GENERAL LINEAR AND MIXED MODELS IN BIostatISTICS	3
BIOS 941	BIostatISTICAL CONSULTANT APPLICATION AND PRACTICE	3
Health Care Core (1 course/3 credits)		3

HPRO 830	FOUNDATIONS OF PUBLIC HEALTH (Foundations of Public Health is required for students who have not completed a master's degree from a CEPH-accredited unit. Other exemptions based on previous coursework may be considered by the COPH Assistant Dean for Academic Affairs on a case-by-case basis. *)	3
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Electives (minimum of 18 credits, see examples below)		
BIOS 810	INTRODUCTION TO SAS PROGRAMMING	3
BIOS 815	BIostatISTICAL COMPUTING	3
BIOS 818	BIostatISTICAL LINEAR MODELS: METHODS AND APPLICATION	3
BIOS 823	CATEGORICAL DATA ANALYSIS	3
BIOS 824	SURVIVAL DATA ANALYSIS	3
BIOS 825	CORRELATED DATA ANALYSIS	3
BIOS 829	INTRODUCTION TO BIostatISTICAL MACHINE LEARNING	3
BIOS 835	DESIGN OF MEDICAL HEALTH STUDIES	3
BIOS 921	ADVANCED PROGRAMMING SAS	3
BIOS 935	SEMIPARAMETRIC METHODS FOR BIostatISTICS	3
EPI 820	EPIDEMIOLOGY IN PUBLIC HEALTH	3
EPI 812	CHRONIC DISEASE EPIDEMIOLOGY	3
EPI 825	THEORY AND METHODS OF INFECTIOUS DISEASES EPIDEMIOLOGY	3
EPI 945	ANALYTICAL EPIDEMIOLOGIC METHODS	3

Cognate Field Courses (minimum of 6 credits)		6
The student will work with his/her Supervisory Committee to identify appropriate cognate field courses		

Other Requirements		
BIOS 999	DOCTORAL DISSERTATION (minimum of 12 credits)	1-15
GRAD 800	RESPONSIBLE CONDUCT IN RESEARCH TRAINING	0

NOTE: The six core courses, completion of GRAD 800, and successful passing of the Qualifying Exam are the prerequisites for taking the Comprehensive Exam.

PhD Competencies in Biostatistics

Name	Title
BIOSPHD1	Serve as an expert biostatistician on a collaborative team of investigators addressing a research question.
BIOSPHD2	Successfully conduct and disseminate original research on the theory and methodology of biostatistics.
BIOSPHD3	Effectively teach biostatistics to biostatistical and non-biostatistical audiences.
BIOSPHD4	Develop a perspective on public health and biomedical research.

BIOSPHD5

Demonstrate knowledge and expertise in a cognate field other than biostatistics.