

The University of Oklahoma
Hudson College of Public Health
Department of Biostatistics and Epidemiology



*Doctor of Philosophy
Biostatistics*

The Doctor of Philosophy (PhD) is an advanced research-oriented graduate program which requires in-depth study of and research in Biostatistics.

Summary of Required Hours:

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| • Total Required Hours | 90 credit hours (includes maximum of 40 credit hours from Master's degree) |
| • Required Coursework | Minimum 30 credit hours |
| • Dissertation Research | 20-25 credit hours |

1. Prerequisites:

Students applying to the PhD in Biostatistics must have completed a Master's degree program (MPH or MS) in Biostatistics or a related field. Up to 40 credit hours from the Master's program may be counted toward the PhD with approval.

Depending on student's background, the student may also be required to enroll in additional elective courses that cover topics students ordinarily complete in their MS or MPH curricula that are prerequisites for doctoral level courses. These may be completed after enrolling in the PhD program, and include the following courses:

BSE Required Courses (19 credit hours)

BSE 5001	Problems in Biostatistics and Epidemiology
BSE 5013	Applications of Microcomputers to Data Analysis
BSE 5113	Principles of Epidemiology
BSE 5163	Biostatistics Methods I
BSE 5173	Biostatistics Methods II
BSE 5193	Intermediate Epidemiologic Methods
BSE 5663	Analysis of Frequency Data

Any MS or PhD student who has not previously completed the core MPH courses or earned an MPH degree will be required to complete an overview course in public health. At the first opportunity students should enroll in:

BSE 5033 Foundations and Overview of Public Health (3 credit hours)

2. Required Courses:

The student must earn at least 30 credit hours in coursework at the University of Oklahoma after admission to the PhD program. The student is required to take the following courses as either a PhD student or in completing the MS or MPH degree.

Graduate College:

Responsible Conduct of Research Training
BSE 5111 Scientific Integrity in Research

I credit hour

NOTE: Further training in Responsible Conduct of Research (RCR) is required after four years, so students in their 5th year are required to enroll in the Advanced RCR course:

- BMSC 6011: Integrity in Scientific Research II

BSE Required Courses:

General/Epidemiology Courses: 5 credit hours

- BSE 5153 Clinical Trials
- BSE 6192 Grant Writing

Theory Courses:

During first year of doctoral coursework: **6 credit hours**

- BSE 5703 Principles of the Theory of Probability
- BSE 5733 Principles of Mathematical Statistics I

Following the first year of doctoral coursework: **6 credit hours**

- BSE 5743 Principles of Mathematical Statistics II
- BSE 6553 Linear Models

Applied Biostatistics: 12 credit hours

- BSE 5653 Non-Parametric Methods
- BSE 6563 Longitudinal Data Analysis
- BSE 6643 Survival Data Analysis
- BSE 6663 Multivariate Biostatistics

3. Elective Courses at least 6 credit hours total

The student must complete at least six additional credit hours of elective coursework in the Department of Biostatistics and Epidemiology. This coursework must be approved in advance by the student's advisory committee. The following courses do not satisfy this requirement: BSE 5980, 6950, or 6980.

4. Dissertation: 20 – 25 credit hours total

The student must enroll for at least 20 credit hours in Research for Doctoral Dissertation (BSE 6980). No more than 25 credit hours in BSE 6980 may be applied toward the minimum 90 credit hours required for the degree.

5. Other Requirements:

- Students are required, prior to initiation of doctoral research, to complete training in Responsible Conduct of Research (RCR) and Protection of Human Research Subjects. The training includes completion of the CITI course for Human Subjects Research (Social-Behavioral-Educational Basic module) and successful completion of a one credit course in RCR approved by the Department.
- Students are required to attend all departmental and Hudson College of Public Health seminars during the spring and fall semesters.
- Students are required to enroll in a minimum of six credit hours during the spring and fall semesters.

- d. Students are required to achieve a working knowledge of methods, programming, and applications of computers as used in Biostatistics and Epidemiology. This knowledge may be acquired by formal class work or by experience acquired either before entering or during the course of the program. Completing BSE 5013 with a passing grade constitutes the minimum level of knowledge associated with this requirement.
- e. Students are required to achieve a basic knowledge of the biomedical sciences as they relate to human health and disease. This requirement may be satisfied in one or more areas. Any coursework needed to satisfy this requirement may be taken at this or another institution, either before or after entering the program. One example of an applicable course is Principles of Pathobiology (PATH 6024).
- f. Tools of research that increase research proficiency are required. Research tools include competence in the use of computerized databases, and in the oral and written presentation of research data. The faculty will validate students' acquiring of tools of research as they assess students' performance on (1) the written qualifying examination, (2) the general and oral examinations, and (3) the dissertation.
- g. Students must pass a written qualifying examination at the end of the first year of doctoral coursework, which must include BSE 5703 and BSE 5733. The qualifying examination will consist of two parts, each roughly four hours long. One part will focus on knowledge of statistical theory and mathematical statistics, and the other will assess ability to process, analyze, and interpret data collected to answer a research question
- h. Students must pass a General Written and Oral Examination.
- i. Students must complete the defense of the dissertation within five years of the end of the semester within which the General Written and Oral Examination was successfully completed. If the time expires before the dissertation is completed, the coursework must be revalidated by retaking and passing the General Written and Oral Examination.

DOCTORAL STUDENT TEACHING REQUIREMENTS

Students are required to participate in at least 40 hours of agreed teaching activities.

Teaching experiences must be obtained in teaching epidemiology or biostatistics. The exact experiences and potential opportunities for teaching experiences should be discussed by the student and their advisor and/or advisory committee. Under the guidance of the course instructor or the faculty mentor, teaching experiences may include:

- Teaching graduate level courses in epidemiology or biostatistics
- Developing course material
- Delivering lectures
- Leading review and discussion sections
- Writing and grading homework assignments
- Writing and grading exams

Participation in teaching activities will be documented on the Annual Graduate Student Progress Report. Students are required to identify available teaching opportunities and to contact the instructor of record to arrange for their participation in the teaching activity.

The total 40 hours of teaching activities may include participation in the activities listed above as well as preparation for these activities.

This degree program is subject to the policies and procedures printed in the University of Oklahoma Hudson College of Public Health Bulletin.

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