EPIDEMIOLOGY, M.S. OR PH.D.

About the Department

The Department's programs are designed to prepare students for careers in health agencies and medical institutions; for consultation, especially in the biomedical fields; for independent biostatistical and epidemiological research; and for academic careers in schools of public health and medicine.

Areas of Specialization

- Biostatistics and Epidemiology

Career Opportunities

The programs are designed to prepare students for careers in health agencies and health-related institutions; for consultation, especially in biomedical fields; for independent biostatistical and epidemiological research; and for academic careers in schools of medicine or public health.

Cost

It is the student's responsibility to ensure they are enrolled in the prescribed courses and to pay tuition and fees at the time designated by the Bursar's Office. Details regarding tuition/fee charges and collection are available from the Bursar's Office.

Admission Requirements

In addition to the general admission criteria outlined in the Graduate College and College of Public Health Bulletins, applicants to the Department must also meet the following criteria:

MASTER'S PROGRAM REQUIREMENTS

1. A baccalaureate degree from an accredited institution (120 semester hours or equivalent, minimum).
2. A minimum 3.0 grade point average in the last 60 hours Admission with full standing to Masters degree programs requires an undergraduate GPA of 3.0 in the last 60 semester hours of upper division (Junior and Senior level) coursework. If at least 12 semester hours of graduate work have been taken, then the minimum GPA will be based on the graduate work. Up to 12 semester hours of work completed as a Special Student may be applied to the degree program after admission.
3. Proof of language proficiency for international applicants; TOEFL score of 88 or above.
4. GRE test, taken within the last 5 years, is required for all degrees and programs.
5. Additional prerequisite requirements for the MS in Biostatistics include:
   a. Calculus and Analytic Geometry I. Topics covered include equations of straight line; conic sections; functions, limits and continuity; differentiation; maximum-minimum theory and curve sketching.
   b. Calculus and Analytic Geometry II. Integration and its applications; the calculus of transcendental functions; techniques of integration; and the introduction to differential equations.
   c. Calculus and Analytic Geometry III. Polar coordinates, parametric equations, sequences, infinite series, vector analysis.
   d. Calculus and Analytic Geometry IV. Vector calculus; functions of several variables; partial derivatives; gradients, extreme values and differentials of multivariate functions; multiple integrals; line and surface integrals.

DOCTORAL PROGRAM REQUIREMENTS

1. A master's degree in either biostatistics or epidemiology from an accredited institution, provided that the academic and experience requirements for such a degree are equivalent to those required for the Master's degree at the University of Oklahoma Health Sciences Center.
2. A graduate grade point average of at least 3.5.
3. Written evidence of research experience, if available. These materials will be evaluated for creativity and overall quality. Special preference will be given to applicants with research experience.
4. Proof of language proficiency for international applicants: TOEFL score of 88 or above.
5. GRE test, taken within the last 5 years, is required for all degrees and programs.
6. Additional prerequisite requirements for the Doctoral degree in Biostatistics include:
   a. Calculus and Analytic Geometry I. Topics covered include equations of straight lines; Conic sections; functions, limits and continuity; differentiation, maximum- minimum theory and curve stretching.
   b. Calculus and Analytic Geometry II. Integration and its applications; the calculus of transcendental functions; techniques of integration; and the introduction to differential equations.
   c. Calculus and Analytic Geometry III. Polar coordinates, parametric equations, sequences, infinite series, vector analysis.
   d. Calculus and Analytic Geometry IV. Vector calculus; functions of several variables; partial derivatives; gradients, extreme values and differentials of multivariate functions; multiple integrals; line and surface integrals.
   e. A course in Linear Algebra

APPLICATION PROCESS

All applicants who wish to apply for admission to the Master of Science or Doctoral degree programs in Biostatistics or Epidemiology must apply, submit, and pay the fees for two electronic applications:

1. Schools of Public Health Application Service (SOPHAS)
2. College of Public Health Supplemental Application.

A Complete Application to the OU College of Public Health Will Include:

Completed SOPHAS application (www.sophas.org) and payment of required fee. The following materials must be loaded into or received by SOPHAS:

Transcripts

- ***U.S. applicants***
  SOPHAS requires a separate official transcript from every U.S. and Canadian institution attended.
- ***International applicants:***
  International applicants are required to submit transcripts/mark sheets to the World Education Services (www.wes.org (http://www.wes.org/)) for a course-by-course evaluation. Applicants should designate SOPHAS to receive the evaluation.

SOPHAS mailing address:
SOPHAS
P.O. Box 9111
Watertown, MA 02471

GRE Test Scores
Applicants are required to submit an official GRE (http://www.ets.org/gre/) score, taken within the last 5 years. SOPHAS should be designated to receive the scores by using the designation code #4244.

Career goal statement
This personal essay should be created in a word processing program and pasted into the online SOPHAS application. Complete instructions are within the SOPHAS application.

Current CV/ Résumé
The SOPHAS application allows applicants to upload the CV or résumé **before** electronically submitting the application. It is not possible to upload the resume to the SOPHAS application after e-submission of the application.

Recommendations
Three letters of academic or professional recommendation are preferable (personal references are not encouraged). Applicants will list recommenders' contact information and SOPHAS will send the recommenders instructions concerning how to submit their recommendations electronically through an online SOPHAS recommenders' portal. Recommendations must be submitted electronically.

International Applicants' English Language Proficiency
International applicants are required to submit TOEFL scores to SOPHAS using the designation code #5688. Minimum acceptable TOEFL score for most programs is 88 IBT. IELTS or other language proficiency tests will not be accepted. Additional information about the TOEFL requirement is available at https://admissions.ouhsc.edu/Prospective-Students/International- Applicants/English-Proficiency-Requirement-TOEFL (https://admissions.ouhsc.edu/Prospective-Students/International-Applicants/English-Proficiency-Requirement-TOEFL/)

THE UNIVERSITY OF OKLAHOMA COLLEGE OF PUBLIC HEALTH SUPPLEMENTAL APPLICATION AND FEE
All applicants to the OU College of Public Health are required to submit a supplemental application and fee. The supplemental application is available at: https://admissions.ouhsc.edu/.

Applicants must select the same program/s in the supplemental application as in the SOPHAS application. The fee for the supplemental application is $100 if the applicant selects two professional programs (MPH, MHA, DrPH, Certificate of Public Health). If the applicant selects one professional program and one graduate program (MS or PhD), the fee for the supplemental application is $175. If the applicant selects only graduate programs, the fee is $75.

Master of Science Degree Requirements
The Master of Science (MS) degree is a research oriented degree offered in the area of biostatistics or epidemiology. Requirements for admission are the same as for all MS degree programs in the Graduate College and are described elsewhere in this bulletin. Additionally, the department requires three letters of reference and a statement of career goals.

Graduation requirements include a minimum of 39 semester hours (for the MS in Biostatistics) or 40 semester hours (for the MS in Epidemiology), including no more than 4 semester hours credit for BSE 5980 Research for Master's Thesis .

The Outline of Graduate Work for the Master of Science in Epidemiology is as follows:

Code	Title	Hours
Required Courses (21 credit hours) [1]		
BSE 5001	Problems in Biostatistics and Epidemiology	1
BSE 5013	Application of Microcomputers to Data Analysis	3
BSE 5113	Principles of Epidemiology	3
BSE 5163	Biostatistical Methods I	3
BSE 5193	Intermediate Epidemiologic Methods	3
Elective Courses (15-18 credit hours)		
Epidemiology Courses (at least 9 credit hours)		
BSE 5343	Methods in Infectious Disease Epidemiology	3
BSE 6323	Molecular and Genetic Epidemiology	3
BSE 6193	Methods in Clinical Epidemiology	3
BSE 6194	Advanced Epidemiologic Methods	4
Applied Biostatistics courses numbered above 5163		6
Total Hours		**32**

[1] Any MS 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. This course should be completed within the first academic year of enrollment: BSE 5033 Foundations and Overview of Public Health

Additional Degree Requirements
- Computer Literacy
- Basic knowledge of the biomedical sciences
- Comprehensive Exam
- Master's Thesis

Students are required to achieve a basic knowledge of the biomedical sciences. The course work to satisfy this requirement may be taken at this or another institution, either before or after entering the program. Course work undertaken to fulfill the requirement is in addition to the minimum 39 hours requirement for the degree.

A thesis is **required** for the degree. It is expected that a paper based on this thesis will be prepared and submitted to an appropriate professional journal for publication.

COMPUTER PROFICIENCY

Students are required to achieve a working knowledge of methods, programming and applications of computers as used in biostatistics. This knowledge may be acquired by formal class work or by experience acquired either before entering or during the course of the program. Completion of BSE 5013 Application of Microcomputers to Data Analysis with a passing grade will satisfy this requirement. Students who wish to have more information on the use of computers are encouraged to elect the following course: BSE 5023 Computer Applications in Public Health

ELECTIVE COURSES

Only courses in the Department of Biostatistics and Epidemiology or on the published list of approved elective courses may be used to fulfill the remaining credit hours for graduation. The program of study should be formalized with the guidance of the faculty advisor and will be subject to approval by the Student's Advisory Committee and Chair of the Department.

Credit for BSE 5013 Application of Microcomputers to Data Analysis may not be used to satisfy the minimum hour requirements on this degree.

EXAMINATION

Students must pass a written and/or oral examination covering both the academic program of study and the thesis.

Notes

Usually this program requires at least two years to complete. The Faculty expects students to participate in the intellectual activities of the Department (e.g., seminars, special presentations).

Doctor of Philosophy Degree Requirements

The Doctor of Philosophy (PhD) is an advanced, research-oriented degree program requiring in-depth study and research in a particular area in biostatistics or epidemiology. General requirements for admission and completion of the degree are consistent with those applicable to all PhD programs as described elsewhere in this bulletin. An applicant must present a master's degree in biostatistics or epidemiology. In addition, three of the five M.P.H. core courses are required. A minimum of 90 semester hours, excluding credit for research tools and including a maximum of 40 hours of transfer credit, must be presented for the degree. No more than 25 hours will be allowed for work related to the dissertation (6980).

All courses, including those related to research tools, must be approved by the student's advisory committee. An advisory committee appointed by the Graduate College upon recommendation of the department will supervise each student's program of study and monitor all coursework. Composed of at least five members, the committee must include at least one representative of a department other than the major one. Defense of the dissertation must be completed within five years of the end of the semester in which the general examination was successfully completed; otherwise, coursework must be revalidated.

The Outline of Graduate Work for the Doctor of Philosophy in Epidemiology is as follows:

Required Courses (10-11 credit hours)

Code	Title	Hours
BSE 5193	Intermediate Epidemiologic Methods	3
BSE 6192	Grant Writing Skills in Epidemiology	2
BSE 6194	Advanced Epidemiologic Methods	4
BSE 5111	Scientific Integrity in Research	1
BMSC 6011	Integrity in Scientific Research II	1

Methods (6 credit hours)

Code	Title	Hours
BSE 5343	Methods in Infectious Disease Epidemiology	3
or BSE 6323	Molecular and Genetic Epidemiology	
or BSE 6193	Methods in Clinical Epidemiology	

Biostatistics (15 credit hours)

Code	Title	Hours
BSE 5173	Biostatistics Methods II	3
BSE 5663	Analysis of Frequency Data	3
BSE 6643	Survival Data Analysis	3
BSE 6663	Analysis of Multivariate Data	3
BSE 6563	Longitudinal Data Analysis	3

Elective Courses (6 hours)

Students must select at least 6 credit hours of elective courses in Epidemiology, in addition to those listed above. These must be approved by the student's advisory committee. Courses: BSE 5980, 6950, or 6980 may not be used to satisfy this requirement.

Dissertation

Code	Title	Hours
BSE 6980	Research for Doctoral Dissertation	1-16

Notes

Student's advisory committee sets the remainder of any needed requirements to meet the 90 hours required for the degree.

Master of Science Prerequisites

- Bachelor's degree from an accredited institution
- Grade point average of 3.0 or above calculated using the upper-division coursework of the bachelor's degree.
- Proof of language proficiency for international applicants: TOEFL score of 88 or above for most programs. The MHA program requires a TOEFL score of 100 IBT.
- GRE test is required for all degrees and programs.

Doctor of Philosophy Prerequisites

- Master's degree in Epidemiology or equivalent from an accredited institution.
- GRE with scores within the past 5 years.
- Successful completion of the following courses:

Code	Title	Hours
BSE 5163	Biostatistical Methods I	3
BSE 5013	Application of Microcomputers to Data Analysis	3
BSE 5113	Principles of Epidemiology	3
BSE 5303	Epidemiology of Infectious Disease	3
BSE 5363	Epidemiology and Prevention of Chronic Diseases	3
BSE 5033	Foundations and Overview of Public Health	3

With approval of the department and the graduate dean, up to 40 credit hours from the master's program may be counted toward the PhD.

Program Objectives

The Department of Biostatistics and Epidemiology has two main objectives:

1. Teach the concepts of biostatistics and epidemiology essential to all students in the health sciences.
2. Educate master's and doctoral students specializing in the fields of biostatistics or epidemiology leading to master and doctoral degrees in biostatistics or epidemiology.

3. Although the department functions as a single administrative unit, it includes two distinct disciplines: biostatistics and epidemiology. A student may work toward a master's or doctoral degree in either discipline, depending on his or her interests and background. Each discipline has a different set of required courses; however, there is some flexibility in the program to allow each student to develop his or her strengths and interests through elective courses.