

BIOSTATISTICS, M.S. OR PH.D.

About

Immerse yourself in the world of health research with the Master of Science in Biostatistics at OU Hudson College of Public Health. Your journey towards becoming a key player in health research starts here.

The Hudson College of Public Health is accredited by the Council on Education in Public Health (CEPH). The MS in Biostatistics program may be completed by full or part-time students and is offered in Oklahoma City.

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) 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 Biostatistics is as follows

Required courses

Code	Title	Hours
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 5703	Principles of the Theory of Probability	3
BSE 5733	Principles of Mathematical Statistics I	3
BSE 5173	Biostatistics Methods II	3
BSE 5980	Research for Master's Thesis	4
BSE 5111	Scientific Integrity in Research	1

Elective Courses

- Epidemiology courses - 6 credit hours
- Applied Biostatistics courses above 5173 - 6 credit hours
- One non-BSE course - 3 credit hours (if needed)

Additional Degree Requirements

- Computer Literacy
- Basic knowledge of biomedical sciences
- Comprehensive exam
- Master's Thesis

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 Biostatistics is as follows:

Required Courses

Code	Title	Hours
BSE 5111	Scientific Integrity in Research	1
BSE 5153	Clinical Trials	3
BSE 6192	Grant Writing Skills in Epidemiology	2
BSE 5703	Principles of the Theory of Probability	3
BSE 5733	Principles of Mathematical Statistics I	3
BSE 5743	Principles of Mathematical Statistics II	3
BSE 6553	Linear Models I	3
BSE 5653	Nonparametric Methods	3
BSE 6563	Longitudinal Data Analysis	3
BSE 6643	Survival Data Analysis	3
BSE 6663	Analysis of Multivariate Data	3
PATH 6024	Principles of Pathobiology	4
BSE 6980	Research for Doctoral Dissertation	1-16
Specialization Electives		6

Notes

- Student's advisory committee sets the remainder of any needed requirements to meet the 90 hours required for the degree.
- Student must earn at least 30 credit hours in coursework at the University of Oklahoma after admission to the Ph.D. program.
- Other Requirements:
 - Complete training in Responsible Conduct of Research (RCR) and Protection of Human Research Subjects. Attendance at the OUHSC IRB In-House Education Program, and successful completion of one credit-hour course in RCR.
 - Pass General Written and Oral Examination
 - Submit Defense of Dissertation

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 Biostatistics

- Successful completion of a Master's degree in Biostatistics or related field. With approval of the department and the graduate dean, up to 40 credit hours from the master's program may be counted toward the Ph.D.
- Minimum grade point average of 3.5.
- GRE scores within the past 5 years.
- Successful completion of the following courses:
 - Calculus & Analytic Geometry I
 - Calculus & Analytic Geometry II
 - Calculus & Analytic Geometry III
 - Calculus & Analytic Geometry IV
- Successful completion of the following courses:

Code	Title	Hours
BSE 5001	Problems in Biostatistics and Epidemiology	1
BSE 5013	Application of Microcomputers to Data Analysis	3
BSE 5033	Foundations and Overview of Public Health	3
BSE 5113	Principles of Epidemiology	3
BSE 5163	Biostatistical Methods I	3
BSE 5173	Biostatistics Methods II	3
BSE 5193	Intermediate Epidemiologic Methods	3
BSE 5663	Analysis of Frequency Data	3

Epidemiology

- 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.