MATH, B.S./BIOSTATISTICS, M.S.

About

The program is a modification of an existing Bachelor of Science in Mathematics degree program. It permits students entering the University as freshmen to earn both a Bachelor of Science degree in Mathematics and a Master of Science degree in Biostatistics within four to five years. This time period is one or more years shorter than the time normally required completing both degrees. The program is structured so that 24 credit hours of work can be applied to both degree programs.

During the first three years, the students will take a variety of courses in the humanities, in the sciences that relate to biomedical science, and in mathematics. The 12 required courses in mathematics include calculus, linear algebra, probability theory, and other subjects that provide a foundation for the understanding and use of statistics.

Approximately one and a half years of the program will be spent at the Health Sciences Center where the student will take specialized courses involving methods and applications of statistical analysis, data analysis, principles of epidemiology, and public health issues. A research project will culminate in a thesis.

This program will prepare the students for careers in health agencies and medical institutions, for consultation in the biomedical fields, and for biostatistics research. Students may seek to continue their studies at the Health Sciences Center by applying for admission to the Doctor of Philosophy program in Biostatistics.

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.

Application Information

For the general application requirements see our How to Apply (https://publichealth.ouhsc.edu/Admissions-and-Aid/How-to-Apply/)page. This specific program also requires:

- Must be a current Mathematics student at the University of Oklahoma in good standing.
- Grade point average of 3.0 or above.

If after reviewing the qualifications for the BS in Math/MS in Biostatistics program you are unsure of whether you meet them, please contact hcoph@ouhsc.edu. We are here to help and support you as you pursue a career in the health sciences.

Please also review the application requirements and application deadlines found on the How to Apply (https://publichealth.ouhsc.edu/Admissions-and-Aid/How-to-Apply/) page.

Curriculum

Code	Title	Hours
Undergraduate Courses Counted Toward the B.S. Degree		
General Education Requirement (Students in the program must meet all the general education requirements. The Capstone requirement for the BSE degree is satisfied by the thesis required for the MS degree).		
Core Area I Symbolic and Oral Communication 9 – 22 hrs		
Core Area II Natural Science 7 hours		
Core Area III Social Sciences 6 hours		
Core Area IV Humanities 18 hours		
MS – BIOSTATISTICS / BS MATH - CURRICULUM REQUIREMENTS		
Major Requirements in Mathematics 39 hours (No more than 8 hours applied to this program may carry a grade lower than B. No course at the 4000-level or higher with a grade lower than a C may be applied to the program.)		
MATH 1823	Calculus And Analytic Geometry I	3
MATH 2423	Calculus And Analytic Geometry Ii	3
MATH 2433	Calculus And Analytic Geometry Iii	3
MATH 2443	Calculus And Analytic Geometry Iv	3
MATH 2513	Discrete Mathematical Structures	3
MATH 3333	Linear Algebra I	3
MATH 4073	Numerical Analysis I	3
MATH 3113	Introduction To Ordinary Differential Equations	3
or MATH 3413	Physical Mathematics I	
Select one of the following:		
MATH 4323	Introduction To Abstract Algebra I	
MATH 4383	Applied Modern Algebra	
MATH 4433	Introduction To Analysis I	
MATH 4733	Mathematical Theory Of Probability	3
or BSE 5703	Principles of the Theory of Probability	
MATH 4743	Introduction To Mathematical Statistics	3
or BSE 5733	Principles of Mathematical Statistics I	
Major Electives (6 hours)		
MATH 4093	Applied Numerical Methods	3
MATH 4193	Introductory Mathematical Modeling	3
MATH 4333	Introduction To Abstract Algebra Ii	3
MATH 4373	Abstract Linear Algebra	3
MATH 4443	Introduction To Analysis Ii	3
MATH 4773	Applied Regression Analysis	3
or BSE 6643	Survival Data Analysis	
MATH 4853	Introduction To Topology	3
MATH 4793	Advanced Applied Statistics	3
or BSE 6663	Analysis of Multivariate Data	
BSE 5653	Nonparametric Methods	3
Major Support Requirements (4-5 hours)		
MBIO 2815	Introduction To Microbiology	4-5
or BIOL 2124	Human Physiology	
Unrestricted Elective Courses (20-30 hours)		
Must be approved by Advisory Committee		
BS & MS REQUIREMENTS (22 hours)		
BSE 5001	Problems in Biostatistics and Epidemiology	1
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 5980	Research for Master's Thesis	1-4
Select three of the following:		
HAP 5183	Organizational Theory and Behavior	
HAP 5213	Advanced Health Economics	
OEH 5013	Environmental Health	
Elective – Choose any BSE course (3 hours) that has not been taken to fulfill other requirements excluding BSE 5103, BSE 5950, BSE 6950		
Math/Biostatistics Courses (6 hours)		
MATH 5743	Introduction To Mathematical Statistics	3
MATH 5793	Advanced Applied Statistics	3
BSE 5653	Nonparametric Methods	3
BSE 5663	Analysis of Frequency Data	3
BSE 6643	Survival Data Analysis	3
BSE 6663	Analysis of Multivariate Data	3
Graduate Elective Courses (6 hours)		
Note: These courses may not duplicate the six hours of math electives for the undergraduate major requirements and when offered on a slash listed bases must be the graduate-level course.		
MATH 4093	Applied Numerical Methods	3
MATH 4193	Introductory Mathematical Modeling	3
MATH 4323	Introduction To Abstract Algebra I	3
MATH 4333	Introduction To Abstract Algebra Ii	3
MATH 4853	Introduction To Topology	3
MATH 5773	Applied Regression Analysis	3
BSE 5603	Sampling Theory and Methods	3
BSE 5763	Applied Bayesian Statistics	3
BSE 6563	Longitudinal Data Analysis	3
Additional Graduate Epidemiology Requirements (3 hours)		
BSE 5303	Epidemiology of Infectious Disease	3
BSE 5363	Epidemiology and Prevention of Chronic Diseases	3
BSE 5633	Public Health Strategies for Tobacco Control	3
BSE 6363	Cancer Epidemiology and Prevention	3

Note: The thesis also satisfies the Senior Capstone Requirement. It may be necessary to enroll in more than 3 credit hours of BSE 5980; however, only 3 credit hours may apply to the minimum 136 credit hours required for the dual degree program.

PREREQUISITE REQUIREMENTS

The requirements for admission to the program are the same as those for admission to the College of Arts and Sciences. These requirements are listed in the Bulletin and class schedule of the University of Oklahoma. Students may apply for admission to the Graduate Program provided they have completed:

- (1) at least 45 credit hours of coursework;
- (2) at least nine of these credit hours are in upper division courses;
- and (3) the overall GPA and the GPA in all upper division coursework are both 3.00 or better.

International students must also submit a TOEFL score of at least 570 paper-based or 88 IBT.

Students who have been granted admission to the Graduate Program may begin taking the graduate coursework.

All students, regardless of admission status, are required to maintain a GPA of 3.00 or greater in all coursework completed.

The 136 credit hours submitted to satisfy the requirements of the program may not include more than eight credit hours with a grade of C. Moreover, the 136 credit hours submitted to satisfy the requirements of this program may not include any credit hours in courses numbered 4000 or above for which a grade lower than a C was given.