

# STATISTICS, BS

**Degree:** Bachelor of Science (BS)  
**Major:** Statistics

## Program Overview

All undergraduate degrees in the department are based on a four-course sequence in calculus and differential equations and have a computational component. The statistics degrees all require a further statistics core, and require a minimum of 120 credit hours.

Students in statistics begin with a foundation in mathematics. Then they add statistical theory, plus intensive modern data analysis and a concentration in a field of their choice. The goal is to develop an appreciation of each facet of the discipline and a mastery of technical skills. This prepares students to enter a growing profession with opportunities in the academic, governmental, actuarial, and industrial spheres.

The bachelor of science in statistics differs from the bachelor of arts by requiring more hours in the major (although the same total hours for the degree, part of which provides a broad background in the sciences.

## Undergraduate Policies

For undergraduate policies and procedures, please review the Office of Undergraduate Studies section of the General Bulletin.

## Accelerated Master's Programs

Undergraduate students may participate in accelerated programs toward graduate or professional degrees. For more information and details of the policies and procedures related to accelerated studies, please visit the Office of Undergraduate Studies section of the General Bulletin.

## Program Requirements

Students seeking to complete this major and degree program must meet the general requirements for bachelor's degrees and the general requirements of the College of Arts and Sciences. Students completing this program as a secondary major while completing another undergraduate degree program do not need to satisfy the latter set of requirements.

The BS degree in statistics requires a minimum of 62 hours of approved coursework, including 27 hours in statistics and the remainder in related disciplines and a substantive field of application. In addition to the requirements for the BA, the BS degree includes a laboratory science requirement. For students seriously interested in basic science, a natural science is the logical choice as a focus for the application, and the BS degree is the logical choice of program. The specific requirements are as follows:

Code	Title	Hours
MATH 121	Calculus for Science and Engineering I	4
MATH 122	Calculus for Science and Engineering II	4
or MATH 124	Calculus II	
MATH 223	Calculus for Science and Engineering III	3
or MATH 227	Calculus III	
MATH 224	Elementary Differential Equations	3

or MATH 228	Differential Equations	
MATH 201	Introduction to Linear Algebra for Applications	3
Two computation classes:		6
ENGR 131	Elementary Computer Programming	
An additional advanced-level course in computation. Consult your advisor for courses.		
STAT 325	Data Analysis and Linear Models	3
STAT 326	Multivariate Analysis and Data Mining	3
STAT 345	Theoretical Statistics I	3
STAT 346	Theoretical Statistics II	3

At least 15 hours of courses in statistical methodology, to be chosen from STAT courses numbered 300 and higher, or approved courses in statistical methodology or probability taught in biostatistics, electrical engineering and computer science, economics, mathematics, operations research, systems engineering, etc. At least 9 hours must be in STAT. STAT 243 and STAT 244 may be counted. 15

A combined total of 12 hours (or more) in ASTR, BIOL, CHEM, or PHYS which may be counted toward a major in that field, including at least one of the following sequences: 12

PHYS 121 & PHYS 122	General Physics I - Mechanics and General Physics II - Electricity and Magnetism	
CHEM 105 & CHEM 106 & CHEM 113	Principles of Chemistry I and Principles of Chemistry II and Principles of Chemistry Laboratory	

Students are strongly encouraged to include advanced expository or technical writing courses in their programs.

**Total Hours** 62

## Concentration Requirements

### Actuarial Science Concentration

A student interested in Actuarial Science should take STAT 317 and STAT 318 Actuarial Science II STAT 318 Actuarial Science II among the 18 hours in statistical methodology, and should discuss with their advisor courses in operations research and numerical analysis which are fundamental to actuarial theory and computation.