STATISTICS - BS

Statistics is the science of collecting and analyzing data for the purpose of making decisions in the presence of uncertainty. Data are ubiquitous in the modern day and age, and statisticians are in high demand. Multidisciplinary application areas vary widely and include health and medicine, business, engineering, physical sciences, environmental studies, and government. The curriculum in statistics provides instruction in all necessary areas, including a foundation in mathematics and probability, strategies for designing studies and collecting data, the visualization and analysis of data using popular software such as R and Python, and the process of using sample data to draw conclusions about a population. Depending on the electives selected, a student completing this program will be prepared to enter employment as a statistical analyst or to continue to graduate school in statistics or a related field.

Program Requirements

The following is a suggested schedule that includes the required courses for the BS in Statistics. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care to ensure that prerequisites for all courses are met.

First Year		
Fall		**Semester Credit Hours**
ENGL 104	Composition and Rhetoric	3
MATH 171	Calculus I	4
STAT 182	Foundations of Statistics	1
Select one of the following:		4
ASTR 111	Overview of Modern Astronomy	
BIOL 111	Introductory Biology I	
BIOL 112	Introductory Biology II	
CHEM 119	Fundamentals of Chemistry I	
CHEM 120	Fundamentals of Chemistry II	
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences	
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	**15**
Spring		
MATH 172	Calculus II	4
Select one of the following:		4
CSCE 110	Programming I	
CSCE 111	Introduction to Computer Science Concepts and Programming	
CSCE 121	Introduction to Program Design and Concepts	
CSCE 206	Structured Programming in C	
Select one of the following		4
ASTR 111	Overview of Modern Astronomy	
BIOL 111	Introductory Biology I	
BIOL 112	Introductory Biology II	
CHEM 119	Fundamentals of Chemistry I	
CHEM 120	Fundamentals of Chemistry II	
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences	
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	**15**
Second Year		
Fall		
MATH 221	Several Variable Calculus	4
POLS 206	American National Government	3
STAT 211	Principles of Statistics I	3
Select one of the following		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
COMM 243	Argumentation and Debate	
Life and physical sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#life-physical-sciences)		3
	Semester Credit Hours	**16**
Spring		
MATH 304 or MATH 323	Linear Algebra or Linear Algebra	3
POLS 207	State and Local Government	3
STAT 212	Principles of Statistics II	3
Select one of the following:		4
CSCE 110	Programming I	
CSCE 111	Introduction to Computer Science Concepts and Programming	
CSCE 121	Introduction to Program Design and Concepts	
CSCE 206	Structured Programming in C	
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)		3
	Semester Credit Hours	**16**
Third Year		
Fall		
STAT 404	Statistical Computing	3
STAT 414	Mathematical Statistics I	3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)		3

Mathematics elective [1]		3
Outside specialization elective [2]		3
	Semester Credit Hours	**15**
Spring		
STAT 408	Introduction to Linear Models	3
STAT 415	Mathematical Statistics II	3
Outside specialization elective [2]		3
General elective		6
	Semester Credit Hours	**15**
Fourth Year		
Fall		
STAT 406	Design and Analysis of Experiments	3
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
Mathematics or Statistics elective [4]		3
Outside specialization elective [2]		3
Statistics elective [3]		3
	Semester Credit Hours	**15**
Spring		
STAT 482 or STAT 483	Statistics Capstone or Interdisciplinary Data Analytics Practicum	3
Outside specialization elective [2]		3
Statistics elective [3]		3
General elective		4
	Semester Credit Hours	**13**
	Total Semester Credit Hours	**120**

1. Select from ISEN 320, ISEN 340, ISEN 355; MATH 300, MATH 302, MATH 308, MATH 409, MATH 410, MATH 417 or MATH 437, MATH 442, MATH 446, MATH 447, MATH 469, MATH 470.
2. Students must take 12 hours in an outside specialization area upon approval by a departmental advisor. At least 6 hours must be upper-level hours.
3. Select from ISEN 350; STAT 315, STAT 335/CSCE 320, STAT 407, STAT 421, STAT 424/MATH 424, STAT 426, STAT 436, STAT 438, STAT 445, STAT 446, STAT 459, STAT 485, STAT 489, STAT 491.
4. Select from ISEN 320, ISEN 340, ISEN 350, ISEN 355; MATH 300, MATH 302, MATH 308, MATH 409, MATH 410, MATH 417 or MATH 437, MATH 442, MATH 446, MATH 447, MATH 469, MATH 470; STAT 315, STAT 335/CSCE 320, STAT 407, STAT 421, STAT 424/MATH 424, STAT 426, STAT 436, STAT 438, STAT 445, STAT 446, STAT 459, STAT 485, STAT 489, STAT 491.

Graduation requirements include a requirement for 3 hours of International and Cultural Diversity courses and 3 hours of Cultural Discourse courses. A course satisfying a Core category, a college/department requirement, or a general elective can be used to satisfy this requirement.

If a grade of D or F is earned in any of the following courses MATH 151/MATH 171, MATH 152/MATH 172, MATH 221/MATH 251/MATH 253, MATH 300, MATH 304/MATH 323, STAT 211, or STAT 212, this course must be immediately retaken and a grade of C or better earned. The department will allow at most two D's in upper-level (325-499) courses. If a third D is earned, one of the three courses in which a D was earned must be retaken and a grade of C or better earned.