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
- ENGL 104 Composition and Rhetoric 3
- MATH 171 Calculus I 4
- STAT 182 Foundations of Statistics 1
- American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) 3
- Science elective 1 4

Spring
- MATH 172 Calculus II 4
- American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) 3
- Computer science elective 2 4
- Science elective 1 4

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
- Communication requirement 3 3
- Science elective 1 3

Spring
- MATH 304 Linear Algebra 3
- or MATH 323 Linear Algebra 3
- POLS 207 State and Local Government 3
- STAT 212 Principles of Statistics II 3

Third Year

Fall
- STAT 404 Statistical Computing 3
- STAT 414 Mathematical Statistics I 3
- Mathematics elective 5 3
- Outside specialization elective 6 3
- Elective hours 4 3

Spring
- STAT 408 Introduction to Linear Models 3
- STAT 415 Mathematical Statistics II 3
- Outside specialization elective 6 3
- Elective hours 4 6

Semester Credit Hours 15

Fourth Year

Fall
- STAT 406 Design and Analysis of Experiments 3
- Mathematics or Statistics elective 5,7 3
- Statistics elective 7 3
- Outside specialization elective 6 3
- Elective hours 4 3

Spring
- STAT 482 Statistics Capstone 3
- Statistics elective 7 3
- Outside specialization elective 6 3
- Elective hours 4 4

Semester Credit Hours 13

Total Semester Credit Hours 120

1 Two lower-level science courses are to be selected from ASTR 111; BIOL 111; BIOL 112; CHEM 119; CHEM 120; PHYS 206/PHY 226; PHYS 207/PHY 227. A third science course (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#life-physical-sciences) is to be selected from any course satisfying the life and physical sciences requirement for the University Core Curriculum.

2 Select 8 hours from CSCE 110, CSCE 111, CSCE 121, or CSCE 206.

3 Select 3 hours from COMM 203, COMM 205, or COMM 243, which fulfills the communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) requirement for the University Core Curriculum.
Three elective hours must be chosen from the approved University Core Curriculum list for language, philosophy and culture ([http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture](http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)), three elective hours must be chosen from the approved University Core Curriculum list for creative arts ([http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts](http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)), and three elective hours must be chosen from the approved University Core Curriculum list for social and behavior sciences ([http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences](http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)). In addition, 3 hours must be in the area of cultural discourse ([http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/](http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/)), and 3 hours of courses must be in the area of international and cultural diversity ([http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/](http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/)). These may be in addition to University Core Curriculum courses, or if a course in this category satisfies an area of the Core, it can be used to meet both requirements.

Students must take at least one course from the following courses: 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, ISEN 320, ISEN 340, ISEN 355. The student must take a total of at least 12 hours of mathematics and statistics elective courses.

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.

Students must take at least two courses from the following courses: STAT 335/CSCE 320, STAT 407, STAT 421/CSCE 421, STAT 426, STAT 438, STAT 445, STAT 446, STAT 459, STAT 485, STAT 489, STAT 491, ISEN 350. The student must take a total of at least 12 hours of mathematics and statistics elective courses.

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.