Program Overview: Bachelor of Science, Mathematics Statistics Concentration

About This Major . . .

Students in this major develop problem-solving, logical, and critical thinking skills. While completing the required coursework, students gain an understanding of the nature of proof, a general understanding of Mathematics and an understanding of statistical reasoning, necessary assumptions, and the correct use of statistical analysis procedures.

The Statistics concentration in Mathematics prepares students for graduate work in statistics or to enter the job force. With some additional job-specific training, students entering the job market could function as applied statisticians working in areas such as actuarial science, wildlife management, marketing, quality control, and epidemiology.

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning.

After completing a Statistics concentration as part of a BS in Mathematics, you will be able to:

1. construct multi-step problem-solving strategies, and communicate solutions effectively in written form.
2. use mathematical software (including calculators) to aid in problem-solving and investigation, and understand its limitations.
3. apply appropriate statistical procedures and justify chosen assumptions.
4. draw statistical conclusions and evaluate the validity of others' conclusions.
5. communicate technical analyses to non-specialists.

Program Highlights:

Clubs
The Math Club hosts regular meetings, speakers, social events, and the Math Extravaganza, an exciting program for local high school students.

Current Statistics Majors
Current majors are in high demand as tutors in the TLC and as student aids in lab-based statistics courses.

Recent Graduates
Recent graduates are employed by Magellan Strategies, Obemeier, Rocky Mountain Health Plans, Mesa County Health Department, and Mesa County Valley School District 51, and have also started their own consulting companies.

Graduate School
Recent graduates are studying for MS and PhD at other institutions of higher learning, including Penn State University.

Program Requirements

A student must follow CMU graduation requirements by completing 120 semester credit hours, including 40 credits of coursework at the 300+ level. See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information. Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration. In general, CMU's programs of study are based on two curriculum groups:

1. Essential Learning

CMU's Essential Learning program provides the foundation of skills and information that cuts across all fields of study and the support for advanced concepts that students will later encounter in their majors. Before moving into work at the 300+ level, students complete the Maverick Milestone and its co-requirement, Essential Speech. This pair of courses is a capstone experience where students integrate what they have learned from their foundation courses by making connections among diverse areas of knowledge. The capstone is also an opportunity for students to work with disparate ideas, a critical skill expected of all CMU graduates that will aid them in solving the complex and unscripted problems they will encounter in their personal, professional, and civic lives.

2. What You Will Study in This Major. . .

Foundational Courses

The following courses provide basic knowledge necessary for the successful study of Statistics.

- Calculus I
- Calculus II
- Probability & Statistics

Core Courses

These courses are the main coursework for a Mathematics degree with a Statistics concentration.

- CS1: Foundations of Computer Science
- Intro to Advanced Mathematics
- Calculus III
- Linear Algebra
- Mathematics Colloquium
- Real Analysis I or Linear Algebra II
- Statistical Methods
- Mathematical Statistics I & II
- Correlation and Regression
- Design and Analysis of Experiments
- Senior Seminar I & II