Statistics, B.S. *major*

NOTE: This program is pending final MinnState approval

This program in statistics is designed to provide a basic applied and theoretical background in statistics including descriptive and inferential statistics. Students will become proficient in statistical applications using statistical software. Coursework in statistics is useful for anyone as a tool in another area of study such as environmental studies, sociology, biology, psychology, and economics, or as preparation for more advanced study of statistics. The major provides a background in statistics, mathematics, and computer science to enable students to pursue a variety of careers. The program also prepares students for graduate work in statistics and related fields. In addition to the overall graduation requirements, the B.S. Statistics major requires each student complete 49 credits in the major with an overall minimum GPA of 2.25. This major offers courses in statistics, mathematics, computer science and applied areas.

A total of 120 semester credits are needed for the **Statistics B.S.** degree and includes the following:

- 40 upper division credits (level 3000/4000)
- 49 required major core credits
- Completion of Core Curriculum credits (Minnesota Transfer Curriculum [MnTC] Goal Areas 1-10) - required for all baccalaureate degrees
- Completion of BSU Focus and Nisidotaading Course Requirements

Required Credits: 49
Required GPA: 2.25

I REQUIRED COURSES

Complete the following courses:

- CS 2321 Computer Science I (4 credits)
- CS 2322 Computer Science II (4 credits)
- CS 3507 Introduction to Databases (3 credits)
- MATH 2471 Calculus I (5 credits)
- MATH 2472 Calculus II (5 credits)
- MATH 2480 Multivariable Calculus (4 credits)
- MATH 3310 Linear Algebra (4 credits)
- STAT 2610 Applied Statistics (4 credits)
- STAT 3620 Applied Regression Analysis (3 credits)
- STAT 3631 Probability and Statistics I (4 credits)
- STAT 3632 Probability and Statistics II (3 credits)
- STAT 4000 Capstone in Statistics (3 credits)

II ELECTIVES

Select two of the following courses:

- BUAD 3232 Predictive Analytics (3 credits)
- GEOG 3231 Introduction to Geographic Information Systems (3 credits)
- GEOG 4265 Spatial Analysis (3 credits)
- MATH 3710 Mathematical Modeling (3 credits)
- PHYS 3300 Thermal and Statistical Physics (3 credits)
- SOC 3001 Quantitative Research Methods in the Social Sciences (3 credits)
- STAT 3610 Time Series Analysis (3 credits)
- TADT 3880 Quality Assurance (3 credits)
- TADT 4899 Design of Experiments (3 credits)

Program Learning Outcomes | Statistics, B.S.

1. Knowledge: Students will understand the content and methods of the core areas of undergraduate statistics.

2. Analysis: Students will identify, interpret and analyze problems, discern structure and pattern and make conjectures.

3. Application: Students will apply appropriate statistical procedures and technology to solve problems.

4. Communication: Students will communicate statistical ideas and understanding effectively both verbally and in writing.

5. Career Readiness: Students will be prepared for a variety of careers in industry and further study in statistics.

6. Articulate how biases, both unintended and intended, in data collection techniques, mining algorithms, and analyses can skew the information derived from the data and the effect this can have on diverse groups.

Suggested Semester Schedule | Statistics, B.S.

The following is a list of required Statistics Major, B.S. courses by year. This schedule is intended to help students plan their courses in an orderly fashion; however, these are only suggestions and this schedule is flexible.

Freshman

- MATH 1470 Precalculus (3 credits)
- MATH 2471 Calculus I (5 credits)
- STAT 2610 Applied Statistics (4 credits)
- Core Curriculum requirements

Sophomore

- MATH 2472 Calculus II (5 credits)
- MATH 2480 Multivariable Calculus (4 credits)
- MATH 3310 Linear Algebra (4 credits)
- STAT 3620 Applied Regression Analysis (3 credits) or STAT 3631 Probability and Statistics I (4 credits)
- Courses in the Field of Emphasis (consult with advisor)
- Core Curriculum requirements

Junior/Senior

- STAT 3632 Probability and Statistics II (3 credits)
- Courses in the Field of Emphasis (consult with advisor)
- STAT 4000 Capstone in Statistics (3 credits)
- Complete Core Curriculum requirements