Mathematics – Statistics

Mission Statement

Throughout history the mathematical sciences have been admired for their intrinsic beauty and interdisciplinary applications that contribute to economic advancement, scientific understanding, and world cultures. Our mission is to create a climate that nurtures curiosity, inspires creativity, promotes collaboration, and drives the learning and expansion of mathematical and statistical knowledge within our university, our profession, and our community.

In support of this mission we are committed to:

- Fostering the personal and professional growth of our students by offering challenging and relevant mathematics and statistics courses through the general education program, specialized and career-oriented majors and minors, and collaborative programs with other departments and colleges.

- Developing innovative pedagogy to promote mathematical and statistical reasoning, thinking and literacy.

- Building a collaborative professional community of faculty, instructional academic staff, and students by supporting scholarship in the mathematical sciences.

- Providing mathematical and statistical assistance to the surrounding community.

- Recruiting and retaining high quality faculty and instructional academic staff.

- Connecting academic knowledge with experiences such as international study, undergraduate research, and internships.

- Maintaining a high level of personal and professional integrity and instilling these ideals in our students.

- Enriching the lives of students, faculty, and the university by sharing the beauty, insights, history, and culture of the mathematical sciences.

Student Learning Outcomes

Student learning outcomes (SLOs) are statements of what a student will know or be able to do when they have completed a program. They represent the knowledge and skills a program has determined are most important for students to gain from that program. The most useful SLOs are specific and measurable so the program can accurately assess the degree to which students have achieved each outcome, and they align with college and institution mission and values. Data on achievement of SLOs is used to make improvements in the program and increase student success.

Upon completion of the emphasis, the student will:

- Acquire the basic skills and conceptual understanding regarding differential, integral and multivariable calculus, as well as that of fundamental mathematical objects introduced in our core courses such as sets, functions, equations, vectors, matrices, and groups.

- Demonstrate mathematical thinking skills, progressing from a procedural and computational understanding of mathematics to logical reasoning, pattern recognition, generalization, and abstraction, and to a formal proof.

- Communicate mathematical ideas orally and in writing, with precision, clarity and organization, using proper terminology and notation.

- Acquire proficiency in the use of technology to assist in learning and investigating mathematical ideas and in problem-solving.

- Use knowledge of content and mathematical procedures to solve problems and make connections between the different areas of mathematics.

- Demonstrate conceptual understanding of probability and statistical ideas, principals and procedures.

- Be able to use their conceptual knowledge of statistics and statistical computing skills to define problems related to statistics, and guide critical reasoning about research design, data production, and the interpretation of findings.

- Acquire the necessary skills and knowledge to pass the introductory level Society of Actuaries' exams.