MATHEMATICS, STATISTICS, AND COMPUTER SCIENCE

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The Department of Mathematics, Statistics, and Computer Science offers programs in all three disciplines, including majors in mathematics, computer science, and statistics and data science. For more information on each program, see the separate listings under Computer Science, Mathematics, and Statistics and Data Science.

Courses

MSCS 150: *Statistical and Data Investigations*
Students learn basic techniques to analyze, manage, visualize, and model data. Instruction focuses on the analysis of "real," salient datasets in a computer-equipped classroom. In small groups students discuss, analyze, and solve case study-based problems. Class sessions include the Inquiry-Based Learning technique, which engages students in frequent presentations of their solutions to the class. Students use the R statistical software to perform statistical computing and data visualizations. Offered annually.

MSCS 390: *Mathematics Practicum*
Students work in groups on substantial problems posed by, and of current interest to, area businesses and government agencies. The student groups decide on promising approaches to their problem and carry out the necessary investigations with minimal faculty involvement. Each group reports the results of its investigations with a paper and an hour-long presentation to the sponsoring organization. Offered alternate years during January Term.
Prerequisite: Permission of instructor.

STAT 110: *Principles of Statistics*
This is an introductory course for the liberal arts. Students learn study design principles and develop statistical literacy and reasoning. They learn to describe distributions, assess if known distributions fit their data, estimate population values with confidence intervals, and assess statistical significance with hypothesis tests (e.g., chi-square, z-, and t-tests, ANOVA, correlation, and regression). Not recommended for students who have completed a term of calculus. STAT 110, SDS 172, and ECON 260 all provide an introduction to statistics, and students should not take more than one; they all can serve as a prerequisite for further courses. Offered each semester. Also counts toward environment studies major (social science emphasis) and kinesiology major.

STAT 270: *Intermediate Statistics for Social Science Research*
This course focuses on the use of statistics in a social science context. Students investigate three essential questions: How can one reliably measure something? How does one design valid research? How does one analyze research results? Topics include ANOVA designs (for example, one-way and two-way with interaction), data reduction methods, and principles of measurement. Interdisciplinary groups work together on case studies throughout the term. Offered alternate years. Also counts toward public health studies concentration.
Prerequisites: STAT 110 or SDS 172 or ECON 260 or equivalent preparation, or permission of the instructor.

Faculty

Department Chair, 2024-2025
Ryota Matsuura
Professor of Mathematics, Statistics, and Computer Science
mathematics education; algebraic number theory

Curtis Balz
Visiting Instructor of Mathematics, Statistics, and Computer Science

Adam H. Berliner
Professor of Mathematics, Statistics, and Computer Science
combinatorial matrix theory; linear algebra; graph theory

Laura Boehm Vock
Assistant Professor of Mathematics, Statistics, and Computer Science
statistics; spatial data analysis

Debra Czarneski
Adjunct Associate Professor of Mathematics, Statistics, and Computer Science

Jaime I. Davila
Assistant Professor of Mathematics, Statistics, and Computer Science

Maria Davis
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Jill Dietz
Professor of Mathematics, Statistics, and Computer Science
algebraic topology; group theory

Erin Ellefsen
Assistant Professor of Mathematics, Statistics, and Computer Science

Francesca Gandini
Assistant Professor of Mathematics, Statistics, and Computer Science

Tina C. Garrett
Professor of Mathematics, Statistics, and Computer Science; Associate Dean of Natural Sciences and Mathematics
enumerative and algebraic combinatorics; partition theory; q-series

Olaf A. Hall-Holt (on sabbatical 2024-25)
Associate Professor of Mathematics, Statistics, and Computer Science
computational geometry; computer vision/graphics

Alexander Hanhart
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Michael Haydock
Visiting Assistant Professor in Computer Science

Barbara Johnson
Visiting Assistant Professor of Mathematics, Statistics and Computer Science

Sravya Kondrakunta
Assistant Professor of Mathematics, Statistics, and Computer Science

Anna Kraut
Assistant Professor of Mathematics, Statistics, and Computer Science

William (Will) Leeson
Instructor of Mathematics, Statistics, and Computer Science

Melissa Lynn
Assistant Professor of Mathematics, Statistics, and Computer Science

Kimberly (Kim) Mandery
Visiting Instructor of Mathematics, Statistics, and Computer Science

Paula Mercurio
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Paul J. Roback (on sabbatical 2024-25)
Kenneth Bjork Distinguished Professor of Mathematics, Statistics, and Computer Science
statistics

Joseph Roith
Associate Professor of Practice in Mathematics, Statistics, and Computer Science
statistics

Daniel Stoertz
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

David P. Walmsley
Assistant Professor of Mathematics, Statistics, and Computer Science

Matthew Wright
Associate Professor of Mathematics, Statistics, and Computer Science
applied and computational topology

Kathryn Ziegler-Graham
Professor of Mathematics, Statistics, and Computer Science
biostatistics

Martha Zillig
Visiting Assistant Professor of Mathematics, Statistics Computer Science