Data Science is an interdisciplinary field of study about methods and systems to extract knowledge or insights from large quantities of data coming in various forms.
DATA SCIENCE
Bachelor of Science

Program Overview
The BS is designed for students interested in developing expertise in data science, with three distinct concentrations.

The **genomics and bioinformatics concentration** provides a strong background in mathematics, computational thinking and biological data analysis, enabling students to analyze large quantities of data to discover new knowledge and facilitate decision making. This specialization is intended for students interested in biology, ecology, evolution, human health and disease, and precision medicine.

The **computational analytics concentration** provides a strong background in mathematics, algorithmic and computational thinking, computer systems, and data analysis, and will enable students to analyze large quantities of data to discover new knowledge and facilitate decision making.

The **computation and modeling concentration** provides the tools necessary to create accurate, robust and detailed models of real systems in a scientific or professional field. A strong core of mathematics, physics, computational methods and techniques, and data analysis will enable students to model any complex physical system. Elective courses will allow students to specialize in a specific area of interest.

Electives

**Computation and Modeling**
- Analysis and Modeling of Social and Information Networks
- Analytical Mechanics
- Knowledge Discovery and Data Mining
- Introduction of Atomic, Nuclear, and Particle Physics
- Introduction to Quantum Mechanics

**Computational Analytics**
- Environmental Engineering
- Intelligent Transportation Systems
- Introduction to Artificial Intelligence
- Life Cycle Assessment and Carbon Footprinting
- Probability, Statistics & Stochastic Methods

**Genomics and Bioinformatics**
- Biology of Cancer
- Evolutionary Ecology

Research Opportunities
Real-world, hands-on research means students learn the latest scientific techniques, from the necessary basics to high-tech analysis to potential scientific breakthroughs. Through the college's Undergraduate Research Program, opportunities are available for students to work with top faculty in research areas such as large-scale computing, bio-informatics, biology, genomics, environmental science and many other areas.

Career Options
Today, the amount of information available to decision makers is vast. Understanding data, and transforming it into knowledge and insight, is vital to almost every industry, from medicine to the environment to social networks. Data science graduates will be widely sought-after by the scientific community, business world, healthcare industry, as well as technology and consulting firms.

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