

MAJOR IN WATERSHED SCIENCE AND SUSTAINABILITY, WATERSHED DATA CONCENTRATION

The Watershed Data concentration focuses on fusing data science skills and techniques with deep knowledge of the physical, chemical, social, and biological factors that affect the quantity and quality of water as it moves through ecosystems. Students will engage in field, laboratory, and classroom research in both watershed and data science courses, and can graduate with an optional Minor in Applied Data Science in addition to their major. The program starts with students taking core foundational physical and mathematical courses that build towards an understanding of how to use watershed data to better understand watershed function and management. Core classes emphasize watershed science, data analysis, data science techniques, and combining these skills for dynamic research and reporting.

Learning Objectives

Upon completing this concentration, students will be able to:

1. Apply core principles of watershed science and sustainability, spanning climate processes, hydrology, water quality, and water management, to real-world challenges.
2. Assess how land use and water use decisions shape hydrologic processes and water quality outcomes.
3. Collect, analyze, and interpret complex meteorological, hydrological, and water quality datasets to drive informed management decisions.
4. Diagnose watershed problems and sustainability challenges through geospatial analysis, field investigation, sensor data, and predictive modeling.
5. Communicate technical findings and solutions with clarity and confidence.