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 graduate with a 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 successful completion, students will be able to:

1. Articulate core concepts in watershed science and sustainability including climate processes, surface and subsurface hydrology, water quality, human uses of water, and sustainable water management.
2. Apply data science techniques to spatial and temporal datasets to address watershed and water resource problems.
3. Collect, analyze, and interpret meteorological, hydrological, and water quality, water use and management data.
4. Analyze watershed problems and sustainability challenges using geospatial data, field observations, sensor data, and watershed models.
5. Demonstrate strong critical thinking, writing, and oral communication skills.