Watershed Science, MS, PhD

Specialization(s): Watershed Hydrology; Watershed Management; Watershed Ecology; Geomorphology and Earth Surface Processes
Department: Watershed Sciences Department
College: S.J. & Jessie E. Quinney College of Natural Resources

Overview

About This Degree

Utah State University is the only university in the state with a college devoted to the study of natural resources, and the watershed science degrees are unique in that they allow students the opportunity to integrate physics, chemistry, and biology to understand watershed systems. Students in the program study water-related physical processes, including climate, surface and ground water, river formation, soil sciences, and water chemistry. This discipline focuses on protecting aquatic systems and includes coursework in hydrology, geomorphology, stream restoration, water pollution, climate change, and aquatic habitats. Graduates are prepared to work as hydrologists, wetland specialists, and watershed managers for federal and state agencies. Each student has an individualized plan of study created for them by their graduate committee. Students are able to take courses in other departments on campus, including civil and environmental engineering; plants, soils, and climate; and geology. This program encourages students to gain a broad-based education in areas related to watershed systems and water resource use.

Because USU's watershed science program is designated as a Western Regional Graduate Program, students from participating western states qualify for in-state tuition. For more information, visit http://wrgp.wiche.edu.

Career Options

Graduates in watershed science can pursue the following careers:

- Geomorphology technician
- Environmental consultant
- Watershed coordinator
- Hydrological technician
- Researcher
- Biologist
- Environmental project manager
- Research ecologist
- Forest hydrologist
- Hydrologist

What it takes

Admissions Requirements

Students must have a science-based undergraduate degree to be considered.

To be accepted to the program, it is recommended that applicants first contact a specific faculty member with whom they are interested in working. If the faculty member is accepting graduate students and agrees to work with the student, the student can then apply by completing the following application requirements:

Application Requirements:

- Complete the online application
- Pay the $55 application fee
- Score at or above the 40th percentile on the GRE
- Have a 3.0 or higher GPA on your last 60 semester or 90 quarter credits
- Provide transcripts of all college/university credits
- Provide three contacts for letters of recommendation

International students have additional admissions requirements.

Admissions Deadlines

The department has the following deadlines:

- Fall semester - June 15
- Spring semester - October 15
- Summer semester - March 15
- Preference for financial assistance will be given to applicants who apply before January 10.

Master's Degree Plan Options

Students can receive the MS by pursuing one of two options:

- In the **Plan A** option, students complete graduate-level coursework and must write a thesis.
- The **Plan B** option requires the production of a paper or creative work of art and is expected to reflect equivalent scholarship standards as a thesis.

Financial Assistance

Most students are supported by research assistantships provided by faculty having grants or contracts. There are no separate applications for financial assistance. All applicants accepted into the graduate program before January 10 will be considered for college and university fellowships and other financial assistance for the following year. Only a few fellowships are awarded each year, usually to PhD candidates.

A variety of additional funding opportunities are available, including scholarships, fellowships, tuition awards, and travel support. Additionally, students may be eligible for subsidized health insurance through qualifying assistantships.

Program Requirements

Click here to see course requirements for the **Master of Science**.

Click here to see course requirements for the **Doctor of Philosophy**.

PhD Qualifying Exams:

All PhD students must pass a comprehensive exam. Students take these exams typically the second or third year after most of their coursework is completed. They take a written exam set by their graduate committee, which is usually followed by an oral component where the committee can pose questions to the student regarding the written exam.

Contact

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Get Involved

Professional Organizations, Honor Societies, and Clubs

American Geophysical Union: AGU is dedicated to the furtherance of the geophysical sciences through the individual efforts of its members and in cooperation with other national and international scientific organizations.

Labs, Centers, Research

Ecology Center: The Ecology Center is an administrative structure in the university that supports and coordinates ecological research and graduate education in the science of ecology and provides professional information and advice for decision makers considering actions that affect the environment. The Ecology Center at USU has had a string of directors known nationally and worldwide as premier scientists in the field of ecology, and students graduating with a degree in ecology are able to make important contacts with influential faculty that can help them go on to prestigious post-doctoral programs and faculty positions at universities around the world.

S.J. and Jessie E. Quinney Natural Resources Research Library: The Quinney Library maintains collections of materials pertaining to natural resources and the environment in a number of formats that support the programs of study and research in the College of Natural Resources and several partnering centers. The library has more than 60,000 items, both print and electronic, as well as videos, images, and more.

Utah Botanical Center: The UBC, located in Kaysville, Utah, is home to research and demonstration projects focused on sustainable living in the Intermountain West. Studies of water conservation, horticulture, water quality enhancement, wetland ecology, integrated pest management, urban forestry, agriculture, fish and wildlife, highway enhancement, and storm-water management combine to make the center a living laboratory.

Utah Transportation Center: The UTC uses its expertise in natural hazards to research congestion chokepoints, evacuation occurrences, infrastructure renewal, and operations as it relates to multi-modal transportation.

Utah Water Research Laboratory: The UWRL works on nearly 250 water-related projects a year and has projects in all of Utah's 29 counties and more than 40 countries. The lab is one of the go-to places that addresses the technical and societal aspects of water-related issues, including quality, quantity, and distribution of water.

Water Initiative: Utah State University supports a broad community of students and faculty engaged in water education, research, and outreach. The USU Water Initiative provides an overarching umbrella for the activities of this community aimed at fostering interdisciplinary collaboration and collegial sharing of ideas related to water across the departments and colleges of USU.