

# HYDROLOGY - CERTIFICATE

Hydrology is the study of water storage and movement in the Earth system, including the effects of hydrologic fluxes on the distribution of energy, chemicals and sediments.

Students may take the courses at any time during their undergraduate program, completing them by their last semester.

## Requirements

The certificate is composed of two core courses aimed at providing students with a solid foundation on hydrologic sciences and their water management implications as well in quantitative analysis, both of which will be integral for the deeper understanding of hydrologic and related processes. Students will also need to round up their training and obtain the knowledge and skills deemed as fundamental for students to have upon graduation in order to be competitive in water management, consulting and other water-related jobs.

Consistent with other programs' requirements (including the GEOG major), students will need to obtain a grade of C- or higher in each and all required courses and electives in order to obtain the certificate.

## Prerequisites

Two prerequisite courses are required for admission into the certificate program.

Code	Title	Credit Hours
<b>Prerequisites</b>		
GEOG 3511	The Water Cycle	4
GEOG 3023	Statistics and Geographic Data	4
<b>Total Credit Hours</b>		<b>8</b>

## Required Courses

Some of the classes listed below have co-requisite or prerequisite courses. Students should check to see if they meet these requisites.

Code	Title	Credit Hours
<b>Required Coursework</b>		
Three of the following GEOG courses:		9-12
GEOG 3601	Principles of Climate	
GEOG 4201	Biometeorology	
GEOG 4241	Earth Surface Processes	
GEOG 4251	River Systems and Landforms	
GEOG 4321	Snow Hydrology	
GEOG 4501	Water Issues in the American West	
Three additional courses from outside the Department of Geography		9
GEOL 3030	Introduction to Hydrogeology	
EBIO 4030	Limnology	
EBIO 4100	Advanced Ecology (Lake and Stream Ecology)	
EBIO 4155	Ecosystem Ecology	
EBIO 4160	Introduction to Biogeochemistry	

CVEN 3434 Introduction to Applied Ecology

**Total Credit Hours**

**18-21**

## Learning Outcomes

Upon completion of the program, students will be able to:

- Use a holistic approach to understand the hydrologic spatial connections and interactions between the physical and human environment.
- Use sound, defensible and rigorous quantitative and qualitative methods to analyze and interpret hydrologic data in a meaningful way.
- Articulate these findings to various audiences in a respectful and professional manner.