

Water, Civilization, and Nature: Addressing Water Challenges of the 21st Century

A massive open online course presented through [CSU Online](#) and the [CSU Water Center](#)

Course Objectives

To introduce a broad audience to water-related issues that are likely to influence world affairs during the 21st century, to present implications of these issues for the world as a whole and for individuals, and to describe innovative ways in which these issues are being addressed.

Course Description

Think about the last time you were really thirsty. Then imagine having no canned or bottled beverages at hand, and when you turn on the tap, nothing comes out. It's a two-mile walk to the nearest water hole, and the weather is hot and dry. When you get there, you have to wait your turn in the crowd, and maybe even jostle your way to the water. When you finally get your water, it's muddy and might be polluted. After drinking some, you heft your full bucket for the return walk. Trudging along, you recall Ben Franklin's words: "When the well runs dry, you know the worth of water."

This online course seeks to provide for the interested citizen an overview of the interactions among water, people, and nature at a point in history when water scarcity, water conflicts, and water disasters are extracting an ever higher toll. The uses and needs for water, by both people and nature, will be discussed, along with conflicts among those uses. Problems such as water scarcity, water disasters, and pollution will be presented, and examples of innovative approaches to addressing these problems will be offered.

Primary Topics to be Covered

The basics of water occurrence and distribution will be presented. A series of 20-minute lectures will cover topics such as urban and agricultural water use, water conflicts and diplomacy, pollution and public health, aquatic ecosystems and their needs for water, wetland and stream restoration, water disasters, and climate change.

Instructor

Glenn Patterson, MS, Watershed Management; Former Research Associate, Civil Engineering; Retired hydrologist from the U.S. Geological Survey, and Ph.D. candidate in Watershed Science at CSU. Contact: Use the course's built-in email system, or scampi162@gmail.com. Phone 303-747-2089 or 720-333-1132.

Textbook

The suggested text is "The World's Water", Volume 8 (<http://pacinst.org/publication/the-worlds-water-vol-8/>); in addition, readings will be suggested in each of the modules, and links to these readings will be provided.

Instructional Methodology

The philosophy behind the instructional methodology is to present engaging material on a series of water challenges, suggest readings to accompany the 20-minute lectures provided by top water faculty from various disciplines, and provide interactive discussions and other exercises to provoke further exploration and contemplation of the challenges and potential solutions. Implications of water challenges for the world as a

whole as well as for each of us individually will be emphasized. Case studies will be drawn from a wide variety of geographic areas, but four specific areas will receive recurring emphasis: the Colorado River Basin, the Ogallala Aquifer, the Mekong-Brahmaputra River Basin, and the Murray-Darling River Basin. For those students who would like to delve more deeply into a topic, suggested additional readings and resources will be provided.

Mode of Delivery

The course is delivered entirely online using the Blackboard CourseSites platform. Delivery is in an asynchronous manner, allowing the students to proceed at their own pace. There is a recommended sequence of modules, but the order of modules is flexible, allowing students to pick and choose among them at their discretion. Each module will have a discussion forum in which students may share their responses to questions posed by the lecturers. Students will have opportunities to select one or more groups to join, based on shared characteristics or interests.

Methods of Evaluation: Statement of Accomplishment

You can earn a **Statement of Accomplishment** by posting at least twice to *each* of the 8 discussion forums (in each of the 8 forums, post your thoughts and respond to at least one of your classmates), *and* earning an average of 75% or better on the 8 quizzes, after dropping the lowest score. That is, we will drop the lowest score of the 8 quizzes, and then average the remaining scores. Any quizzes not taken will count as a 0 in the calculations. Both the discussion forum and the quiz requirements must be met to earn the Statement of Accomplishment.

The Statement of Accomplishment will be delivered in the format of a pdf file that you may save or print for your records.

Schedule

You are welcome to explore any of the course materials in any order you like, selecting those topics of most interest to you. If you would like to earn the Statement of Accomplishment, or get the most benefit from the class discussions by participating at the same time as your classmates, follow the schedule below:

Module (Dates)	Topic(s)	Items Due to earn Statement of Accomplishment*
1 (Feb. 16 – Feb. 22)	Introduction and Course Information Water Conflicts and Diplomacy Gender Issues	Quiz 1 Discussion 1 (2 or more posts)
2 (Feb. 23 – Mar. 1)	Agriculture Groundwater	Quiz 2 Discussion 2 (2 or more posts)
3 (Mar. 2 – Mar. 8)	Energy Stormwater Water Quality	Quiz 3 Discussion 3 (2 or more posts)
4 (Mar. 9 – Mar. 15)	Leaky Rivers	Quiz 4 Discussion 4 (2 or more posts)
5 (Mar. 16 – Mar. 22)	Climate Change Snow	Quiz 5 Discussion 5 (2 or more posts)
6 (Mar. 23 – Mar. 29)	Water for Aquatic Life Restoring Streams and Wetlands Invasive Species	Quiz 6 Discussion 6 (2 or more posts)
7 (Mar. 30 – Apr. 5)	Water Disasters	Quiz 7 Discussion 7 (2 or more posts)
8 (Apr. 6 – Apr. 12)	Integrated Water Resources Management (IWRM)	Quiz 8 Discussion 8 (2 or more posts)

*All items are due by 11:59 pm Mountain Time at the end of the week.