

UC Water Academy 2025

Course Syllabus

Virtual Weekly Classes:

Tuesdays and Thursdays, 5pm – 6 pm

January 21 to March 13, 2025

Remote only (Zoom link TBD)

Optional River Trip in Summer 2025:

1–2 day rafting trip on the American River

Dates and details forthcoming

Instructors:

Dr. Ted Grantham (tgrantham@berkeley.edu)

Dr. Sarah Yarnell (smyarnell@ucdavis.edu)

Dr. Wietske Medema (wmedema@berkeley.edu)

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Course Description:

California has a rich and complex historical relationship with water that is intimately tied to the state's seasonal Mediterranean climate and pronounced geographic variability – encompassing temperate forests on the north coast, alpine ecosystems of the Sierra Nevada, densely populated urban centers along the coast, and deserts in the south. The development of water resources has played a central role in transforming the state into a leader in global agricultural production and one of the largest economies in the world. The construction of large-scale water storage and distribution systems has also transformed the state's natural environments – particularly rivers, floodplains, and seasonal wetlands – and contributed to the deterioration of water quality, decline of fisheries, and extinction of freshwater species. Climate change is creating new challenges for protecting ecosystems and delivering reliable water supplies to people, particularly the most vulnerable.

This course will provide the historical, scientific, legal, and institutional background needed to understand the challenges of providing water for California's growing population, agricultural economy, freshwater ecosystems, and other competing uses. Students from across the UC campuses will meet virtually twice a week to hear presentations from water experts, discuss relevant readings, and establish foundational knowledge around the history of water management and policy in California, the state's natural hydrologic and ecological systems, patterns of water use, and critical water management challenges. Students will also have the opportunity to participate in an optional river rafting trip in summer 2025.

Course Objectives:

1. To introduce students to local and statewide water management issues and their impact on human health, welfare, ecosystems, and natural resources;
2. To develop a basic understanding of California's water system, infrastructure, and institutions;
3. To instill a basic understanding of hydro-ecological processes operating in landscapes and the role of water linking the myriad components of the environment; and
4. To define the roles of science, management, and policy in addressing water problems.

UC Water Academy 2025 Course Syllabus

Course Format:

Weekly virtual classes will be held Tuesday and Thursday evenings from 5 pm to 6 pm between January 21 and March 13, 2025. Each class will include a 45 min presentation by a UC professor or guest instructor, followed by 10-15 minutes of Q&A.

Weekly Assignments:

Before each class meeting, you are expected to submit at least two questions and/or comments in response to assigned reading materials. Responses shall be submitted through online forms by midnight the day before the class meeting.

Independent Project Assignment:

Students will be asked to create a storymap, blog-style essay, or infographic highlighting a water issue, challenge, or solution of their choosing.

Credit:

Students can receive 1 or 2 independent study units for this course from an instructor at their home institution. Grades (Satisfactory/Unsatisfactory) will be based on completion of weekly assignments and presentation of their independent project at the end of the course.

Course schedule:

Date	Topic	Speaker	Readings
Wk 1 (Jan 21) Tue, 5- 6pm	Intro to California's water, part I	Dr. Sarah Yarnell, UC Davis	TBD
Wk 1 (Jan 23) Thurs, 5- 6pm	Intro to California's water, part II	Dr. Ted Grantham, UC Berkeley	TBD
Wk 2 (Jan 28) Tue, 5- 6pm	Central Valley water system	Andrew Schwarz, Dept of Water Resources	TBD
Wk 2 (Jan 30) Thurs, 5- 6pm	Climate change	Dr. John Abatzoglou, UC Merced	TBD
Wk 3 (Feb 4) Tue, 5- 6pm	Groundwater management	Dr. Thomas Harter, UC Davis	TBD
Wk 3 (Feb 6) Thurs, 5- 6pm	California agriculture	Dr. Alvar Escriva-Bou, UC Davis	TBD
Wk 4 (Feb 11) Tue, 5- 6pm	Water justice	Dr. Kristin Dobbin, UC Berkeley	TBD
Wk 4 (Feb 13) Thurs, 5- 6pm	Urban water management	Dr. Erik Porse, California Institute for Water Resources	TBD

UC Water Academy 2025 Course Syllabus

Wk 5 (Feb 18) Tue, 5- 6pm	Environmental flows	Dr. Bronwen Stanford, The Nature Conservancy	TBD
Wk 5 (Feb 20) Thurs, 5- 6pm	Salmon conservation and management	Dr. Stephanie Carlson, UC Berkeley	TBD
Feb 21: Draft Independent Project Due			
Wk 6 (Feb 25) Tue, 5- 6pm	The Delta	Dr. Brett Milligan, UC Davis	TBD
Wk 6 (Feb 27) Thurs, 5- 6pm	California water law	Dr. Karrigan Bork, UC Davis	TBD
Wk 7 (Mar 4) Tue, 5- 6pm	Colorado River	Dr. Kurt Schwabe, UC Riverside	TBD
Wk 7 (Mar 6) Thurs, 5- 6pm	Water-energy nexus	Dr. Josh Viers, UC Merced	TBD
Wk 8 (Mar 11) Tue, 5- 6pm	Project Presentations	TBD	TBD
Wk 8 (Mar 13) Thurs, 5- 6pm	Project Presentations	TBD	TBD
March 21: Final Independent Projects Due			

This course is part of the [COEQWAL](#) Project, supported by the UC Office of the President's [Climate Action Initiative](#).

