

NRE 2215E INTRODUCTION TO WATER RESOURCES

Syllabus – Winter 2026

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course and Instructor Information

Course Title: Introduction to Water Resources (NRE 2215E)

Credits: 3

Schedule: As indicated in the schedule

Location: online

Prerequisites: Recommended Preparation: Environmental Science (NRE 1000), Earth and Life through Time (GSCI 1050 or 1051)

Professor: [Bo Tao](#), Research Assistant Professor, Dept. of Natural Resources and the Environment; Associate Director, Connecticut Institute Water Resources

Office: Online class website on HuskyCT

Email: bo.tao@uconn.edu (Use my email for communications and not the HuskyCT message board)

Office Hours/Availability: Unless otherwise noted, I will check into the course at a minimum two times per weekday, and once a day on the weekend, to monitor discussions, clarify expectations, and respond to HuskyCT email (Messages) within 24 hours. If I expect to be unavailable due to illness, travel or family obligations, I will make every attempt to notify you in advance.

Professor Webex site: <https://uconn-cmr.webex.com/meet/botao>

Course Materials

Readings and Video: The course uses only online materials (see course module content on HuskyCT)

Course Description

Water and water resources are essential issues for maintaining a adequate food supply and a productive environment for all living organisms. This course is designed to instill a basic understanding of the water cycle and provide an overview of surface water and groundwater resource assessment, development, and management, etc. The course covers scientific, legal, environmental, and social aspects that enter into developing and maintaining sustainable water resources. Examines current and future plight of water shortages and water quality issues in the context of climate change. **The goals of this course** are to provide students with a solid background to confidently take more advanced water resource courses and to establish a knowledge base for students pursuing careers in fields such as science, technology, communication, education, extension, law and business that are relate to water resource management.

Two virtual field trips during the class period will be required for the course.

Course Objectives

By the end of the semester, students should be able to:

1. Describe scientific and technical terms and concepts related to surface water and groundwater, water quality, water usage, water treatment, sewage treatment and water in context of environmental protection;
2. Be able to analyze and evaluate scientific reports dealing with water related issues;
3. Discuss legal and economic concepts dealing with water resource protection, usage and conflicts;
4. Obtain water data from such sources as the USGS, EPA, FEMA and the scientific literature;
5. Recognize water pollutants and sources of pollutants.

Course Outline (and Calendar if Applicable)

NRE 2215E Winter 2026					
Lectures	Lecture Dates	Homework Quiz due date (all at 11:59PM)	Field Trip due date (all at 11:59 PM)	Exams	Discussion Due date
<i>Water Challenges in the 21st Century</i> 1-Historical Perspective on Water Use 2-Hydrologic Cycle and Water Budgets	12/29	Quizzes 1 & 2-12/29			
3-Surface Water Hydrology Overview 4-Reservoir Assessment and Development	12/30	Quizzes 3 & 4 12/30			Discussion 1 assigned
5-Ground Water Hydrology Overview	12/31	Quiz 5 1/2	Virtual Field Trip Due 1/2		
6-Water Quality Overview 7-Nature of Surface Water and Ground Water Pollution	1/2	Quizzes 6 & 7 1/2			
8-Surface and Ground Water Development and Management, Water Treatment Processes 9-Water System Case Studies	1/5	Quizzes 8 & 9 1/5			Discussion 1 Due 1/5 at 11:59 pm
10 Irrigation, Desalination and Wastewater Treatment	1/6	Quiz 10 1/6			
11-Legal Aspects of Water Resources Development 12-Water Allocation Law, Federal Law	1/7	Quiz (11 and 12 combined) 1/7			Discussion 2 assigned
13-Water, Fish and Wildlife 14-Local Water Jurisdiction (state and city level)	1/8	Quizzes 13 & 14 1/8			
15-Water Use Conflict Resolution	1/9	Quiz 15 1/12		Midterm 1/9 (1.5 hours), covers lecture 1-9, closed book	
16-Economics of Water Use	1/12	No quiz for lecture 16	Virtual Field Trip 2 Assignment Due 1/13		
17-Emerging Water Issues, Regional, US	1/13	No quiz for lecture 17			Discussion 2 Due 1/13 by noon.
Study day	1/14				
Final Exam (covers the entire term with emphasis on material from 9-17)	1/15-16	2-hour exam		Final 1/15-16 2hours, close book	

Course Requirements and Grading

Requirements

The lectures each week are reinforced by annotated lecture notes, readings, videos and homework quizzes accessible on the HuskyCT website. With respect to the open book homework quizzes, students are to do their own work. Assisting other students or receiving assistance from another students or anyone else, but the instructor, will constitute a violation of the student code of conduct. Class participation in discussions is also an essential element of the course.

Summary of Course Grading:

The final grade will be determined based on the numerical score calculated using the following:

Final numerical grade = $100 \times \text{total number of points} / 300$

Course Components	Point Value	% of total score
Homework Quizzes	70	23.33
Virtual Field Trips	30	10
Midterm	60	20
Final Exam	100	33.33
Class Discussion	40	13.33
Total	300	100

The letter grade will then be based on the chart below.

Grade	Letter Grade	GPA
>90-100	A	4.0
88-89	A-	3.7
86-87	B+	3.3
82-85	B	3.0
80-81	B-	2.7
76-79	C+	2.3
72-75	C	2.0
70-71	C-	1.7
66-69	D+	1.3
62-65	D	1.0
60-61	D-	0.7
<60	F	0.0

Quizzes

Lectures within each module have an associated open book review quiz that must be completed within the allotted time scheduled.

Virtual Field Trips

For the winter 2026 semester, students will be taking two virtual field trips. Following the field trips, students are required to address a series of questions based on material covered during the field trips.

Exams

Two close book exams (midterm and final) will be given using the Lockdown browser. Typically, exams consist of multiple-choice questions which may require calculations be performed to derive an answer.

Final Exam

A comprehensive, close book, in class final exam using the Lockdown browser will be given and is required to be taken to pass the class.

Discussions

(Students are required to **participate** in several focused discussions on a variety of key topics. See course HuskyCT Discussion Webpage).

Due Dates and Late Policy

The Course Schedule lists all due dates for the course. All course deadlines are based on Eastern Daylight Time (UTC-4); if you are in a different time zone, please adjust your submittal times accordingly. This course is delivered over a condensed timeframe (13 days). Due dates are firm, absent extenuating and unforeseen circumstances or unless alternative arrangements have been made in advance. To help you assure the due dates are met, I encourage you to print a hard copy of the course schedule, and insert the due dates/reminders into your calendars on your smart phone and computers. The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.

Late Policy: Students are required to strictly adhere to all deadlines. Any unexcused late quiz or other work will face a 30% deduction in score, if completed within 12 hours of the schedule due date and time. After 12 hours of the due date and time, the quiz or other work will be given a grade of 0%.

Feedback and Grades

I will make every effort to provide feedback and grades within 48 hours. To keep track of your performance in the course, refer to My Grades in HuskyCT and click on the arrow on the right to review feedback.

Student Authentication

The University of Connecticut is required to verify the identity of students who participate in distance learning or online courses and to establish that students who register in these courses are the same students who participate in and complete the course activities and assessments and receive academic credit. Verification and authentication of student identity in this course will include:

Method 1 All instruction will be through HuskyCT requiring students use their NetID and Password

Method 2 You will need to record your picture holding your ID before you take each exam and submit them to the instructor.

Copyright

Materials used in this course on HuskyCT or linked through HuskyCT are protected by state common law and federal copyright law. Materials used within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important [standards, policies and resources](#), which include:

- The Student Code
- Academic Integrity
- Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Student Health and Wellness

The University of Connecticut strives to support the optimal well-being of all students. [Student Health and Wellness](#) (SHaW) offers a comprehensive set of services including medical care, mental health, and health promotion.

Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or <http://csd.uconn.edu/>.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from [Blackboard's website](#))

Software and Technical Requirements

The technical requirements for this course include:

- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Google Apps (Google Apps @ UConn Accessibility, Google for Education Privacy Policy)
- Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- Word and spreadsheet processing software
- Reliable Internet access

NOTE: This course has NOT been designed for use with mobile devices.

Help

This course is facilitated online using the learning management platform, [HuskyCT](#). The [IT Knowledge Base](#) provides students with support, troubleshooting, and how-to information about HuskyCT. The [IT Knowledge Base](#) includes a video tour of HuskyCT.

For technical help with HuskyCT, you have access to the in-person/live person support options available during regular business hours through the [Technology Support Center](#). You also have [24x7 Course Support](#) outside of business hours, including access to live chat, phone, and support documents.

[Technical and Academic Help](#) provides a guide to frequently asked questions for online students.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics, or hyperlinks.
- Use Microsoft Word and Excel.
- Open and access PDF files.
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Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the [Office of Institutional Research and Effectiveness](#) (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.