THE OHIO STATE UNIVERSITY

SENR

COURSE SYLLABUS

Water Quality Management
ENR 355

Instructor
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Office Hours: TR 1:00 - 2:00 pm

TA
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Office Hours: T 1:00-3:00 pm; W 2:00-3:00 pm

Office Hour Policy: If you are not available to meet with us during these hours, you may call, e-mail, or see us after class to schedule an appointment at another time. If you have just a few quick questions, we may want to discuss them right after class.

Lecture Time/Location: TR 10:30 – 11:48 am, KH 333

Course Description
This course will introduce critical issues relating to water quantity and quality in the world, with a particular focus on North America. The first few lectures will be dedicated to concepts of water scarcity and competition for water at local and state scales. The remainder of the quarter will address questions related to water quality, the impairment of aquatic ecosystems and the impacts on human health. Concepts on how to determine water quality via the examination of physical, chemical and biological indicators will be introduced. Students will develop an understanding of the causes, consequences and solutions of diverse types (i.e., agricultural, domestic, industrial) of water pollution.

Course Objectives

1. Appreciate the extent and significance of the issues related to water quality and quantity facing the world.
2. Understand the impacts of human activities (via changes in chemical, biological and physical parameters) on water quality.
3. Expose students to monitoring methods used to assess water quality in various types of ecosystems.
4. Encourage critical thinking and synthesis, particularly in terms of how changes in behavior and proper management can protect water resources.
5. Engage students in contemporary debates related to the growing scarcity of clean water in the world.

Text
A textbook is not required for the class.

Carmen Class notes
We will use Carmen (https://carmen.osu.edu) throughout the quarter for announcements, assignments, additional readings and other material not handed out in class. You are responsible for checking the class web page every day to look for announcements or class changes. At the end of each week, class notes for the two lectures of the following week will be posted on Carmen. Class notes will be completed and explained during lectures. Students are encouraged to download and print the notes from the web before coming to the lectures.

Course Evaluation
Homework will be distributed throughout the quarter and will essentially consist of discussion of articles, calculation and short-answer questions. Students will have a week to turn in their homework. No late assignments will be accepted. The midterm and the final will be one hour and 18 minutes in duration. The midterm will cover material up to Feb 5; the final (during final week) will cover material from Feb 12 - Mar 5. All examinations are closed book, and will include multiple-choice, true/false, and short-answer. No make-up exams will be given. If you miss an exam, you must provide a written excuse as to why you were absent. If you fail to do so, or if your excuse is not acceptable, you will be given a zero for that exam.

		Grading Scale:			
Homework (4)	20 pts	A	94-100	C	77-76
Midterm	30 pts	A-	90-93	C-	70-73
Final (during final week)	30 pts	B+	87-89	D+	67-69
Lab report	15 pts	B	84-86	D	60-66
Participation in class	5 pts	B-	80-83	F	< 60
	100 pts	C+	77-79		

Field Trip
A field trip is scheduled on Monday Jan 29 during regular class hours. The location of the field trip has not yet been determined, but will be near campus. The class will be divided into groups. Students will be exposed to water quality sampling.

Lab Session
Each student group will schedule a 1.5-hour lab during the fifth week of class. During this lab session, each group will analyze samples from the field. Analysis will involve determination of chemical, physical, and biological water quality parameters. The instructors will gather the data collected by each group, and this data will be compiled and then distributed to the class. This data will be used to write the individual lab report.

Lab Report
Each student will be required to write a 10-page individual lab report. Specific guidelines will be given in class.

Academic misconduct
Submitting plagiarized work to meet academic requirements, including the representation of another's work or ideas as one's own; the unacknowledged use and/or paraphrasing of another person's work; and/or the inappropriate unacknowledged use of another person's idea; and/or the falsification, fabrication, or dishonesty in reporting research results, shall be grounds for charges of academic misconduct.

Tentative Course Schedule

Week	Day	Topic
1	Jan 3	Introduction of the Class
2	Jan 8	Water Quantity and Usage of Water
	Jan 10	Water Quantity and Usage of Water (con't) ***First homework Assigned. Due on Jan 17***
3	Jan 15	Ecology of Aquatic Ecosystems
	Jan 17	Water Chemistry and Water Quality Indicators
4	Jan 22	Nutrients and Eutrophication
	Jan 24	Nutrients and Eutrophication (con't) ***Second Homework Assigned. Due in lab***
5	Jan 29	*** Field sampling
	Jan 31	*** No lecture - - - Labs will be scheduled
6	Feb 5	Urban Runoff and Waste Water
	Feb 7	***Midterm (covers material up to Feb 5)***
7	Feb 12	*** Bacterial Contamination - Guest Lecture ***Third Homework Assigned. Due on Feb 19***
	Feb 14	*** Tour of a Waste Water Facility (Jackson Pike Treatment Plant)
8	Feb 19	Aquatic Toxicology
	Feb 21	Thermal Pollution
9	Feb 26	Pesticides and Metals

		Fourth Homework Assigned. Due on Mar 4
	Feb 28	Acid Pollution
10	Mar 4	Oil Pollution
	Mar 6	*** Wrap-up

Final on Tuesday March 11, 9:30-10:48 am (covers material Feb 12 – Mar 6)

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