

Environmental Engineering Fundamentals

Civil Engineering 2385
The University of Texas at El Paso



Course Information

CE 2385: Environmental Engineering Fundamentals
CRN: 24859
Term: Spring 2024
Delivery Method: In-person
Meeting Day and Time: M, W, F (10:30-11:20 AM)
Location: Education Building, Room 301

Instructor Information

Professor Lauren Kennedy
Written communication: lkennedy@utep.edu
Office Location: Engineering Building, 207
Office Hours:

- M 11:30-12:30 (in-person)
- By appointment (virtual or in-person). Schedule appointment by email.

Lab Website: <https://kennedywaterlab.com>
[Personal Teams link](#)

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Course Description

CE 2385 introduces the scientific knowledge applied to minimize environmental contaminants and their adverse impacts. Contaminants that impact environmental resources and human health are commonly controlled by applying fundamental concepts, for example from chemistry and fluid mechanics. In this course, students will learn how fundamental concepts can be applied to remove, transport, and/or transform contaminants in engineered and natural systems. This course introduces the principles of water quality engineering, air quality engineering, and hazardous waste management.

Prerequisites: (1) CE 2375: Intro to Fluid Mechanics. (2) CHEM 1305: General Chemistry

Learning Objectives

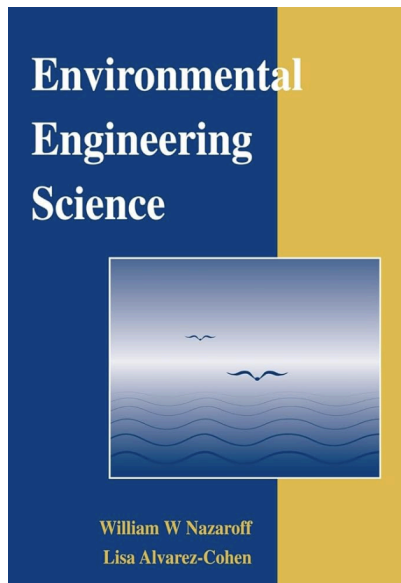
By the end of the course students will be able to:

1. Describe the role of environmental engineers in society
2. Explain the basic properties of water and air as well as sources of and properties of key contaminants

3. Model transformation and transportation processes of contaminants in engineered and natural systems
4. Determine the function of unit processes in water, air, and hazardous waste treatment

Required Materials

Note that the material covered in class will complement rather than duplicate what is covered in the text. The reading schedule can be found in the schedule section of the syllabus. It is important to do the assigned reading and to attend class. Additional assigned readings will be available via PDF in Blackboard.



Nazaroff, W. W. and Alvarez-Cohen, L. (2000). *Environmental Engineering Science*. Wiley, ISBN: 0-471-14494-0

Assignments and Grading

There will be 9 assignments during the semester, two midterm examinations, and a final examination. Assignment 9 is required to be completed and the grade cannot be dropped. Of assignments 1-8, one assignment grade with the lowest score will be discarded. Thus, the assignments category will be based on 8 assignment grades total. You must show your work on assignments and exams to receive full credit.

Final grades will be weighted as follows (1000 points total):

- Assignments 20% (200 pts)
- Exam #1 20% (200 pts)
- Exam #2 20% (200 pts)
- Final Exam 40% (400 pts)

Grade Distribution:

- 1000-900 = A
- 899-800 = B

- 799-700 = C
- 699-600 = D
- 599 and Below = F

Assignments will be submitted in Blackboard as a single word or PDF document. Due dates are available in the schedule section of the syllabus. Exams will be in person and closed book. Midterm exams will occur during class time (see the schedule section of the syllabus).

There will also be one optional extra credit assignment worth up to 15 points added onto your final grade. **I do not offer additional extra-credit assignments or roundup grades.**

Technology Requirements

Some course content is delivered via the Internet through the Blackboard learning management system. In addition, some course content may be delivered via the Internet through Teams for class lectures and some scheduled office hours. Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best browsers for Blackboard; other browsers may cause complications. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have access to a computer/laptop, a phone camera/webcam, and a microphone. You will need to download or update the following software: Microsoft Office and Adobe Acrobat Reader. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you do not have word-processing software, you can download Word and other Microsoft Office programs (including Excel, Teams, and more) for free via UTEP's Microsoft Office Portal. Click the following link for more information about [Microsoft Office 365](#) and follow the instructions.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP [Help Desk](#) as they are trained specifically in assisting with technological needs of students. **Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!**

Course Communication

- **Office Hours:** I will have office hours in person on Mondays (11:30-12:30). If we do not have class on Monday that week (e.g., university holidays), I will not have scheduled, in-person office hours. I will also have virtual or in-person office hours via appointment. E-mail me to set up an appointment (see below).
- **Email:** UTEP email is the best way to contact me. I will make every attempt to respond to your email within 24-48 hours of receipt. When emailing me, be sure to email from your UTEP student email account and please put the course number in the subject line. In the body of your email, clearly state your question or appointment request. If you are requesting an appointment, include your availability.

- **Announcements:** Check the Blackboard announcements frequently for any updates, deadlines, or other important messages

Attendance and Participation

Your participation in the course lectures is important not only for your learning and success but also to create a community of learners. Please keep these etiquette guidelines in mind. Failure to observe them may result in disciplinary action.

- Come to class on time. If you are late, please quietly come into class at the back of the room.
- Turn off phones or place into silent mode. Do not text during class.
- Do not chat with your neighbors during class, except during organized discussions.
- Feel free to use a computer to take notes but do not 'surf' the web - this can be very distracting for other students.
- Respect the instructor and other students during class or on Blackboard
 - Always consider audience. All communication should reflect polite consideration of other's ideas.
 - Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.
 - When reacting to someone else's comments or responses to questions, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.
 - Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. **Do not copy documents on Blackboard and paste them to a publicly accessible website, blog, or other space.**

Illness Precautions

Please stay home if you have symptoms of a communicable illness. If you are feeling unwell, please let me know as soon as possible via email, so that we can work on appropriate accommodations.

Course Drop Policy

If you feel that you are unable to complete the course successfully, please let me know and then contact the [Registrar's Office](#) to initiate the drop process. If you do not, you are at risk of receiving an "F" for the course.

Makeup Exam and Late Work Policy

Makeup Exam Policy: With prior consent and in cases of documented emergencies, makeup exams may be administered up to 1 week after the date of the official exam. Requests are to be made IN WRITING (e.g., email) prior to the official exam date or you will forfeit your opportunity to take the makeup exam. **Unexcused** missed exams will receive a 0.

Late Work Submission Policy: With prior consent and in cases of documented emergencies, late work may be submitted up to 1 week after the submission time. Requests for late submissions must also be made IN WRITING (e.g., email) prior to the due date. **Unexcused** late submissions will receive a 0.

Alternative Means of Submitting Work in Case of Technical Issues

I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. **Once you have uploaded an assignment to blackboard, check that the document properly uploaded and that you can view it in the system or download it from Blackboard and open the downloaded file without corruption.** I also suggest you save all of your typed work in a separate Word document as a backup before the assignment deadline. This way, you will have evidence that you completed the work and will not lose credit. If you are experiencing difficulties submitting your work through Blackboard, please contact the UTEP Help Desk. You can email me your backup document as a last resort.

Incomplete Grade Policy

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

Accommodations Policy

The University is committed to providing reasonable accommodations to students with documented disabilities. Students who become pregnant may also request reasonable accommodations, in accordance with state and federal laws and regulations and University policy. Accommodations that constitute undue hardship are not reasonable. To make a request, please register with the UTEP Center for Accommodations and Support Services (CASS). Contact CASS at 915-747-5148, email them at cass@utep.edu, or apply for accommodations online via the CASS portal. **Please submit the subsequent paperwork to the instructor right away.**

Scholastic Integrity

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict](#)

[Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

Students should practice academic integrity in all of its forms, including abstaining from plagiarism, cheating, and other forms of academic misconduct. **I have a ZERO tolerance policy for academic dishonesty.** If you are caught cheating or plagiarizing, you will receive a 0 on the assignment/exam and the incident will be reported to the OSCCR.

Guidance on Artificial Intelligence

Some AI technologies or automated tools, particularly generative AI such as ChatGPT or DALL-E, can be beneficial during the early brainstorming stages of an activity, and you are welcome to explore them for that purpose. However, keep in mind that AI-generated ideas are not your own and may hinder your ability to think critically and creatively about a problem. It is also important to remember that these technologies often “hallucinate” or produce materials and information that are inaccurate or incomplete—even providing false citations for use.

That said, you are not allowed to submit any AI-generated work in this course as your own. If you use any information or materials created by AI technology, you are required to cite it like you would any other source, and explain how it was used (e.g., “ChatGPT was used to check my grammar on this response”). Consider how this will affect your credibility as a writer and scholar before doing so. Any direct use of AI-generated materials submitted as your own work will be treated as plagiarism and reported to the Office of Student Conduct and Conflict Resolution (OSCCR).

Particularly because of the potential for hallucinations, I do not recommend using AI for this course. However, if using these tools is helping you engage with the subject and expand your understanding, I am curious to learn more about how you are using them.

Plagiarism Detecting Software

Some of your course work and assessments may be submitted to SafeAssign, a plagiarism detecting software. SafeAssign is used review assignment submissions for originality and will help you learn how to properly attribute sources rather than paraphrase.

Copyright

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

Preferred Name & Pronoun

This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is on the class roster, please let me know. Feel free to correct the instructor on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me directly in class or via email (ickennedy@utep.edu).

[Texas Senate Bill 17](#), the recent law that outlaws diversity, equity, and inclusion programs at public colleges and universities in Texas, does not in any way affect content, instruction or discussion in a course at public colleges and universities in Texas. Expectations and academic freedom for teaching and class discussion have not been altered post-SB 17, and students should not feel the need to censor their speech pertaining to topics including race and racism, structural inequality, LGBTQ+ issues, or diversity, equity, and inclusion.

Resources

UTEP provides a variety of student services and support. Please refer to the [QR code](#) below for a listing of campus resources -- where you can go for assistance.



Schedule

Date	Week day	Topic	Reading	Homework Out	Homework Due
1/15/24	M	No class or office hours: Martin Luther King Jr. Day			
1/17/24	W	Course introduction	Chapters 1-2		
1/19/24	F	Properties of air and water; sources and properties of		1	

Date	Week day	Topic	Reading	Homework Out	Homework Due
		contaminants			
1/22/24	M	Properties of air and water; sources and properties of contaminants			
1/24/24	W	Properties of air and water; sources and properties of contaminants			
1/26/24	F	Transformation processes	Chapter 3	2	
1/29/24	M	Transformation processes			
1/31/24	W	Transformation processes			1
2/2/24	F	Transformation processes			
2/5/24	M	Transformation processes			
2/7/24	W	Transformation processes			2
2/9/24	F	Transformation processes			
2/12/24	M	Transport processes	Chapter 4	3	
2/14/24	W	Transport processes			
2/16/24	F	Transport processes			
2/19/24	M	Transport processes			
2/21/24	W	Reactor models (not on Exam 1)	Chapter 5	4	3
2/23/24	F	Reactor models (not on Exam 1)			
2/26/24	M	Flex			
2/28/24	W	In-Class Mid-term Exam 1			
3/1/24	F	Reactor models	Chapter 5		
3/4/24	M	Water quality engineering	Chapter 6	5	
3/6/24	W	Water quality engineering			4
3/8/24	F	Water quality engineering			
3/11/24	M	No class or office hours: Spring Break			
3/13/24	W	No class or office hours: Spring Break			
3/15/24	F	No class or office hours: Spring			

Date	Week day	Topic	Reading	Homework Out	Homework Due
		Break			
3/18/24	M	Water quality engineering	Chapter 6		
3/20/24	W	Water quality engineering		6	5
3/22/24	F	Water quality engineering			
3/25/24	M	Water quality engineering			
3/27/24	W	Water quality engineering			
3/29/24	F	No class: Cesar Chavez Holiday			
4/1/24	M	Water quality engineering	Chapter 6		
4/3/24	W	Water quality engineering			6
4/5/24	F	air quality engineering (not on Exam 2)	Chapter 7	7	
4/8/24	M	Flex			
4/10/24	W	In-Class Mid-term Exam 2			
4/12/24	F	Air quality engineering	Chapter 7		
4/15/24	M	Air quality engineering			
4/17/24	W	Air quality engineering		8	7
4/19/24	F	Air quality engineering			
4/22/24	M	Air quality engineering			
4/24/24	W	Solid waste management	Chapter 8	9	8
4/26/24	F	Solid waste management			
4/29/24	M	Solid waste management			
5/1/24	W	Flex			9
5/3/24	F	No class: Dead Day			
5/10/24	F	Final Exam (10 AM - 12:45 PM)			

Disclaimer

This syllabus may be subject to modification. The instructor will inform students of any changes.