

## CE 3153 – Water and Wastewater Laboratory – Fall 2019

The University of Texas at El Paso  
 Department of Civil Engineering  
 Laboratory: M or W 1:30-4:20pm, ENGR 204  
 Laboratory CRNs: M – 18983, W – 18993  
 Prerequisites: CE 2375 and Junior Standing

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### NOTICE: Degree Plan Change

In previous semesters, CE 3342 was only lecture, and the CE 3153 laboratory was a separate course. However, in the new B.S. C.E. degree plan, this course is now an integrated lecture and laboratory. Thus, students taking this course this semester need to be aware of several directives:

- If you are on an old degree plan that needs both CE 3342 (lecture only) and CE 3153 (lab), then:
  - If you have not already taken CE 3342 (lecture only), then you will need to register for both the CE 3342 (lecture and lab) and the CE 4171 Engineering Problems course (CRN 16042), and you will have additional reading assignments so that you can satisfy the four credit-hour requirement for your degree plan. (When you apply for graduation, the combination of the new CE 3342 with the CE 4171 will count together for credit for CE 3342 and CE 3153.)
  - If you already passed CE 3342 (lecture only) in a previous semester, then you only need to register for the CE 3153 (lab).
- If you are on the new degree plan which does not require CE 3153 (lab), then you will need to register for only the CE 3342 (lecture and lab).

### Philosophy

I believe that *teaching* and *learning* are interdependent; you cannot have one without the other. You and I are partners and colleagues, working together to help you become a knowledgeable, curious, intrinsically motivated, and confident engineer. I want to help you become a critical thinker with sharpened skills of analysis, evaluation, and synthesis. I incorporate team-based, hands-on laboratory exercises in this course to help you prepare for professional practice and to help you develop as a more robust and intrinsically-motivated engineer. I have also realized that it is important for students to complete weekly reports, which help students keep up with understanding and applying concepts.

### Expectations

Participation: More than simply attending class, you are invited to *think*, and *participate* in the lectures and discussions. I encourage you to be curious and inquisitive during class discussions and online forums.

Preparedness: I recommend that you bring the textbook, a personal course notebook, a pen or pencil, a calculator, completed assignments, and questions from the lab exercises and reading.

Punctuality: You are expected to be on time to class, laboratory exercises, and plant tours. Late assignments will not be accepted.

Ethics: In engineering, personal integrity is of utmost importance, especially in the assessment and reporting of environmental conditions. Also, in most cases, it is necessary to work in teams to develop and design optimal solutions to problems and challenges, and it is essential that each team member contribute to the productivity of the team. In this course, I strongly recommend that you complete assignments in teams; in many cases, you will help each other through the solution of difficult problems. Every student is accountable for *understanding* the concepts, analysis, and solution. Each student is accountable for understanding and *contributing* (equitably) to the team projects. Any student committing plagiarism (*e.g.*, copying another's work without understanding) or any other form of academic dishonesty will be reported to the Dean of Students for disciplinary action (which may include expulsion from the University). For a concise summary of

engineering ethics, I have provided here the Fundamental Canons within the [Code of Ethics](#) of the American Society of Civil Engineers (ASCE):

1. *Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development<sup>3</sup> in the performance of their professional duties.*
2. *Engineers shall perform services only in areas of their competence.*
3. *Engineers shall issue public statements only in an objective and truthful manner.*
4. *Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.*
5. *Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.*
6. *Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero-tolerance for bribery, fraud, and corruption.*
7. *Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision.*

**Course Grade**

Assessment of your performance in this course will be determined by lab reports, quizzes, and tour attendance. (No makeup assignments will be offered.) Handwritten homework calculations must be submitted on engineering paper. The course average will be computed according to the following grading schemes:

<b>Evaluation</b>	<b>Fraction (%)</b>
Lab Report Avg	50
Quiz Avg	20
Lab Exam Avg	30
<i>Total</i>	<i>100</i>

A five-point deduction will be assessed on your final course average for a late arrival to an off-campus tour; a ten-point deduction will be assessed on your for not attending an off-campus tour. The final course grade will be determined according to the following:

<b>Course Average (%)</b>	<b>Grade</b>
≥ 90	A
80-89	B
70-79	C
60-69	D
< 60	F

I reserve the right to modify or augment this grading scheme for the sake of improving the educational effectiveness of this course.

**Special Accommodations**

The University of Texas at El Paso provides, upon request, appropriate academic accommodation for students with disabilities. For more information, contact the Center for Accommodations and Support Services (<https://www.utep.edu/student-affairs/cass/>).

**Lab Schedule**

<b>Lab</b>	<b>Week starting</b>	<b>Description</b>
1	Aug 26	Mon Safety Briefing, Documentary: Last Call at the Oasis (2011)
-	Sep 02	Mon <i>Labor Day Holiday - University Closed (no labs this week)</i>
2	Sep 09	Mon pH and alkalinity
3	Sep 16	Mon Turbidity, conductivity, TSS, & TDS
4	Sep 23	Mon Tour: Canal Street Drinking Water Treatment Plant
5	Sep 30	Mon Titrations: hardness, chloride, & sulfate
6	Oct 07	Mon Spectrophotometers (chlorine, silica)
7	Oct 14	Mon IDEXX Most Probable Number: Coliforms & <i>E. coli</i>
8	Oct 21	Mon Tour: Kay Bailey Hutchison Plant Desalination Plant
9	Oct 28	Mon Ion chromatography & ICP
10	Nov 04	Mon Tour: Hickerson Wastewater Treatment Plant
11	Nov 11	Mon DO, BOD, COD
12	Nov 18	Mon Nutrients: nitrogen, phosphorous
13	Nov 25	Mon Tour: Parkhill, Smith, & Cooper Engineering Office
14	Dec 02	Mon Tour: Fred Hervey Wastewater Reuse Plant