CENG 3351: Introduction to Environmental Engineering
Section 010 Tuesdays and Thursdays 8:00–8:50, VIN 238
Fall Semester 2018

1: Instructor
- Dr. Azadeh Bolhari Phone: 325-486-5508 Email: azadeh.bolhari@angelo.edu
- Office: VIN 274 Office Hours: W 9:00-11:00, F 10:00-11:00 am

2: Required Materials
- Integrated Environmental Modeling, Ramaswami, Milford and Small, John Wiley & Sons, 2005

3: Prerequisites
- Chemistry 1411 and Engineering 2302 or department permission

4: Course Description
In this course, the fundamentals of environmental engineering are presented in a unified manner, crosscutting atmospheric, surface water and groundwater. In this course, you will develop analytical skills required to work effectively with the following concepts and processes.

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>DATES</th>
<th>RESOURCES</th>
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<tbody>
<tr>
<td>Multimedia partitioning of environmental pollutants</td>
<td>Weeks 1-5</td>
<td>Chapter 1, 2 and 3</td>
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<tr>
<td>Fate and transport of pollutants: CSTR, PFR, MFR</td>
<td>weeks 6-7</td>
<td>Chapter 5</td>
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<td>Risk assessment</td>
<td>weeks 8-9</td>
<td>Chapter 13</td>
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<td>Environmental regulations</td>
<td>week 10</td>
<td>Chapter 2</td>
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<td>Physical, chemical and biological processes in water and wastewater treatment</td>
<td>week 11</td>
<td>Chapter 12</td>
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<td>Groundwater remediation</td>
<td>weeks 12-13</td>
<td>Handout</td>
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<td>Waste containment systems</td>
<td>weeks 14-15</td>
<td>Handout</td>
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5: Course Learning Outcomes
When you complete this class, you should be able to:
1. Calculate partitioning coefficient of pollutants in environmental compartments
2. Estimate Fate of pollutants in the environment
3. Recognize contaminant transport mechanisms from a source to a recipient
4. Calculate the speed of contaminant transport in the environment
5. Calculate risk of contaminants
6. Describe Environmental Law
7. Distinguish between groundwater remediation technologies
8. Distinguish waste disposal/containment systems
6: Course Outcome Mapping to ABET Criterion 3

The mapping of the course outcomes to the program outcomes is shown in Table 1. The program outcomes correspond to the listed ABET Criterion 3 student outcomes (1) through (7) listed below.

Table 1. CENG 3351 course outcome mapping

<table>
<thead>
<tr>
<th>Course Learning Outcomes</th>
<th>1 Problem Solving</th>
<th>2 Design</th>
<th>3 Experimentation</th>
<th>4 Communication</th>
<th>5 Professional Ethics</th>
<th>6 Ongoing Learning</th>
<th>7 Team-work</th>
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7: Course Structure and Communication

This class meets once twice a week in two 50-minute sessions. To take maximum advantage of this time, you are expected to have done the reading assigned for each class period beforehand. Please bring the textbook, any relevant handouts and a calculator with you to the class.

7.1: Calculator policy

The use of a calculator is required and allowed on all exams and quizzes. Computers, tablets, smart phones, I-pads and similar electronics are not allowed on quizzes and tests. Calculators with graphing capabilities will be allowed in the course. Recommended calculators with these capabilities include the HP48, HP49, HP50, TI86, and TI89. However, only calculators currently allowed in the Fundamentals of Engineering (FE) and Professional Engineering (PE) exams will be allowed in exams and quizzes. Please refer to the National Council of Examiners for Engineering and Surveying (NCEES) calculator policy for the list of acceptable calculators (http://ncees.org/exams/calculator-policy/).

7.2: Professionalism

One of the goals of this course is to teach students about professionalism, including the standards and expected behavior of your chosen profession. With this in mind, students are expected to demonstrate a behavior consistent with the conduct of an individual practicing in the engineering profession. Students are expected to: (1) come prepared for class; (2) respect faculty and peers; (3) demonstrate responsibility and accountability for your own actions; (4) sensitivity and appreciation for diverse cultures, backgrounds, and life experiences; (5) offer and accepts constructive criticism in a productive manner; (6) demonstrate an attitude that fosters professional behavior among peers and faculty; (7) punctual to class meetings; (8) maintain a good work ethic and integrity; and (9) recognize the classroom as a professional workplace.
8: Graded Material

8.1: Class Attendance, Participation, Timeliness

Attendance & participation: The number one complaint of engineering clients is the timeliness of deliverables (reports, drawings, specifications, etc). As a professional engineer you will be expected to arrive at scheduled meetings on time and prepared. Late proposals are not accepted. Late specifications or drawings may cost the engineer money. Professional engineering standards apply in this course.

Timeliness: You are expected to meet every class meeting on time and prepared. Attendance will be taken. Arriving late or leaving early will be counted as an absence. Should you find it necessary to miss a class for any reason, you are expected to notify your instructor as early as the absence is known—preferably before the absence. Blackboard will be the main forum for communicating with your instructor and fellow students. One purpose of the discussions is to inform your instructor about any open questions from the reading or other material. It’s important that you provide feedback to your instructor. Unless otherwise specified, assignments are due at the beginning of the class period on the specified due date.

8.2: Homework

Homework will be due nearly every class meeting. These assignments will be made via Blackboard. Your lowest homework grade will be dropped.

8.3: Grades: Weighting and Letter Grades

- Three tests (you can drop one bad grade) account for 30% of your total grade
- Lab reports (20%) and Final exam (20%) of your total grade
- Homework (25%) and class participation (5%) of your total grade

9: Classroom and University Policies and Student Support

9.1: Academic Integrity

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

9.2: American Disability Act

Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request and to implement academic accommodations.

9.3: Religious Holy Day

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.