

## **Introduction to Environmental Science (ESCI1301/CRN15387) - 2020 Fall**

### **Instructor:**

Dr. **Jie Xu**, Geological Sciences #319, [jxu2@utep.edu](mailto:jxu2@utep.edu)

Office hours: Thursday 11:00-11:30 through Zoom or by appointment via email

### **Textbook:**

*Essential Environment*, Withgott and Laposata (ISBN 978-0-321-98457-9)

### **Course Description:**

This introductory course is designed to be a survey of various areas that fall under the umbrella of environmental science. The lectures will cover the following major modules: (1) Sustainability and scientific methods; (2) environmental policy, and environmental justice; (3) population and community ecology, (4) human population, food, and soil; (5) surface and ground water; (6) atmosphere and air pollution; (7) climate change; and (8) renewable and non-renewable energy. Additionally, we may discuss about local/regional environmental problems.

### **Learning Goals:**

Upon successful completion of this course through lectures, post-class quizzes and assignments, and forum discussions, I expect you to:

#### *Knowledge-wise*

- Comprehend the concept of sustainability and how it may affect our future
- Understand some of the basic concepts such as systems, cycles, flows, and feedbacks, that characterize and govern the structure, function, and interactions of the atmosphere, the hydrosphere, the lithosphere, as well as the biosphere
- Refine skills in analysis and evaluation of complex systems and be familiar with scientific methods by which knowledge is obtained and advanced in environmental science
- Demonstrate a solid scientific base when discussing or analyzing environmental policies or environment-related news at various levels

#### *Skill-wise*

- Grow in scientific reasoning skills involving inquiry, evidence evaluation, inference and argumentation that support the formation and modification of concepts and theories about the natural and social worlds
- Be effective communicators of scientific information in graphical, spatial, and written forms

### **Grading Policies:**

The final grade is based on the total score of several major components: one final exam, two mid-term exams, post-class quizzes & assignments (we have ~ 8 quizzes and ~5 assignments altogether; the actual numbers may vary), and post-class surveys. Extra credit options may become available through the course. The purpose of the extra-credit options (if available) is to encourage you to dig more into the current environmental issues either regionally or globally that are rooted in Earth and environmental science.

### **Final exam (25%)**

**Mid-terms (40%)**

**Quizzes + assignments (25%)**

**Participation in surveys (10%)**

> 90% - A; 89-80% - B; 79-70% - C, 69-60% - D; < 60% - F  
(Please be aware that percentiles will be used to assign the final grades)

**Important Notes:**

- **How to stay connected:** due to the current pandemic situation, all the lectures will be delivered as recorded videos along with the lecture materials on **Blackboard**. Thus, it is extremely important for each student to keep connected through **UTEP emails** and through **Blackboard**. Major announcements will be made through UTEP emails.
- **Online asynchronous lectures:** there will be two recorded lectures each week that will be posted on Monday and Wednesday, respectively, by 10 am.
- **Office hour** Zoom meeting information:  
<https://utep-edu.zoom.us/j/302233636?pwd=aXllbEZlYWhWWFNrZC84L3VlbytKdz09>  
Meeting ID: 302 233 636  
Passcode: 01234
- **Exam policy:** For each online quiz, assignment, or exam, only a certain period will be given to complete these tasks, which will be specified in the recorded lectures before the test or assignment is posted and made available. Please pay close attention to the deadlines and ensure timely submissions of each task for full credit. No-make tests will be given only for exceptional conditions including critical illness (documentation required), official University businesses (instructor's prior approval and documentation required) or extreme emergencies (documentation required).
- **Honor codes:** academic integrity is the fundament principle for all UTEP students, staff, and faculty. Refer to the UTEP Student Handbook where scholastic dishonesty is defined (<http://sa.utep.edu/osccr/academic-integrity/>). Proven violations of these detailed regulations may result in any of the consequences outlined in the Handbook.

**Drop date:**

The College of Science aligns with UTEP's posted drop date of **October 30th** for the Fall 2020 semester. We may not approve student- or faculty-initiated drop requests for a course after that date, except under circumstances of complete withdrawal of all courses due to medical or non-medical reasons.

**Incomplete grades:**

All grades of Incomplete (I) must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to one month based upon completion data. A grade of *Incompletion* is only used in exceptional circumstances.

**Students with Disabilities:**

If you have a disability and may need accommodations in this class you are encouraged to contact the Center for Accommodations and Support Services (CASS) at 915-747-5148 or

[cass@utep.edu](mailto:cass@utep.edu) within the first two weeks of class. Here is the link to the resources available to students with disabilities <http://admin.utep.edu/Default.aspx?tabid=61021&submenuheader=2>.

**Military Service:**

If you are a military student with the potential of being called into military service and/or training during the course of the semester you are encouraged to contact the instructor regarding these matters.

<i>Week</i>	<i>Date</i>	<i>Topics</i>	<i>Textbook</i>
1	Aug 24 Aug 26	Introduction, scientific methods Basics of environmental systems (Quiz #1)	Ch 1 Ch 2
2	Aug 31 Sept 2	Life and biodiversity Extinction – “6 <sup>th</sup> Mass extinction”, population	Ch 3
3	<i>Sept 7</i> Sept 9	<i>No class - Labor Day</i> Population and community ecology I (Quiz #2)	Ch 4
4	Sept 14 Sept 16	Population and community ecology II Human population & Assignment #1	Ch 4 Ch 6
5	Sept 21 Sept 23	Exhibition of assignments #1 – conclusion on world population Environmental economics and policies I (Quiz #3)	Ch 5
6	Sept 28 Sept 30	Environmental economics & policies II <b>Mid-Term 1</b>	Ch 5
7	Oct 5 Oct 7	Soil and agriculture GMO food & Assignment #2	Ch 7
8	Oct 12 Oct 14	Fresh water sources – surface water Fresh water sources – groundwater (Quiz #4)	Ch 12
9	Oct 19 Oct 21	The world ocean I The world ocean II (Quiz #5)	Ch 12
10	Oct 26 Oct 28	Water resource management The atmosphere, weather and climate (Quiz #6)	Ch 12 Ch 13
11	Nov 2 Nov 4	<b>Mid-Term 2</b> Air pollution & Assignment #3	Ch 13
12	Nov 9 Nov 11	Extreme severe weathers Global climate changes I – basics (Quiz #7)	Handouts Ch 14
13	Nov 16 Nov 18	Global climate change II – interactions among different cycles & Assignment #4 Energy I – fossil fuels	Ch 14 Ch 15
14	Nov 23 Nov 25	Energy II – nuclear energy Energy III – renewable energy (Quiz #8)	Ch 15 Ch 16
15	Nov 30 Dec 2	Waste management Review session of the entire semester’s content	Ch 17 Ch 16
16	Dec 7 Dec 11	<b>Final Exam</b>	