

# Monitoring regional sustainability

## ESCI 4315 (CRN#16172)

T/Th 1:30-2:50; Biology B309

### Fall 2018

#### Instructors:

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Office Hours: by appointment

Dr. Lixin Jin, Office: 221A Geology, Tel: 747-5559, email: ljin2@utep.edu  
Office Hours: by appointment

**Required Textbook:** NONE

#### Goals:

In this senior-level course multiple projects are designed to understand and solve local and regional environmental problems that are water-related. Through hands-on experiences, field trips and guest lectures, students will be trained to collect data using state-of-the-art instruments and techniques, analyze their own data as well as larger, more complex datasets, and understand the importance of water resources in societal stability.

The objectives are to:

1. Increase awareness of water-related issues;
2. Provide experiential learning and train our students to become future water professionals;
3. Encourage team work and group discussion; and
4. Improve analytical, writing and oral skills.

#### Grades:

	%
Weekly exercises	70
Rivers in Crisis (team presentation & discussion)	15
Peer leader activities** Students with permission of instructors can be excluded, with points spread evenly among other items	5
Participation and peer evaluation	10

Exercise 1 to exercise 5: 10 % each

Exercise 6: 20%

Lecture notes, instructions, rubrics for reports and grades will be posted on Blackboard.

## **Course policies:**

**Class participation:** You are expected to come to class prepared to answer questions about the assigned readings. Although attendance at each lecture is not mandatory, pop-quizzes may be given at any time during the lecture period and counted as a homework assignment.

### **E-mail and Blackboard:**

You are required to provide the teaching team with a UTEP e-mail address and check your UTEP e-mail and Blackboard daily. We will use your UTEP e-mail to contact you and you will use your UTEP e-mail to contact us as well. Do not use Blackboard for e-mail.

### **Dropping the course:**

Students may drop the class and receive a W (withdrawal) on their transcript prior to Nov. 2, 2018. You must consult the Instructor prior to dropping. Due to the University's six-drop rule, dropping the course may not be in your best interest. After this date, a drop will result in an F on your transcript. Receiving either a W or an F in any course may prevent you from meeting the satisfactory Academic Progress requirements necessary to receive financial aid.

### **Student Conduct:**

Each student is responsible for notice of and compliance with the provisions of the Regents' [Rules and Regulations](http://www.utsystem.edu/bor/rules/homepage.htm), available at <http://www.utsystem.edu/bor/rules/homepage.htm>. All students are expected to behave as courteous, responsible adults. We will have frequent discussions and students are expected to tolerate and respect the opinions of others.

### **Cellular and electronic devices:**

Cell phones and other electronic and recording devices must be turned off during class time to minimize classroom disruptions and protect the integrity of test-taking situations. This means you cannot make calls, send text messages, or use social media during class. You may use your laptop or tablet to take notes in class, but this privilege will be revoked if the devices are used inappropriately.

Students who fail to follow this rule may incur disciplinary action up to and including dismissal from the class and upon repeated offenses, the course.

### **Academic Integrity:**

All graded assignments must be entirely the work of the *individual* student. *"Plagiarism"* means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. (from the Regents' [Rules and Regulations](http://www.utsystem.edu/bor/rules/homepage.htm)) Plagiarism is a serious violation of university policy and will not be tolerated. All cases of suspected plagiarism will be reported to the Dean of Students for further review.

### **Disability accommodations:**

If you have or suspect you might have a disability and need an accommodation you should contact the Center for Accommodations and Support Services (CASS) at 747-5148 or at [cass@utep.edu](mailto:cass@utep.edu) or go to Room 106 Union East Building. Students are responsible for providing any CASS accommodation letters and instructions. <http://sa.utep.edu/cass/>

### Tentative Schedule:

<b>Week of</b>	<b>Topic</b>	<b>Relevant papers</b>
Aug. 27	Introduction: Global water cycles and water quantity (Jin, Lougheed)	
Sept. 3	9/4 Intro to Excel 9/6 - Exercise 1: Effect of climate on stream discharge (Lougheed)	
Sept. 10	Exercise 1 (cont'd): Effect of climate on stream discharge (Lougheed) 9/13 - Introduction to R (using Ex. 1 data)	Seager et al. 2010
Sept. 17	9/18 - Hugo Gutierrez Exercise 2: Natural versus managed hydrographs (Jin)	Gutierrez 2014 White and Greer 2008
Sept. 24	9/25 - Field trip (IBWC) - Meet at 12:30 9/27 - Exercise 2 cont'd	
Oct. 1	Exercise 3: Flood hazard evaluation, NADP precipitation data (Jin)	Winsemius et al. 2015
Oct. 8	10/9 - Hargrove - USDA water sustainability 10/11 & 10/16 Exercise 4: Watershed Modeling (Lougheed) 10/11 - ESCI 2204 mixer (Thurs, 3:30pm)	Hargrove et al. 2013
Oct. 15	10/18 & 10/23 - Exercise 5: Mass balance models in water desalination (Jin)	Capelle et al. 2017
Oct. 22	10/23 (see above) 10/25 - Dave Cortez - Sierra Club (Austin chapter) 10/25 - ESCI2204 elevator talks (Thurs, 3:30pm)	
Oct. 29	10/30 - Hydrology revisited 11/1 - Rivers in Crisis	
Nov. 5	11/6 - Rivers in Crisis 11/8 - Rivers in Crisis	
Nov. 12	11/13 - Mark Engle - USGS 11/15 - Introduction to water quality (Jin & Lougheed)	Engle TBD? Borrok & Engle 2014; Rodriguez & Lougheed 2010
Nov. 19 (thanksgiving)	Exercise 6: Group Lab work-Data analysis (four groups)	
Nov. 26	11/27 - Diane Doser - geophysics 11/29 - Working across disciplines (Jin, Lougheed); 11/29 - ESCI 2204 posters (Thurs, 3:30pm)	Doser TBD
Dec. 3	Final presentations of Exercise 6	