

**PLAN 390 INTRODUCTION TO WATER POLICY
THE FUTURE DEPENDS ON WATER
SPRING SEMESTER 2020**

Department of City and Regional Planning
University of North Carolina at Chapel Hill
Last updated¹: January 10, 2020

Contact Information

Instructor: Ahmed Rachid El-Khattabi
Office: New East 405
Office Hours: Tues. 5-6pm or by appointment
E-mail: khattabi@live.unc.edu

Course Information

Location: Alumni Hall 207
Time: Thurs. 5:00-6:15pm
Course Web Site: Sakai site

A. DESCRIPTION

The challenges of managing water supplies are increasingly difficult due to trends in population, economic development, and changes in climate. The World Health Organization estimates that over 40% percent of the world's population is expected to live in conditions of water stress or scarcity within the next 50 years. The purpose of this course would be to introduce students from a variety of backgrounds and majors to the "need to know" challenges ensuring access to clean and safe drinking water. A key goal of this class is instill students with the need to think critically about solutions.

In this course, students will learn a variety of tangible skills. Students will learn and apply economic concepts to the water sector and learn the basics of cost-benefit analysis. Students will also learn about how water is priced and how to read their water bills. Students will learn valuable research skills that will help them meaningfully engage with government entities.

B. COURSE OBJECTIVES

This course will prepare students to address the issue of water scarcity through the following learning objectives.

- Understanding of the status quo to grasp the complexity of managing water supplies
- Understanding how trends in climate, demographics, land-use, and economic development contribute to water scarcity
- Understand the approaches that are commonly used to address challenges and the issues associated with them.

¹This document is not a covenant. Instructor reserves the right to revise at will. Any changes to course schedule and assignments will be announced in class and via email

- Appreciate the complexity of addressing water issues with multiple interests.
- Develop and learn from active learning techniques when critically analyzing case studies.
- Develop communication and collaboration skills through group activities and discussion.

C. COMMUNICATION

The best way to reach me is to talk with me after class or during my office hours. If my office hours do not fit your schedule, email me and I will work with you to find a suitable time. I will make every effort to respond to your emails on the same day I receive them but will definitely respond to all emails within 24 hours. Please do not wait until the last minute to contact me about assignments. *Please include PLAN 390 in email subject line.*

D. COURSE REQUIREMENTS

There are four course requirements:

First, each student will present on a topic related to the question of the day. A sign-up list is posted on the Sakai course page, students will sign up for a topic on a first-come first served basis. The presentation should last around 10 minutes with a discussion to follow. In general,² presentations should include:

- Clear articulation of the problem and policy relevance
- Identification of a specific case/context
- How was problem addressed?
- Advantages and disadvantages of the approach

PowerPoint presentations should not contain more than 10-11 slides. Students presenting should also prepare 3-4 discussion questions to generate and facilitate the ensuing discussion. **I strongly encourage you to meet with me during office hours before you present.** Audience members (students not presenting) should be engaged and ask questions.

Second, students will also work on a short research paper on a topic of their interest related to water policy. This paper will be completed in 2 stages, turned in at the dates listed in the course schedule below. Only the final product will be graded. Drafts are meant to ensure that progress is being made as well as an opportunity for me to give you feedback.

Third, students will write a short memo to a policy maker on a topic of their choice. The goal of this assignment is to brief a policy maker on a critical problem and convince them that it should be their top priority.

Lastly, class participation is expected.

Evaluation of all work will be based on the 1) content, 2) critical analysis and synthesis, 3) organization, and 4) communication (clarity of writing or speaking).

There will be an in-class exam on April 28th at 7pm (location and format tbd). I will inform you of the format and range of material you will be responsible for at least two weeks in advance of the exam.

²This will vary depending on the specific topic

Honor Code

As stated in UNC's honor Code: "It shall be the responsibility of every student at The University of North Carolina at Chapel Hill to obey and to support the enforcement of the honor code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student or academic personnel acting in an official capacity."

All assignments must be completed through your own individual effort unless otherwise instructed. In order to uphold the Honor Code in your written assignments, you must properly cite all data, ideas, and information that are not your own. Academic misconduct is not tolerated.

For additional information on the honor code, please visit <http://honor.unc.edu>. For information about citations and how to avoid plagiarizing, please visit UNC Writing Center's website <http://www.unc.edu/depts/wcweb/handouts/plagiarism.html>.

Reading Material

All readings will be available through Sakai or the UNC Library electronic reserves system. Readings are expected to be done BEFORE the class session for which they are listed.

Grading

- (1) Participation and Attendance-10%
- (2) Presentation-25%
- (3) Paper-25%
- (4) Memo-15%
- (5) Final Exam-25%

Students will be graded based on the performance scale below:

A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	0-59

Course Policies

- Attendance is required. Plan to arrive to class on time and to stay until the instructor dismisses you. Students are permitted to miss class for EXCUSABLE absences only.³ Please contact me as soon as possible should an excusable absence arise. Unexcused absences will be reflected in the participation grade.
- It is imperative for your own learning that you do the assigned readings before the session for which they are listed. Failing to do the readings leads to poor discussions.
- Cell phones should be turned off or set to silent and kept in your bags or otherwise hidden from view. Laptops and tablets may be used for note taking, referencing readings only, or for in class exercises (if applicable)
- Students should notify the instructor in advance should accommodations for disabilities or scheduling emergencies.

³For details, please see http://www.unc.edu/ugradbulletin/procedures1.html#class_attendance.

E. SUMMARY SCHEDULE OF SESSIONS AND TOPICS

Class Schedule (subject to adjustments)

Week	Dates	Topic	Assignment
1	Jan 9	Course overview	
2	Jan 16	Where does your water come from?†	
3	Jan 23	What challenges do water utilities face?†	
4	Jan 30	Why is our water infrastructure in poor shape?†	
5	Feb 6	How is infrastructure financed?†	
6	Feb 13	Is my water contaminated?*†	
7	Feb 20	How do we manage water supplies?†	
8	Feb 27	How do we manage demand for water?†	
9	Mar 5	Is water a human right?†	Memo due
10	Mar 12	<i>No Class - Spring Break</i>	
11	Mar 19	Will there be wars over water?†	Chinatown (1974)
12	Mar 26	In-class simulation	Paper (draft) due
13	Apr 2	Do state governments play a role in drought management?†	
14	Apr 16	How can technology help?†	
15	Apr 23	Looking ahead: How do we plan for scarcity?†	Paper (final) due
16	Apr 28	<i>FINAL EXAM 7-10pm</i>	

* *Guest Lecture*

† *Presentation*

Topics to be covered

An outline of course, including the the topics that will be covered, is as follows:

- **Week 1:** *Overview of issues facing water sector*
- **Week 2:** *Where does your water come from?*
 - Hydrological cycle
 - Sources of water
 - Introduction to property rights/legal doctrines

Suggested presentation topics: Where does bottled water come from?

- **Week 3:** *How do water utilities work?*
 - Drinking water
 - Waste-water
 - Ownership structure and the privatization debate

Suggested presentation topics: Example of privatizing a water utility (e.g. Cochabamba, Bolivia)

- **Week 4:** *Why is our water infrastructure in poor shape?*
 - State of infrastructure
 - Climate change and extreme events
 - Finances and debt
 - Rural water utilities

Suggested presentation topics: Suspension of Eureka, NC's town charter due to debt

- **Week 5:** *How is infrastructure financed?*

- Trends in funding availability
- State revolving funds
- Water revenues

Suggested presentation topic: America's Water Infrastructure Act of 2018

- **Week 6:** *Is my water contaminated?*

- Emergence of polyfluoroalkyl substances (PFAS)
- Water and health equity

Suggested presentation topics: Lead in pipes (e.g. Flint water crisis), potential consequences of NEPA repeal, Legionnaires' disease outbreak

- **Week 7:** *How do we manage water supplies?*

- Dams and storage
- Desalination
- Water reuse

Suggested presentation topic: Rain water harvesting, recycling waste-water to drinking water

- **Week 8:** *How do we manage demand for water?*

- Trends in water usage
- Overview of demand side management strategies
- Water pricing
 - * Water tariffs
 - * How to read your water bill

Suggested presentation topic: Protests against price increases, water rationing during drought

- **Week 11:** *Is water a human right?*

- Affordability
- Sustainable development/Inter-generational justice

Suggested presentation topic: Water shutoffs in Detroit

- **Week 10:** *Spring Break - No class*

- **Week 11:** *Do state governments play a role in drought management?*

- State mandates for water conservation

Suggested presentation topic: Legal issues associated with water conservation mandates

- **Week 12:** *Will there be wars over water?*

- Water as a shared resource
- Introduction to market failures

Watch film: Chinatown (1974)

Suggested presentation topic: Owens Valley (CA), Tri-state (AL, GA, FL) water wars, Grand Ethiopian Renaissance Dam (Egypt, Ethiopia)

- **Week 13:** *In-class simulation*

Scenario TBD.

- **Week 14:** *How can technology help?*
 - Potential for technology to help with demand, supply, and infrastructure management
 - Smart cities
 - Trends in water technologies

Suggested presentation topic: Showcase a revolutionary technology

- **Week 15:** *Looking ahead: How do we plan for scarcity?*
 - land use plans and smart growth
 - Water supply plans

Suggested presentation topic: Planning in the context of drought or sprawl