

WATER RESOURCES MANAGEMENT

CONTACTING THE INSTRUCTOR:

- 1) Available after class, 3:00-3:45 PM Fridays (either at class site or in WSQ 115)
- 2) Available by phone between 8:30 AM and 5 PM (not guaranteed to be immediately available, allow 24 hours for response)
- 3) Email questions (a real time saver for small points of confusion). Leave your phone number and times to call in case that will provide a better response than email.
- 4) Make appointment for different time during the school week (via email or phone)

Note: Emails submitted after 5 PM may not be responded to until the following day. Therefore if emailing the instructor the night before class, do not expect to receive a response prior to the next class.

COURSE DESCRIPTION AND OBJECTIVES:

Water resources management is a multi-disciplinary field encompassing:

- water supply reliability
- urban vs. agricultural water supply
- urban and regional planning
- water quality for public health and the environment
- watershed management
- environmental restoration
- flood control
- wastewater treatment
- energy (and thus carbon emission) impacts of human engineered water systems
- anticipating and responding to climate change

This course will give you exposure to both quantitative and qualitative aspects of the topic using a variety of teaching techniques including lectures, group discussion, problem sets, guest lectures, and a field trip. We will look at case studies within California, the US and internationally. We will also evaluate how climate change has already impacted water resources in some regions of the world and how it is expected to change California water management.

Over the semester, you will:

- gain a working familiarity of major aspects of water resources management (e.g., hydrology, water pollution, irrigation);
- hear from professionals working in the field about “on the ground” issues;
- have an opportunity to explore a water resources management topic of personal interest; and
- practice communicating (both orally and in writing) your findings to others.

Generally, we will meet once weekly for lectures, in-class exercises, case studies, and discussion. Outside of class homework assignments will include completing course readings and being prepared to discuss course materials, conducting web-based research, writing short essays, leading class discussions, completing problem sets, and working in small groups.

REQUIRED COURSE MATERIALS: Cech, Thomas V. 2005. *Principles of Water Resources: History, Development, Management and Policy*, 2nd ed. John Wiley and Sons, Inc.:Hoboken, NJ.

Available at the Spartan Bookstore.

CAMPUS POLICY IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT:

If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with DRC to establish a record of their disability.

SCHEDULE

This outline is subject to change. Attend class regularly to stay current. Readings for class meetings are to be completed **before** you come to class. For example, before class #2, you should have read Chapters 1 and 2 of the course text.

Class	Date	Lecture Content	Assignments (due BEFORE class)
1	1/25/08	Course overview and student survey.	Read: none
2	2/1/08	Setting the Stage; Hydrologic Cycle	Read: Chapters 1 (Historical Perspectives of Water Use and Development) AND 2 (The Hydrologic Cycle, Climate, and Weather) <i>Assignment #1 assigned</i>
3	2/8/08	Surface Water Hydrology <i>Case Study:</i> Mercury pollution in California	Read: Chapter 3 (Surface Water Hydrology) <i>Assignment #2 assigned</i>
4	2/15/08	Groundwater Hydrology <i>Case Study:</i> Salty groundwater in San Benito County – Sources and Solutions	Read: Chapter 4 (Groundwater Hydrology) <i>Assignment #1 due.</i>
5	2/22/08	Quiz 1 – Water Cycle, Weather, Climate, Surface and Groundwater Water Quality Pollution and Management <i>Presentation:</i> Emerging Contaminants in Consumer Products	Read: Chapter 5 (Water Quality) <i>Assignment #3 assigned (Self-Guided Bay Model Field Trip)</i>
6	2/29/08	Water and Wastewater Treatment – past, present, future <i>Case Study:</i> Recycled water program management in Sonoma and Monterey	Read: Chapter 11 (Drinking Water and Wastewater Treatment) <i>Assignment #2 due.</i>
7	3/7/08	Municipal Water Development and Irrigation <i>Case study:</i> Ogallala groundwater basin	Read: Ch 6 (Muni Water Development and Irrigation)

Class	Date	Lecture Content	Assignments (due BEFORE class)
8	3/14/08	<p>Quiz 2 – Water Quality Issues, Protection and Treatment, and Water Development</p> <p><i>Lecture:</i> Federal, State and Local Agencies</p> <p><i>Case study:</i> CVP vs. SWP – history vs. current allocations</p>	Read: Chapters 9 (Federal Water Agencies) AND 10 (Local, Regional, State, and Multi-State Water Management Agencies)
9	3/21/08	<p>Dams – Purposes, Types, and Impacts</p> <p><i>Presentation:</i> Watershed Approach to Flood Protection</p>	Read: Ch 7 (Dams) <i>Assignment #4 assigned</i>
	3/28/08	SPRING BREAK	
10	4/4/08	<p>Habitat protection</p> <p>Wetlands and Bay Ecology</p> <p>CEQA relation to water management</p> <p><i>Case study:</i> Coyote Valley development</p>	Read: Chapter 12 (Water, Fish and Wildlife) <i>Assignment #3 due (Bay Model).</i> <i>Assignment #5 assigned</i>
11	4/11/08	<i>Presentation and discussion:</i> Climate Change impact to CA water resources (courtesy of DWR)	Read: out-of-book reading to be provided by instructor <i>Assignment #4 due</i>
12	4/18/08	<p>Quiz 3 – Dams, floods, watershed, habitat, wetlands, and climate change</p> <p>IRWMP case studies: North Coast, Los Angeles, Monterey and SF Bay Area</p>	
13	4/25/08	<p>Water Economics</p> <p><i>Case Study:</i> MWD to purchase agri water (November 2007 SJMN)</p> <p>Costs of water in CA</p> <p>Costs of water in Middle East</p>	Read: Chapter 13 (Economics of Water)
14	5/2/08	<p>Water Conflicts – Within USA and Internationally</p> <p><i>Case studies:</i> Colorado River; Georgia / Southeast USA; Middle East</p>	Chapters 14 (Water Use Conflicts) <i>Assignment #5 due</i>
15	5/9/08	<p>Future Issues</p> <p>Review for Final Exam</p>	Chapter 15 (Emerging Water Issues)
		Final exam: Thursday, May 15th, 9:45 AM – 12:00 noon	