

Course Syllabus

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Schedule: T, H 2:00-3:20, LS (Life Sciences Building) 102

Course Description: Interdisciplinary case study analysis of historical and emerging water issues and water engineering projects in the western United States. Case studies cover a range of topics such as water conservation, water supply, water-energy nexus, climate change, water and ecology, and water and society as related to specific water problems or water engineering projects in the western United States. Within the context of these case studies students learn the fundamental and advanced concepts related to water resources planning and management, water law, water resources engineering, water management modeling, and engineering and environmental ethics.

Course Goal and Learning Objectives: The American West can be understood best by seeing *aridity* as its defining physical feature; this is because one can most fruitfully describe the culture of the west -- its past, its present, and its future -- as an hydraulic society. The genesis of this society was a utopian vision of the transformation of the west into a new Eden, a transformation made possible through technology. Presently the inhabitants of the West are being forced to re-examine -- re-consummate -- their relationship, both to the water and to the technology used to control it. Through an examination of the cultural context in which the west was originally settled and how it has changed to bring us where we are today, we will try to understand where this new relationship might be headed. In this spirit, the goal of this course is to develop the next generation of professionals responsible for leading the planning, designing, managing, and operating water resources systems and facilitating the interaction of those systems with society in the west. This semester we will be particularly focused on Water Management for a Sustainable Wasatch Front Future. After completing this course, students will be able to:

1. Explain benefits and impacts of water engineering projects to non-technical people
2. Navigate water rights administration process
3. Describe water planning, management, administration, and infrastructure elements
4. Analyze water management decisions using computer modeling tools
5. Assess implications of water management solutions in an economic, environmental, and societal context and judge tradeoffs among the three
6. Articulate and recommend a vision for sustainable water systems and effectively communicate with others to plan and design multi-objective water resources solutions

HYDROTOPIA

Spring Semester 2013
CVEEN 6480
PHIL 5191/6191

University of Utah
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Dept. of Philosophy

Grading:

25% Attendance, Participation, and Completion of In-Class Assignments

25% Position Papers (3)

50% Project (35% Final Deliverable, 15% Final Presentation)

Attendance and Participation:

Attendance and participation is critical, and excessive absences will affect your final grade.

After your second unexcused absence, your final grade will be reduced by half a letter grade for each class period that you miss (for example, a “B” will become a “B-” after your third unexcused absence and a C+ after your fourth). An excused absence will be granted only for legitimate approved reason and must be documented accordingly with an email request.

Course Schedule:

Class	Date	Topic	Assignment Due
1	1/8	Course Overview	Data Sheet
2	1/10	Wasatch Front Water – History and Present State	---
3	1/15	Water Management for a Sustainable Wasatch Front Future	---
4	1/17	Water Law: Prior Appropriation Overview	---
5	1/22	Water Law: Utah Water Rights & Case Studies for Wasatch Front (Guest: Kent Jones, Utah State Engineer)	---
6	1/24	Wasatch Front Water Management Institutions (Guest: Richard Bay, CEO/General Manager, Jordan Valley Water Conservancy District)	---
7	1/29	Water Planning For Wasatch Front Future	---
8	1/31	Position Paper 1 Discussion (Topic: Bear River Pipeline Project) (Guest: Zach Frankel, Executive Director, Utah Rivers Council)	Position Paper 1
9	2/5	Water Infrastructure	---
10	2/7	Cost of Water	---
11	2/12	Financing Urban Water Projects	---
12	2/14	Water Management Charette - U. Water Neutrality	---
13	2/19	Water Management Charette - U. Water Neutrality	Project Scoping Report
14	2/21	Ecosystems & Environment Impacts (Guest: Bob Adler, U of U. Law School)	---
15	2/26	Wasatch Front Water Quality and Habitat	---
16	2/28	Stream Restoration	---
17	3/5	Recreating Nature in Cities - Landscapes	---
18	3/7	Position Paper 2 (Topic TDB) Discussion	Position Paper 2
---	3/12	Spring Break – No Class	---
---	3/14	Spring Break – No Class	---
19	3/19	Project Progress Report	Project Progress

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			Report
20	3/21	Water and Sustainable Urban Development – Opportunities (Guest: Nan Ellin, Chair of City and Metropolitan Planning, U. of Utah)	---
21	3/26	Water Conservation (Guest, Eric Klotz, Chief, Water Conservation and Education, Utah Division of Water Resources)	---
22	3/28	Green Infrastructure (Stormwater & Water Supply)	---
23	4/2	Wastewater Management and Greywater	---
24	4/4	Water Reuse and Desal	---
25	4/9	Water-Energy Nexus	----
26	4/11	Aging Water Infrastructure & Economic Realities	---
27	4/16	Climate and Water Supply (Guest: Jeff Niermeyer, Director, Salt Lake City Public Utilities)	---
28	4/18	Position Paper 3 (Student's Recommendation) Discussion	Position Paper 3
29	4/23	Course Closure	---
	5/1	Project Final Presentations, 1:00 – 3:00	Project Report

Required Reading/Viewing Assignments – Read Assignments For Class Session Listed
(All readings will be posted on Canvas; please follow Canvas for updates):

Class 1:

- *Bear River Project -- Utah's Last Water Hole*
- *Jordan River Restoration Project*

Class 2:

- Barbanell, E. *Taking Scarcity Seriously*
- Angkor National Geographic article
- Hooten, L. *Metropolitan SLC Water History and Master Plan for 21st Century*

Class 3:

- Goonetilleke and Yigitcanlar (2010)
- Mays 2007, Chapters 1 & 2.

Class 4:

- Barbanell, E. *Water Rights Doctrines*
- Debuys, *Problem of Western Water*
- Cech, *Principles of Water Resources, Chapter 8– Water Allocation Law* (Prior Appropriation Sections, but all recommended)

Class 5:

- Water Rights in Utah
- Fort, *Water Policy of the West*
- Henetz, *Whose Water Is It*

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Class 6:

- Grigg, *Chapter 8 – Water Industry Structure*
- Cech, *Chapter 10 – Local, Regional, State, and Multistate Water Management Agencies*

Class 7:

- Grigg, *Chapter 4 – Planning and Decision-Making Processes*

Classes 9-27: Reading to Be Determined (See Next Week's Update and Follow Canvas)