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GEO 425: Water Resources Management in the US
 Winter 2013, TR 0830 – 0950, Wilkinson 207

“No policy without a calamity” – Dutch saying

Instructor: Michael E. Campana, Wilkinson Hall 202B, aquadoc@oregonstate.edu or
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Office Hours: TR - 10:00 – 11:30 am; W 9:30 – 11 am; **or by appointment**, Wilkinson Hall 202B

Phone: 541-602-4085 (cell) 541 -737-2413 (office);

OSU WWW: <http://www.geo.oregonstate.edu/people/faculty/campanam.htm>

WaterWired blog: <http://www.waterwired.org> (read daily posts)

WaterWired Twitter: <http://twitter.com/waterwired> (follow if you are on Twitter)

Mailbox: Room 104 CEOAS Admin. Bldg (across 26th Street from Wilkinson, next to parking lot)

Textbooks: Robert Glennon, *Unquenchable* (abbreviation: U) (required)

Juliet Christian-Smith & Peter Gleick, *A 21st Century US Water Policy* (WP) (required)

B. Bateman & R. Rancier (eds.) *Case Studies in Integrated Water Resources*

Management: From Local Stewardship to National Vision (CS; PDF on Bb)

Course materials online: For announcements, handouts, revised syllabi, homework assignments, grades, Power Point lectures, go to **Blackboard** (Bb) at <http://my.oregonstate.edu>. Important notices regarding assignments, etc. will also be announced via e-mail, so it is essential that you check your e-mail regularly. All email will go to your ONID account. If you use another email platform, make sure your ONID email gets forwarded to it.

Course coverage: GEO 425 is an upper-division course in water resources management (WRM) in the USA requiring nine credits of upper-division geography courses as prerequisites. The course focuses on WRM in the USA but what you learn here will have applicability to other areas. We will introduce and study Integrated Water Resources Management (IWRM), a concept that is being promoted worldwide by the Global Water Partnership (www.gwpforum.org), the World Bank, USAID, the EU, and other organizations. Among other things, we will examine the roles of government (federal, state, tribal, and local) and nongovernmental entities in WRM. We will look at the various laws, cultures, and policies that influence WRM and how the future will dictate changes in the way we manage water. Case studies will be used to illustrate various aspects of USA WRM.

The syllabus may look like I will simply follow the books, but that’s not true. The books’ material will serve as a basis for *discussion*. Actual case studies/histories will be interspersed throughout the course. Glennon’s book contains a wealth of illustrative examples as does the Bateman & Rancier report. Glennon’s book is very good because he does not just tell ‘war stories’ about water problems but posits solutions as well. The Christian-Smith & Gleick book discusses US

water policy (or lack thereof) and provides a platform for reform. As you might surmise, water policy has a lot to do with water management.

Towards the end of the class, once you have assimilated a fair chunk of the material, we will engage in some exercises using a modeling tool(s). Example: the Palouse Basin Aquifer Committee (WA & ID) (<http://www.webs.uidaho.edu/pbac/>) has a model that they use as a visioning tool (http://forio.com/simulation/ns/allysonbeall/palouse_basin_model/). We will experiment with this model or one similar.

Course Objectives

- 1) Provide an overview of water management, especially as it is practiced in the US
- 2) Identify and explore the various facets of water management
- 3) Illustrate specific water management approaches through case histories
- 4) Expose students to the use and interpretation of a simple water resources model
- 5) Equip students with the tools to become water resource 'crap detectors'

Learner Outcomes

- 1) Acquire specialized language and concepts relevant to water resources management
- 2) Develop appreciation for complexities and disciplines related to water resources decision-making and policy-making
- 3) Demonstrate ability to obtain, analyze, synthesize, and critique information relevant to water resources from a range of external sources
- 4) Communicate verbally, and through writing, key concepts, including advanced concepts, relevant to water resources management
- 5) Develop ethical and moral guidelines for personal approach to water resource use and allocation issues

Office Hours: I endeavor to keep my office hours as shown above. If for some reason I cannot keep them I will let you know. ***You are always welcome to make an appointment to see me, or, if my door's open, drop in to see if I am available.***

Grading Elements:

Quizzes: 3 @50 = 150 points

Assignments: 3 @ 50 = 150 points

Final Exam: 150 points

Class Participation: 50 points

Total = 500 points

Extra Credit: 40 points

Quizzes: In-class, closed-book test (c. 20-30 minutes) designed to assess your command of the readings and class material. You will have them on: 24 January; 12 February; and 7 March. They will not be cumulative in terms of coverage; each quiz will cover only the material since the previous quiz.

Assignments: Self-explanatory. Problems, essay questions, etc.

Final Exam: Take-home exam.

Class Participation: 10% of your grade will be my numerical evaluation of your active participation in, and contributions to, the class. Are you prepared? Do you contribute to class discussion? You will not get points simply by attending class.

Extra Credit: You can earn up to 40 points (out of 500) by attending a lecture/film on/off campus *related to the class material* and writing a 200-word summary of the lecture/film and what you ‘took away’ from it. You cannot use another class to satisfy this requirement, but if a class has a guest lecturer, that is fine. Check the OSU online calendar to see who is talking, when, and where. I will also provide some assistance in identifying appropriate events.

Grades: The percentages used for determining the final grades at the end of the term are: A = 100—94, A- = 93—90; B+ = 89—87, B = 86—84, B- = 83—80; C+ = 79—77, C = 76—74; C- = 73—70; D+ = 67-69; D = 64-67; D- = 60-63; F = < 60.

Students requiring special accommodations: Accommodations are collaborative efforts among students, their instructor, and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

Rules of civility: The College of Earth, Ocean, and Atmospheric Sciences follows the university rules on civility and honesty. These can be found at <http://oregonstate.edu/instruct/cssa556/CIVHON556.htm>. Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.

Etiquette: My commitment to you is to return assignments promptly, and be on time, organized, ready for class. I ask the same of you, and out of courtesy to your colleagues that you not eat, talk, read, or walk around during class. There will be no cell/smart phone use (including text messaging) during class. Please set phones on vibrate. Use of computers (online or not) is allowable as long as it does not prove disruptive to your classmates or me. You can address me by my full first name, or by calling me ‘Professor’, ‘Doctor’, or Prof. or Dr. Campana. This is not Europe, so you do not have to use Prof. Dr. Campana.

SYLLABUS

(NOTE: WEEKLY READINGS WILL BE DONE *PRIOR* TO THE FIRST CLASS MEETING OF THAT WEEK)

WP = *WATER POLICY*; U = *UNQUENCHABLE*; CS = *CASE STUDIES IN IWRM*

WEEK 1 READINGS: WP: INTRODUCTION & CHAPTER 1; U: INTRODUCTION AND CHAPTER 1; CS: TO PAGE 25

T 1/8 Course and student/faculty introductions; structure of course; expectations; texts

R 1/10 Review of hydrology; introduction to IWRM

WEEK 2 WP: CHAPTER 2; U: CHAPTERS 2-3

T 1/15 Water of the US – availability and use

R 1/17 Legal and institutional basis for US water resources management

WEEK 3 WP: CHAPTERS 3 & 4; U: CHAPTERS 4-5

T 1/22 Elements of water management

R 1/24 Environmental justice and water; tribal water issues **Quiz 1**

WEEK 4 WP: CHAPTERS 5 & 6; U: CHAPTERS 6-7

T 1/29 Ecosystems and water resources; water quality

R 1/31 Sustainability and water resources; resiliency

WEEK 5 WP: CHAPTER 7; U: CHAPTERS 8-9

T 2/5 Western Water: The CD25 Project

R 2/7 Conflict management; Mississippi v. Memphis

WEEK 6 WP: CHAPTER 8; U: CHAPTERS 10 THROUGH 12: CS PAGES 11-59

T 2/12 Quiz 2

R 2/14 IWRM Case Studies; Lessons learned

WEEK 7 WP: CHAPTERS 9 & 10; U: CHAPTERS 13 THROUGH 15

T 2/19 Collaborative modeling/governance: Palouse Basin

R 2/21 Palouse Basin; Water resources governance: Klamath Basin

WEEK 8 U: CHAPTERS 16 THROUGH 18

T 2/26 More collaborative models

R 2/28 Water resources management case studies: Albuquerque, NM; California Bay-Delta

WEEK 9 WP: PAGES 263-270; U: CHAPTERS 19 & 20

T 3/5 Water management case studies: Florida's WMDs; Delaware River Basin Commission

R 3/7 Water management case studies: Great Lakes **Quiz 3**

WEEK 10 WP: CHAPTER 12; U: CONCLUSION & EPILOGUE

T 3/12 Water ethics

R 3/14 *Quo vadis*: The future of US water policy and management

WEEK 11 Final Exam will be a take-home exam, due on 21 March 2013

"The road to help is paved with good intentions." – Tracy Baker

"...essentially, all models are wrong, but some are useful..." – George E.P. Box