COURSE INFORMATION:
Water and Society
11:374:115
Spring 2019, M&W 3:55-5:15PM, RAB 208

CONTACT INFORMATION:
Instructor: Daniel J. Van Abs, PhD, PP/AICP, Associate Professor, Dept of Human Ecology
Office Location: Cook Office Building, 55 Dudley Road, Room 226
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COURSE MATERIALS:
Course materials are provided through the Sakai course site.

COURSE DESCRIPTION:
This course introduces students to fundamentals of water resources issues world-wide, and how they affect the development, design, evolution and sustainability of societies and economic viability. Included will be discussion of case examples where conflicts over water allocations, drought limitations, water quality problems and catastrophic floods are damaging societies and international relations. Students will be exposed to and discuss current and developing methods for reducing such problems in support of more sustainable societies.

LEARNING OBJECTIVES:
Successful students will be able to describe, distinguish and compare how water issues mold societies in areas that are dry and humid, urban and agrarian, coastal and non-coastal, riparian and inland, including effects on the environment, economies and social equity. Students will be able to list and distinguish applicability of the basic tools for assessing water available, water quality, water demand and wastewater generation. They also will be able to identify and compare the major types of policies and organizations used to mediate water issues within and between nations. Finally, they will be able to discuss generally how water issues are related to other types of environmental issues such as food production, manufacturing and public health.

- **SEBS/SAS 21st Century Learning Objectives**:
  b. Analyze a contemporary global issue from a multidisciplinary perspective.
  c. Analyze the relationship that science and technology have to a contemporary social issue.
- **SEBS/SAS Historical Analysis Learning Objectives:**
  h. Understand the bases and development of human and societal endeavors across time and place.
  k. Explain the development of some aspect of a society or culture over time, including the history of ideas or history of science.
- **SEBS Governance and Regulation Analysis Objectives:**
  5. Use theory and evidence from the social sciences to analyze the decisions made by organizations that affect resource use, the environment, and health; including the organizations involved, the influences on those decisions, and the intended and unintended consequences that are likely to result.

ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT:

Class participation is critical to the learning process. Participation constitutes 25% of the grade (25 points). Attendance is a large part (20 points) of the participation score. A student may have up to two unexcused absences without loss of participation credit, but **every additional unexcused absence triggers a deduction of 2 points**. Lateness also counts. In addition, each student will present a short summary of one class reading, which counts for 5 points.

There will be short topical writing assignments for each topic addressed in the class, which will require the student to understand the relevant lectures, readings and additional research, and to evaluate an issue or question on the basis of that information. The short assignments constitute the remaining 75% (75 points) of the grade. **There are no quizzes or exams**.

OTHER INFORMATION:

Students will be responsible for adhering to the academic integrity policies found at http://academicintegrity.rutgers.edu.

It is important that students have the tools to succeed in this course. Please see the instructor as soon as possible with any difficulties or questions regarding the course materials. In addition, the Office of Student Affairs is available at http://studentaffairs.rutgers.edu for any other needs or concerns.

THE RULES

Adapted from http://academicintegrity.rutgers.edu/integrity.shtml

1. NO PLAGIARISM. Plagiarism is essentially theft of intellectual property – the work of others. Give credit where credit is due! Doing so reflects well on them and on you. Students can be failed or referred to the University for discipline if intentional plagiarism is evident.

2. NO CHEATING – it destroys the learning experience, demeans and harms you now, and is an exceptionally bad habit for the working world.

3. LATE ASSIGNMENTS WILL LOSE A GRADE STEP FOR EACH CALENDAR DAY LATE. For example, if your paper is an A- level product, then it will be marked as a B+ for a day late, a B for 2 days late, etc. If you must miss a deadline due to bona fide illness or emergency, notify me via email on or before the due date if at all possible, or as soon after as your situation permits. Proof may be required. However, I do not need to know (and really shouldn't know) the details of a medical condition or similar personal or family issue.

4. PARTICIPATION COUNTS. Only two unexcused absences from class will be accepted without loss of participation credit. Otherwise, you must provide a bona fide excuse for absences – contact me by email, provide notification at a prior class, provide a note from a medical office, etc. Proof may be required. Recognize that this is standard business practice, so get used to it.

5. THERE IS NO EXTRA CREDIT OR MAKE-UP ASSIGNMENTS. No additional assignments or revised work for re-grading will be accepted to offset missing assignments or poor grades. Instead, focus on quality work the first time and make sure assignments are posted on time. I am also willing to answer questions before any work assignment is due, in or after class, in my office, or by email. Make sure you ask your questions in time to allow for answers.

6. IF YOU CONTEST A GRADE, you must do it in writing to me. Write your argument presenting evidence supporting a grade change and submit it by email.

7. POSTING TO SAKAI. Work must be posted as readable text. Assignments will be loaded directly to a Sakai text box. If an assignment is required as attachments, it must be in MSWord (or a file format directly compatible with MSWord so that I can edit in that format). Posting work as Adobe pdf or any other pdf document or providing a link to Google Docs or other external source is not acceptable. Please note: correct posting to Sakai is the student's responsibility, including verification that the posting actually worked.

DO NOT ASSUME THAT A SAKAI POSTING WORKED – ALWAYS VERIFY.

Will Rogers - *People's minds are changed through observation and not through argument*.

Albert Einstein - *Education is what remains after one has forgotten what one has learned in school.*

Course Schedule and Readings

The course schedule follows; modifications may occur as necessary during the semester. All readings or links to them are posted on Sakai.

Topic	Dates	Readings
Water: Cycles and Sheds	Jan 23, 28	• Mooney, Chris. 2015.03.23. Global warming is now slowing down the circulation of the oceans — with potentially dire consequences. Washington Post. • USGS. 2000. A Hydrologic Primer for New Jersey Watershed Management (esp. pp. 10-33) • WQED. What Is Groundwater? https://www.youtube.com/watch?v=oNWAerr_xEE
Water for Life	Jan 30, Feb 4	1. Pelley. 2014.03.26. Well in Tanzania Has Ripple Effect. WEF Highlights. 2. Rosenberg, Tina. 2010. "The Burden of Thirst." National Geographic. 3. World Health Organization. 2003. Domestic Water Quantity, Service Level and Health (esp. Executive Summary and Sections 1 through 3)
Water and Transportation	Feb 6	4. Economist. 2016.07.16. An international tribunal delivers a blow to China's claims in the South China Sea 5. Kramer, Andrew. 2011.10.17. "Warming Revives Dream of Sea Route in Russian Arctic." NY Times. 6. Panama Canal-A brief history. https://www.youtube.com/watch?v=hitvIsDnxeg
Water and Urban Areas	Feb 11, 13	7. 24/7 Wall St. 2010.10.29. "The Ten Biggest American Cities That Are Running Out of Water." 8. Economist. 2014.12.20. São Paulos water crisis: Reservoir hogs 9. Hordon, Robert. 2011. "Ancient Water Systems and Hydraulic Devices" in AWRA Impact Nov2011
Wastewater	Feb 18, 20	10. Benidickson, Jamie. 2007. The Culture of Flushing: A Social and Legal History of Sewage. (Conclusion). University of British Columbia Press. 11. United Nations. Sustainable Development Goal 6: Clean Water and Sanitation. https://www.un.org/sustainabledevelopment/water-and-sanitation/
Water and Illnesses	Feb 25, 27	12. Economist. 2015.02.28. Bottled water in China: Pollution fears are driving the Chinese towards expensive branded waters. 13. Ferris, Sarah and Peter Sullivan. 2016.04.24. Clean water crisis threatens US. The Hill. 14. Gorney, Cynthia. 2016. This May be the Deadliest Creature on Earth. National Geographic. 15. World Health Organization. 2007. Combating waterborne disease at the household level.

Topic	Dates	Readings
Wetlands and Estuaries	March 4, 6	16. Economist. 2016.04.30. Vietnam's drying delta 17. USEPA. Basic Information about Estuaries. Web site available at: https://www.epa.gov/nep/basic-information-about-estuaries#whatis. Read the material: What is an Estuary?; Why are Estuaries Important? (including the material at the + signs); How are Estuaries Threatened? 18. USEPA. America's Wetlands: Our Vital Link Between Land and Water. Also see related material at: http://water.epa.gov/type/wetlands/toc.cfm
Water Pollution and the Environment	March 11, 13	19. Gough, Neil. 2013.09.04. Pollutants from Plant Killed Fish in China. The New York Times. 20. World Ocean Review. 2010. Read Chapter 4: Last stop: The ocean – polluting the seas. Maribus. (Class presentation should focus on the first section, "Over-fertilization of the seas.") 21. Pictet Perspectives 2017.05.16 In Conversation with Boyan Slat
Water and Agriculture	March 25, 27	22. Food and Agriculture Organization. 2002. Crops and Drops: Making the Best Use of Water for Agriculture. 23. McMillion, Scott. 2012. Watered Down: Can the mighty Colorado River reach the sea? Nature Conservancy Magazine 2012 Issue 1. 24. Nature Conservancy. Accessed 2018.05.02. The Weight of Water: Meet the women who are carrying Kenya's water from trees to taps. 25. Sustainable Agriculture Research and Education. (n.d.). What is Sustainable Agriculture?
Hydro and Power	April 1, 3	26. Barringer, Felicity. 2015.04.22. Troubling Interdependency of Water and Power 27. Economist. 2012.07.26. Mekong River: Lies, Dams and Statistics 28. Maupin, et al., 2014, Estimated use of water in the United States in 2010. USGS. Read "Thermoelectric Power" (pp. 40-43) 29. Orcutt, Mike. 2011. "Water Power." MIT Technology Review.
Water Scarcity	April 8, 10	30. Economist. 2014.09.27. Water consumption: A canal too far: The world's biggest water-diversion project will do little to alleviate water scarcity 31. NASA, 2015. Study: Third of Big Groundwater Basins in Distress. 32. Pittman, Craig. 2012. Water War, Southern Style. Planning, August/September 2012. American Planning Association 33. Zhang, Qingfeng, et al. 2012. Drying Up: What to do about droughts in the People's Republic of China. Asian Development Bank. (Read at least the Executive Summary)

Topic	Dates	Readings
The Power of Water	April 15, 17	34. Economist. 2016.07.30. At the world's largest dam the operation is successful but the patient is dying (Three Gorges Dam, China) 35. Hallegatte Stephane, Colin Green, Robert J. Nicholls and Jan Corfee-Morl. 2013. Future flood losses in major coastal cities. Nature Climate Change. 36. Urban Land Institute. After Sandy: Advancing Strategies for Long-Term Resilience and Adaptability. Washington, DC: Urban Land Institute, 2013. (Read at least "Introduction," "Summary of Recommendations")
Water as a Weapon	April 22	37. Cunningham, Erin. 2014.10.07. Islamic State jihadists are using water as a weapon in Iraq 38. Hipel, et al. 2013. Strategic Investigations of Water Conflicts in the Middle East (Focus on Section 1). Springer Science+Business Media Dordrecht
Water and Manufacturing	April 24	39. Becker 2016.10.24 Researching water use in US manufacturing and mining 40. Maupin, et al., 2014, Estimated use of water in the United States in 2010. USGS. Read "Industrial" (pp. 34-36) 41. Schneider et al 2016.12.15 Stranded Assets: Water Stress Is Factor in Global Mining Slump
Ocean Resources	Apr 29, May 1	42. Bale, Rachael. 2016.08.29. One of the World's Biggest Fisheries Is on the Verge of Collapse: Major disputes in the South China Sea are putting critical habitat—and the food supply of millions—at risk. 43. Economist. 2017.05.27 Getting serious about overfishing 44. Howard, Brian Clark. 2014.03.19. Salmon Farming Gets Leaner and Greener. National Geographic.
Summary	May 6	None