

## **COURSE INFORMATION:**

### **Water and Society**

**11:374:115**

Spring 2017, T&TH 3:55-5:15PM, RAB 207

## **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 224

Office Hours: Tuesdays, 2:30-3:30PM; Thursdays 1-2PM; and by appointment

Phone: 848-932-9243 (email contact preferred to avoid delays in responses)

Email: vanabs@sebs.rutgers.edu

## **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 21<sup>st</sup> 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, through recitation sessions primarily but also in the lecture sessions. Participation will constitute 25% of the grade. In addition, there will be short topical writing assignments on a weekly basis, which will require the student to understand the relevant lectures and reading and to evaluate an issue or question on the basis of that information. The short assignments will constitute 75% 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 one of us 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.** 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 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 Dr. Van Abs. Write your argument presenting evidence supporting a grade change and submit it by email or in person.
7. **POSTING TO SAKAI.** Work must be posted as readable text. Most assignments will be loaded directly to a Sakai text box, but some may be acceptable only as attachments, which 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.

<b>Topic</b>	<b>Dates</b>	<b>Readings</b>
Water: Cycles and Sheds	Jan 17, 19	<ul style="list-style-type: none"> <li>• Mooney, Chris. 2015.03.23. Global warming is now slowing down the circulation of the oceans — with potentially dire consequences. Washington Post.</li> <li>• USGS. 2000. <u>A Hydrologic Primer for New Jersey Watershed Management</u> (esp. pp. 10-33)</li> </ul>
Water for Life	Jan 24, 26	<ul style="list-style-type: none"> <li>• Pelley. 2014.03.26. Well in Tanzania Has Ripple Effect. WEF Highlights.</li> <li>• Rosenberg, Tina. 2010. “The Burden of Thirst.” National Geographic.</li> <li>• World Health Organization. 2003. <u>Domestic Water Quantity, Service Level and Health</u> (esp. Executive Summary and Sections 1 through 3)</li> </ul>
Water and Transportation	Jan 31	<ul style="list-style-type: none"> <li>• Economist. 2016.07.16. An international tribunal delivers a blow to China’s claims in the South China Sea</li> <li>• Kramer, Andrew. 2011.10.17. “Warming Revives Dream of Sea Route in Russian Arctic.” NY Times.</li> <li>• Panama Canal. Public Broadcasting Service (PBS). Read the General Article “Yellow Fever and Malaria in the Canal” and “Then &amp; Now: The Panama Canal” posted in the upper right hand box: <a href="http://www.pbs.org/wgbh/americanexperience/films/panama/">http://www.pbs.org/wgbh/americanexperience/films/panama/</a></li> </ul>
Water and Urban Areas	Feb 2, 7	<ul style="list-style-type: none"> <li>• 24/7 Wall St. 2010.10.29. “The Ten Biggest American Cities That Are Running Out of Water.”</li> <li>• Economist. 2014.12.20. São Paulos water crisis: Reservoir hogs</li> <li>• Hordon, Robert. 2011. “Ancient Water Systems and Hydraulic Devices” in AWRA Impact Nov2011</li> </ul>
Wastewater	Feb 9, 14	<ul style="list-style-type: none"> <li>• Benidickson, Jamie. 2007. The Culture of Flushing: A Social and Legal History of Sewage. (Conclusion). University of British Columbia Press.</li> <li>• WHO/UNICEF. 2006. Meeting the MDG Drinking Water and Sanitation Target: The Urban and Rural Challenge of the Decade.</li> </ul>
Water and Illnesses	Feb 16, 21	<ul style="list-style-type: none"> <li>• Economist. 2015.02.28. Bottled water in China: Pollution fears are driving the Chinese towards expensive branded waters.</li> <li>• Ferris, Sarah and Peter Sullivan. 2016.04.24. Clean water crisis threatens US. The Hill.</li> <li>• Gorney, Cynthia. 2016. This May be the Deadliest Creature on Earth. National Geographic.</li> <li>• World Health Organization. 2007. Combating waterborne disease at the household level.</li> </ul>

Topic	Dates	Readings
Wetlands and Estuaries	Feb 23, 28	<ul style="list-style-type: none"> <li>• Economist. 2016.04.30. Vietnam’s drying delta</li> <li>• USEPA. About Estuaries. Web site available at: <a href="http://water.epa.gov/type/oceb/nep/">http://water.epa.gov/type/oceb/nep/</a>. Read the material under the following three links in the top left box: What is an Estuary? Why are Estuaries Important? Why Protect Estuaries?</li> <li>• USEPA. America’s Wetlands: Our Vital Link Between Land and Water. Also see related material at: <a href="http://water.epa.gov/type/wetlands/toc.cfm">http://water.epa.gov/type/wetlands/toc.cfm</a></li> </ul>
Water Pollution and the Environment	Mar 2, 7	<ul style="list-style-type: none"> <li>• Gough, Neil. 2013.09.04. Pollutants from Plant Killed Fish in China. The New York Times.</li> <li>• World Ocean Review. 2010. Read Chapter 4: Last stop: The ocean – polluting the seas. Maribus.</li> </ul>
Water and Agriculture	Mar 9, 23	<ul style="list-style-type: none"> <li>• Food and Agriculture Organization. 2002. Crops and Drops: Making the Best Use of Water for Agriculture.</li> <li>• McMillion, Scott. 2012. Watered Down: Can the mighty Colorado River reach the sea? Nature Conservancy Magazine 2012 Issue 1.</li> <li>• Sustainable Agriculture Research and Education. (n.d.). What is Sustainable Agriculture?</li> <li>• Sutter, John D. CNN. 2014.09.04. 7 ways to save the San Joaquin -- America's 'most endangered' river.</li> </ul>
TBD	Mar 21	<ul style="list-style-type: none"> <li>•</li> </ul>
Hydro and Power	Mar 28, 30	<ul style="list-style-type: none"> <li>• Barringer, Felicity. 2015.04.22. Troubling Interdependency of Water and Power</li> <li>• Economist. 2012.07.26. Mekong River: Lies, Dams and Statistics</li> <li>• Kenny, et al. 2009. Estimated Use of Water in the United States in 2005. USGS. Read “Thermoelectric Power” (pp. 38-41), “Irrigation” (pp. 23-25), “Industrial” (pp. 32-34)</li> <li>• Orcutt, Mike. 2011. “Water Power.” MIT Technology Review.</li> </ul>
Water Scarcity	April 4, 6	<ul style="list-style-type: none"> <li>• Economist. 2014.09.27. Water consumption: A canal too far: The world’s biggest water-diversion project will do little to alleviate water scarcity</li> <li>• NASA, 2015. Study: Third of Big Groundwater Basins in Distress.</li> <li>• Pittman, Craig. 2012. Water War, Southern Style. Planning, August/September 2012. American Planning Association</li> <li>• 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)</li> </ul>

WATER AND SOCIETY COURSE SYLLABUS: Spring 2017

Version: 4 January 2017

Topic	Dates	Readings
The Power of Water	April 11, 13	<ul style="list-style-type: none"> <li>• Economist. 2016.07.30. At the world’s largest dam the operation is successful but the patient is dying (Three Gorges Dam, China)</li> <li>• Hallegatte Stephane, Colin Green, Robert J. Nicholls and Jan Corfee-Morl. 2013. Future flood losses in major coastal cities. Nature Climate Change.</li> <li>• Rogue Waves 100 Foot High Finally Documented. <a href="http://www.youtube.com/watch?v=sCxr_XzyGO8">www.youtube.com/watch?v=sCxr_XzyGO8</a></li> <li>• Urban Land Institute. After Sandy: Advancing Strategies for Long-Term Resilience and Adaptability. Washington, DC: Urban Land Institute, 2013.</li> </ul>
Water as a Weapon	April 18	<ul style="list-style-type: none"> <li>• Cunningham, Erin. 2014.10.07. Islamic State jihadists are using water as a weapon in Iraq</li> <li>• Hipel, et al. 2013. Strategic Investigations of Water Conflicts in the Middle East (Sec. 1). Springer Science+Business Media Dordrecht</li> </ul>
Ocean Resources	April 20, 25	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Economist. 2012.05.26. Plenty more fish in the sea: Sensible policies are working.</li> <li>• Howard, Brian Clark. 2014.03.19. Salmon Farming Gets Leaner and Greener. National Geographic.</li> </ul>
Summary	April 27	None