

**GEOG 71300, Rural Water Supply in the Developing Regions**  
**Spring 2017**  
**Monday and Thursday 14:45 to 16:00**  
**HN 1022**

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**Office hours**

Monday from 4:30 pm to 6:00 pm  
Thursday from 4:30pm to 6:00 pm  
Or by Appointment

**No textbook.** There will be hand out notes

**Goals/ objectives and expected student outcome:**

The main goal and objective of this class is to study and understand aspects of rural water supply, sanitation and hygiene education in the developing countries. The course will discuss the relationship between water, sanitation and hygiene education besides history, policies, management, gender, consumption, challenges and sustainability of rural water supply. It will also discuss the different types of sanitation facilities that are used by the rural people of the developing nations.

By the end of this course, you should have a better understanding of the complex and dynamic interrelations between and within water and sanitation systems in the developing countries with much emphasis on policies, sources, consumption, challenges, and sustainability of rural water supply on the one hand and the types of sanitation services and their problems in the rural areas on the other.

***Expected Learning Outcomes:***

- A general and broad knowledge of the major issues of the rural water supply, sanitation and hygiene education in the developing countries.
- Understand water as a holistic approach that links the process of environmental, economic and social change together now and in the future.
- Understand the importance of water, its conservation, storage and handling to avoid water related diseases.
- Knowledge of some of the key geographic, environmental and social justice issues facing our world today.
- Ability to think and write critically about these issues.

## LECTURE SCHEDULE

Dates	Lecture	Readings
January 30 and February 2	Availability of water in the word. Relationship between water, sanitation and hygiene	Biswas, A. K. 1999. Water Crisis: Current Perceptions and Future Realities. <i>Water International</i> 24(4); 363-367.  UNICEF. 2006. UNICEF Water, Sanitation and Hygiene Strategies for 2006-2015. Economic and Social Council. New York.  <a href="http://www.unicef.org/about/execboard/files/06-6_WASH_final_ODS.pdf">http://www.unicef.org/about/execboard/files/06-6_WASH_final_ODS.pdf</a>
February 6 and 9	History of rural water and sanitation since 1960s	Biswas, A. K. 2004. From Mar del Plat to Kyoto: An Analysis of Global Water Policy Dialogue. <i>Global Environmental Change</i> 144:81-88
February 15 and February 16	International and national water policies and their problems	<b>February 13, NO CLASSES, class meets 2/16</b>  World Health Organization (WHO). 1990. <i>Community Management of Rural Water Supply and Sanitation System: Points for Practitioners</i> . Geneva.
February 23	Rural water approaches since 1960s	<b>February 20, NO CLASSES, class meets 2/23</b>  Petit, O., and C. Baron, 2009. Integrated Water Resources Management: From General Principles to its Implementation by the State. The Case of Burkina Faso. <i>Natural Resources Forum</i> 33: 49-59.
February 27 and March 2	Sources of surface water	Winter, et al., 1998. Ground Water and Surface water: A Single Resource. U.S. Geological Survey Circular 1139. Denver, Co.
March 6 and 9	Sources of ground water	Winter, et al., 1998. Ground Water and Surface water: A Single Resource. U.S. Geological Survey Circular 1139. Denver, Co.
March 13 and 16	Rural water collection, storage and consumption	Thompson, John, et al. 2001. Drawers of Water II: 30 Years of change in Domestic use and Environmental Health in East Africa. London: Russell Press. <a href="http://pubs.iied.org/pdfs/9049IIED.pdf">http://pubs.iied.org/pdfs/9049IIED.pdf</a>

March 20	Water quality and perception	Trevett, A.F., et al, 2004. Water Quality Deterioration: A Study of Household Drinking Water Quality in Rural Honduras. <i>International Journal of Environmental Health Research</i> 14 (4): 273-283.
March 23		Working in the short paper
March 27 and 30	Water-borne diseases	Water Research Commission. 2003. Management of Water-related Microbial Diseases. Volume 1. Department of Water Affairs and Forestry. South Africa. <a href="http://www.dwa.gov.za/iwqs/AssessmentGuides/DiseaseGuide/DiseaseGuide.pdf">http://www.dwa.gov.za/iwqs/AssessmentGuides/DiseaseGuide/DiseaseGuide.pdf</a>
April 3 and 6	Challenges to rural water, population growth and water scarcity	Falkenmark, M. 1997. Meeting Water Requirements of an Expanding World Population. <i>Philosophical Transactions Royal Society London</i> 352:929-936.  Falkenmark, M. 1990. Rapid Population Growth and Water Scarcity: The Predicament of Tomorrow's Africa. <i>Population and Development Review</i> 16:81-94.
<b>April 10 to 18</b>	<b>SPRING BREAK</b>	<b>NO CLASSES</b>
April 20	Challenges to rural water; climate change and corruption <b>Submission of first draft of the term paper due</b>	Kundzewicz, Z.W. and Somlyódy, L. 1997. Climatic Change Impact on Water Resources in a Systems Perspective. <i>Water Resources Management</i> 11:407-435.  Davis, J. 2004. Corruption in Public Service Delivery: Experience from South Asia's water and Sanitation Sector <i>World Development</i> 32 (1): 53-71.
April 24 and 27	Types of sanitation services in rural areas	Viraraghavan, T. et al. 2011. Small Community and Rural Sanitation System. Wastewater Recycle, Reuse and Reclamation. UNESCO-EOLSS Report. Vol. II. <a href="http://www.eolss.net/Sample-Chapters/C07/E2-14-04-00.pdf">http://www.eolss.net/Sample-Chapters/C07/E2-14-04-00.pdf</a>  Cairncross, S. 2003. Sanitation in the Developing World: Current Status and Future Solutions <i>International Journal of Environmental Health Research</i> 13:S123-S131.
May 2 and 4	Importance and application hygiene education	World Health Organization(WHO).2008. Hygiene Education. In Guidelines for Drinking-Water Quality (3 <sup>rd</sup> ed). Geneva. pp. 129-140. <a href="http://www.who.int/water_sanitation_health/dwq/fulltext.pdf">http://www.who.int/water_sanitation_health/dwq/fulltext.pdf</a>
May 8 and 11	Sustainability of rural water supply,	World Health Organization(WHO).2008. Hygiene Education. In Guidelines for Drinking-Water Quality (3 <sup>rd</sup>

	sanitation and hygiene education	ed). Geneva. pp. 129-140. <a href="http://www.who.int/water_sanitation_health/dwq/fulltext.pdf">http://www.who.int/water_sanitation_health/dwq/fulltext.pdf</a>
May 15 and May 18	Conclusion and review of rural water supply, sanitation and hygiene education	
May 22	Working in the research paper	

### **Grading system:**

Class Participation	20%
Presentation of a seminar	10%
Paper on the Seminar Topic	20%
Research Paper	50%

### **Please note the following guidelines for your term paper:**

1. Choose any **two** topics from the topics listed in the lecture schedule.
2. The professor must approve your topics.
3. Present the first topic as a seminar to the class and write a short paper about it. The seminar should take between 15 to 30 minutes. The paper must be at least 15 pages long, double-spaced, one inch margins on all sides and 12 point font.
4. It should include a minimum of 15 cited references from books and peer-reviewed articles.
5. Write a research paper about the second topic which must be between 22 to 25 pages long with a minimum of 20 cited references from books and peer reviewed journals. It should be submitted by **May, 2nd, 2017**. The paper should be double-spaced, one inch margin on all sides and 12 point font (email attachment submission).
6. The papers should include tables, maps or graphs (notate the source).
7. In case of citation of references in the text, use **APA** format (**parentheses**) and **NOT** the **MLA** format (You will be given examples in the class).
8. There should be a cover page showing the title, your name, course number, instructor's name and the semester.
9. Sub-headings should be used in the paper along an introduction and a conclusion.
10. The bibliography should be written properly at the end of the paper.
11. The deadlines for submission of the first paper is **May 2nd, 2017** and the other **May 20/2017** (email attachment submission).
12. If you have any question(s) come and see me.

**Policy on Incomplete as a grade:**

I do not give incompletes (IN) except under the most extraordinary, and documented, circumstances.

**Please ... do not hesitate to come and see me if you have any questions.**

**HUNTER COLLEGE'S STATEMENT ON ACADEMIC HONESTY:**

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

And I might add that creative originality and integrity are essential if you want to develop the kind of knowledge that is going to do you any good in life. When you cheat at school, the one you are really cheating is ultimately your future self.

**ADA Policy**

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of ACCESSABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.