

**GEOG 71300 Rural Water Supply, Sanitation and Hygiene Education in the
Developing Countries**

Spring 2022

Monday and Thursday, 2:45 pm to 4:00 pm

Room 1022 Hunter North

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Office hours:

Monday & Thursday 5:00 pm to 7:00 pm

Or by appointment or by phone

No textbook.

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:

Week 1: Jan. 31 – Feb. 3

**Availability of water in the world
Relationship between water, sanitation and hygiene**

Readings:

Biswas, A. K. 1999. Water Crisis: Current Perceptions and Future Realities. *Water International* 24(4);363-367.

UNICEF. 2006. UNICEF Water, Sanitation and Hygiene Strategies for 2006-2015. Economic and Social Council. New York.

http://www.unicef.org/about/execboard/files/06-6_WASH_final_ODS.pdf

Week 2: Feb. 7 - 10

History of rural water and sanitation since 1960s

Readings:

Biswas, A. K. 2004. From Mar del Plat to Kyoto: An Analysis of Global Water Policy Dialogue. *Global Environmental Change* 144:81-88

Week 3: Feb.14- 17

International and national water policies and their Problems

Readings:

World Health Organization (WHO). 1990. *Community Management of Rural Water Supply and Sanitation System: Points for Practitioners*. Geneva.

Week 4: Feb. 21 - 24

Rural water approaches since 1960s

Mon. Feb. 21

No class – College closed

Reading:

Petit, O., and Baron, C. 2009. Integrated Water Resources Management: From General Principles to its implementation by the State. The Case of Burkino Faso. *Natural Resources Forum* 33: 49-59.

Week 5: Feb. 28- March 3

Sources of surface water

Reading:

Winter et al. 1998. Ground water and surface water: A Single Resource. U.S. Geological Survey Circular 1139. Denver, Colorado.

Week 6: March 7 - 10

Sources of ground water

Reading:

Winter et al. 1998. Ground water and surface water: A Single Resource. U.S. Geological Survey Circular 1139. Denver, Colorado.

Week 7: March 14-17

Rural water collection, storage and consumption

Reading:

Thompson, John et al .2001. *Drawers of Water II: 30 years of change in domestic use & environmental health in east Africa*. London: Russell Press.
<http://pubs.iied.org/pdfs/9049IIED.pdf>

Week 8: March 21 -24

Water quality and perception

Reading:

Trevett, A. F., Carter, R. C. and Tyrrel, S. F. 2004. Water Quality Deterioration: A Study of Household Drinking Water Quality in Rural Honduras. *International Journal of Environmental Health Research* 14(4);273-283.

Week 9: March 28 - 31

Water-borne diseases

Reading:

Water Research Commission. 2003. Management of Water-related Microbial Diseases. Volume 1. Department of Water Affairs and Forestry. South Africa.
<http://www.dwa.gov.za/iwqs/AssessmentGuides/DiseaseGuide/DiseaseGuide.pdf>

Week 10: April 4 - 7

Challenges to rural water: population growth and water scarcity.

Readings:

Falkenmark, M. 1997. Meeting Water Requirements of an Expanding World Population. *Philosophical Transactions Royal Society London* 352:929-936.
Falkenmark, M. 1990. Rapid Population Growth and Water Scarcity: The Predicament of Tomorrow's Africa. *Population and Development Review* 16:81-94.

April 15

Submission of the first draft of the term paper (by email)

Week 11: April 11-14

Challenges to rural water: Climate change and Corruption

Readings:

Kundzewicz, Z.W. and Somlyody, L. 1997. Climatic Change Impact on Water Resources in a Systems Perspective. *Water Resources Management* 11:407-435.
Davis, J. 2004. Corruption in Public Service Delivery: Experience from South Asia's water and Sanitation Sector *World Development* 32 (1): 53-71.

Week 12: April 18 -21

No classes – Spring Recess

Week 13: April 25 – 26

Types of sanitation services in the rural areas

Readings:

Viraraghavan, T. et al. 2011. Small Community and Rural Sanitation System. Wastewater Recycle, Reuse and Reclamation. UNESCO-EOLESS Report. Vol. II. <http://www.eolss.net/Sample-Chapters/C07/E2-14-04-00.pdf>

Cairncross, S. 2003. Sanitation in the Developing World: Current Status and Future Solutions *International Journal of Environmental Health Research* 13:S123-S131.

Week 14: May 2 - 5

Importance and application of hygiene education

Reading:

World Health Organization(WHO).2008. Hygiene Education. In Guidelines for Drinking-Water Quality (3rd ed). Geneva. pp. 129-140.

http://www.who.int/water_sanitation_health/dwq/fulltext.pdf

Week 15: May 9 - 12

Sustainability of rural water supply, sanitation and hygiene education

Reading:

Hoque, B.A. et al. 1996. Sustainability of Water, Sanitation and Hygiene Education Project in Rural Bangladesh: A 5-year Follow-up. *Bulletin of the World Health Organization* 74(4): 431-437.

Sustainability of rural water supply, sanitation and hygiene education

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, 2022**. 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 deadline for submission of the first paper is **May 2nd, 2022** and the other **May 15/2022** (email attachment submission).
12. If you have any question(s) come and see me.

Attendance and Grading Policies:

1. There is a direct correlation between good grades and good attendance. Come to the class prepared, read the appropriate articles of the reading list, take notes, study for your exams and you will be successful. Attendance is taken at every class meeting.
2. I do not give incompletes (**IN**) except under the most extraordinary, and documented, circumstances.
3. The only students who will be eligible for CR/NC at the end of the semester are those who have completed all of the course requirements including all mid-term exam, term paper, and the final exam.
4. If miss an exam, you must (1) contact me within 48 hours of the missed exam, (2) present acceptable documentary evidence for your absence, and (3) arrange a make-up exam at a mutually convenient date and time. A make-up exam covers the same materials as the regular exam but will not be the same exam given as scheduled.

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.

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barr7@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

Please... do not hesitate to email or call me if you have any question.