ENVIRONMENTAL SCIENCE

[ENVS3010/PHTS/RCHA: URBAN WATER, SANITATION AND HYGIENE]

ACADEMIC YEAR 2018-2019
[SUMMER]

COURSE SYLLABUS

1. COURSE INFORMATION

Classes held: Sun & Tue, 9:00 AM–11:00 AM, Venue: H302
Credits: 4
Prerequisite:

2. FACULTY INFORMATION

Faculty Name: Sayed M Nazim Uddin
Email: nazimiwfmbuet@gmail.com
Office Location: H601
Office Hours: Mon, 10:00 AM-12:00 PM

Qualifications: PDF (Geography), PhD (Environmental Science and Engineering), Master of Environmental Studies, Int. Diploma (Community Development), M.Sc. (Water Resources Development) B.Sc. (Honors) (Environmental Science)

Areas of Expertise: Wastewater/Greywater Treatment and Management
Global Water, Sanitation, and Hygiene (WASH) and Health
Solid Waste Management
Resource Recovery and Bio-Energy
Community-based Research
Social Innovations and Water Resources Management
Disaster/Hazards Risks Reduction

Profile: Dr. Sayed M Nazim Uddin is currently working as a Post-Doctoral Fellow in the Department of Geography at the University of Victoria (UVic), Canada. Additionally, he is working as a Sessional Lecturer at UVic and teaching some courses related to WASH, Water Resources Management, and Research Methods. He holds a PhD from University of Science and Technology Beijing (USTB), China. He is a Chairman of Nagoya University Global Environmental Leaders Association in Japan. Over 40 peer-reviewed journal articles, international conference proceedings, technical guidelines, policy briefs, and compendium have been published in the above-mentioned fields.
3. TEXT AND OTHER COURSE MATERIALS

There is no required course text. The required weekly readings will be uploaded to Moodle for easy access.

4. COURSE OBJECTIVES AND DESCRIPTION

Course Objectives:
1. Provide overview of global WASH and associated problems.
2. Discuss the WASH-borne health hazards in urban and peri-urban areas.
3. Identify the vulnerable and marginalized communities in the cities who are excluded from the WASH plans, programs, and services.
4. Examine the WASH interventions in schools and urban slums.
5. Discuss the impacts of extreme events on urban WASH system and services.
6. Examine the alternative approaches to improve urban WASH system and services.
7. Explore the co-benefits of sustainable sanitation for urban and peri-urban areas.
8. Examine the viable solutions to improve the urban WASH system and services.
9. Explore various innovative financial mechanisms to improve the urban WASH system and services.

Course Description:
Urban communities in the world are challenged by WASH: water, sanitation and hygiene-borne hazards, risks, and vulnerabilities including a range of diseases, water scarcity, its depletion and pollution. This course will explore WASH-related issues in urban and peri-urban areas around the world. We will examine a range of vulnerable groups (e.g. slum dwellers, homeless, waste pickers, small shopkeepers) in the urban areas who are still excluded from the WASH plans, programs and policies. The course will address the WASH-borne health hazards, in urban, peri-urban slums, and other informal settlements across the globe including Asia. In addition, effects of various uncertainties such as climate change, natural disasters, and human induced war/conflicts on urban and peri-urban WASH system and services will be examined. Various strategies for building resilience to hazards in WASH will be discussed. The course will focus on a range of sustainable solutions in WASH to solve urban WASH problems/challenges. Students will examine different approaches and systems such as Community-Led Urban Environmental Sanitation (CLUES), Ecological Sanitation (EcoSan), sustainable sanitation, inclusive waste management based on various case studies around the world including the instructor’s own field experience in America, Asia and Africa.

5. LEARNING OUTCOMES

By the end of the course, students should be able to:
1. Understand the components of WASH and have diverse knowledge on the urban WASH related problems and challenges.
2. Define the ideas of WASH-borne risks and hazards.
4. Develop the ideas on various vulnerable groups who are still excluded from the WASH and health programs and policies.
5. Understand the challenges in urban areas to achieve the Sustainable Development Goals of WASH and health.
6. Describe the WASH related issues in schools.
7. Increase their problem-solving capacity by bringing novel ideas and thoughts to solve the urban WASH problems.
8. Develop capacity to become global leaders in research, development and implementation in the field of WASH.
9. Improve competency in interpreting scholarly literature in WASH and enhance research skills by writing an academic term-paper.

6. ATTENDANCE REQUIREMENT & GRADING POLICY

I will check attendance. Presence during at least 90% of the teaching hours is required. Active participation during class is also assessed. Participatory group discussion will be an important part of the course and for the grading, as well as regular assignments.

7. CONTACT WITH YOUR PROFESSOR

Students can communicate face to face while I am at campus and if not through email. Students will receive their final grades after the course, during the course I give feedback face to face to each student and am available for personal meetings and contacts.

8. COURSE SCHEDULE

WEEK 1: INTRODUCTIONS

Sun 13 May: Introduction-Course, Classes, Evaluation, Instructor, Career!
Global WASH-Facts and Figures

Readings:

Tue 15 May: Global WASH- Problems & Challenges

Readings:

Further Readings:

Assignment 1: Traditional Shit Flow System in the urban areas and Problem Tree Analysis.
WEEK 2: WASH-BORNE RISKS & HAZARDS

Sun 20 May: WASH-borne pathogen hazards in urban and peri-urban areas

Readings:

Tue 22 May: Social exclusion and marginalization: exposure of vulnerable groups to WASH-borne hazards

Readings:

Assignment 2: Vulnerable groups

WEEK 3: WASH SERVICES IN URBAN SLUMS & SCHOOLS

Sun 27 May: WASH services in urban slums and the informal settlements

Readings:
- Mitlin, D. Will urban sanitation “leave no one behind”? Environment and Urbanization, 27(2), 365-370.
- Kurian, M. And McCarney, P. (2010) Peri-urban water and sanitation services, Springer. (e.g. Chapter 13)

Tue 29 May: WASH in Schools

Readings:

Assignment 3: World Environment Day Slogans (Should be creative)

WEEK 4: WASH & EXTREME EVENTS

Sun 3 June: Extreme events and their impacts on urban WASH systems and services.

Readings:

Tue 5 June: WASH in humanitarian emergencies

Readings:
✓ Vivar et al. (2016) An insight into the drinking-water access in the health institutions at the Saharawi refugee camps in Tindouf (Algeria) after 40 years of conflict, Science of the Total Environment, 550, 534-546.

WEEK 5: WASH GOVERNANCE

Sun 10 June: Key strategies that national government and donors have tried to improve the WASH condition and some lessons learnt.

Readings:

Tue 12 June: WASH governance in global North: Case Studies from Developed Countries

Readings:

Mid-Term Exam: 12 June

WEEK 6: SUSTAINABLE SOLUTIONS (I)

Sun 17 June: Eid-Ul-Fitre (National Holiday)

Tue 19 June: CLUES, Ecological Sanitation/Closed loop Sanitation System

Readings:
WEEK 7: SUSTAINABLE SOLUTIONS (II)

Sun 24 June: Sustainable Sanitation Tech: Human feces composting, household greywater treatment & reuse

Reading:

Tue 26 June: Innovative financial mechanisms for improving WASH systems and services.

Readings:

WEEK 8: SUSTAINABLE SOLUTIONS & TERM-PAPER PRESENTATIONS

Sun 1 July: Inclusive Waste Management

Readings:

Tue 3 July: Term-Paper Presentations: Group 1 & 2

Deadline for Term-Paper Submission: 3 July

WEEK 9: TERM-PAPER PRESENTATIONS, COURSE WRAP UP

Sun 8 July: Term-Paper presentations: Group 3 & 4

Tue 10 July: Review sessions and Course wrap up

9. ASSESSMENT METHODS

Participation (20%): Participation include class attendance, participatory group discussions, storytelling, debates, Q & A sessions. Students are expected to attend and actively participate in all classes and weekly discussions. To achieve full participation marks means that the student engages in the discussion and actively listens, poses questions and provides answers or contributions when possible. This is an easy mark to get, by regularly attending class and coming prepared.
Midterm Exam (In Class) (25%): The exam will consist of Multiple Choice Questions and open questions, and it will cover materials from lectures, readings, and videos/documentaries. The lectures posted on Moodle do not include everything. You are expected to attend lectures and take notes because some information (concepts, ideas, themes) will be discussed in the class that may not be on the lecture slides. (Date: Tue 12 June)

Assignments (15%)- Three class assignments based on the participatory group discussions (5 points for each).

Term Paper Presentation (15%) – Each student will give a presentation on their research and the findings discussed in the Term-Paper. Students can use PowerPoint or any other related computer software as a visual supplement to the oral presentation. Ideally, we will schedule approximately 10 minutes for each presentation, plus an additional 5 minutes for a questions/answers session. This may be change depending on how many students enroll in the course.

Term Paper (25%) – Urban WASH Issues Diagnosis and Solutions (Maximum 10 pages)- Each student will select a country (urban area) without any overlapping for the ‘Urban WASH Issues Diagnosis & Solutions’ research paper. You will review the existing literature including assigned reading materials on current WASH situation of your selected country. Please choose your country by 20 May 2018 to start working on the term paper. You will need to include the following sections in your term paper:

1. Overall WASH Situation (Max 2 Pages): Please review the existing literature and reading materials to write this section. You will need to identify major issues in the field of urban WASH in the selected country.

2. Problem Tree Analysis (Max 2 Pages): You will need to draw a WASH problem tree and analyze it based on the class exercise, real world data and other available literature. You will also explain the problem tree based on the available evidence. You will also need to identify and discuss about the vulnerable groups/communities in the selected country. Please include the ‘Traditional Shit Flow System’ in the urban area.

3. Alternative Ways to Tackle these problems (Max 2 page): You are expected to discuss a range of alternative/innovative ways and strategies to improve the country’s urban WASH system. Any successful cases or lessons can be included in this section.

4. Sustainable Solutions (1 Pages): Please propose some solutions based on the available data and your own ideas to solve the problems. You can also include the solutions and approaches which have been discussed in the class.

5. Your Final Discussion and Conclusion (1-2 Pages): You will need to discuss the above sections critically and give your final thoughts and ways forwards to solve the problem. You can also include your perspectives (e.g. environmental science, public health, development studies, and others) to propose some innovative ideas on urban WASH.

Formatting

All works must be word-processed, 1.5-spaced, 11-point font size. Assignments/Term Paper should be proofread prior to submission to ensure that they are free of grammatical and spelling errors and must include a list of all references cited in the text, using the APA citation style (Please check online for APA citation guideline). All assignments/Term Paper should include the student’s name and student number, the course’s code and name, and that of the instructor, to avoid loss or improper identification. No need to use a cover page. Minimum 10 scientific references are required for your term paper.

Note: Detailed description of class assignments will be provided during the class discussions.
10. KEY DATES & DEADLINES

20 May: Final selection of the country for Term-Paper.
22 May: Assignment# 1
29 May: Assignment#2
3 June: Assignment# 3
12 June: Mid-Term Exam
3 July: Final Term-Paper Submission

11. PLAGIARISM & ACADEMIC INTEGRITY

All members of the AUW Community are bound by the Academic Honor Code published in the Academic Bulletin (http://www.auw.edu.bd/academics/course-bulletin/).

The integrity of students’ academic work is very important to AUW faculty. Universities are based upon the fundamental principle that the work presented truly belongs to the author, because the academic community revolves around ideas and creativity. Each person’s ideas are his or her contribution to the academic community. Therefore, taking another person’s ideas and representing them as one’s own is a serious form of dishonesty. Similarly, cheating (copying someone else’s work, asking for answers, sharing answers, etc.) and other forms of dishonesty (falsifying data, making up references, etc.) are also serious breaches of this honor code.

Plagiarism is intentionally or unintentionally taking credit for another’s words or ideas. You may not plagiarize in your academic work, and you must adhere to the following:

• When you use someone else’s words (whether they are from a distinguished author or a classmate’s paper), place the words you have copied in quotation marks and provide the appropriate citation of author and source. A good guideline to use to avoid plagiarism is to make sure quotes of three or more sequential words from someone else are put into quotation marks.
• If you paraphrase (reword) another person’s ideas, then you must also cite the source. Paraphrasing must involve changing the words and sentence structure of the original source.
• Cite materials you copy or paraphrase from the Internet, even if the author is not identified.

The various academic disciplines (humanities, social sciences, sciences) use slightly different formats for footnotes, endnotes, and bibliographies. Your professor for a particular class will tell you which format he or she wants you to use in that class.

Copying, asking for answers, sharing answers, and any other form of cheating (misrepresenting your own work and knowledge) on exams or quizzes are all forms of academic dishonesty.

Other Forms of Academic Dishonesty

1. Making up references, quoting wrong sources, etc.
2. Falsifying data.
3. Misrepresenting your situation to be excused from academic work.
4. Submitting the same paper in more than one class.
5. Informing a student in a later class about questions on tests or quizzes.
6. Misrepresenting your academic work or qualifications in any way.

Full details about plagiarism, academic dishonesty and penalties are available in the Academic Honor Code in the Academic Bulletin.
12. STRATEGIES TO PREVENT PLAGIARISM & VIOLATIONS OF ACADEMIC INTEGRITY

All assignments and term papers will be checked carefully by the instructor. Additionally, online software will be used to check the plagiarism in the assignments and term-papers.

13. CLASS BEHAVIOUR

Please turn cell phones off during class—ringers, earphones and texting are disruptive and unacceptable. Students are expected to do the assigned readings in advance and be prepared to participate in the participatory group discussions and in-class activities.

14. OTHER IMPORTANT INFORMATION

Late Policy
Missing or late entries will not be marked. For the assignment, and Term Project, 10% will be deducted for every day the assignment is late. Exceptions will only be granted for medical reasons (requiring a written note from a medical practitioner stating your inability to attend class) or other serious personal circumstances.

Religious Observance
Please notify me immediately once you know that any date proposed for assignments or papers conflict with dates of special significance in your religion and culture. We will arrange alternative dates to accommodate individual needs.

Accessibility
Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AUW administration as soon as possible.