ENVIRONMENTAL SCIENCE

[ENVS3009/DS/PHTS: ENVIRONMENTAL HEALTH]

ACADEMIC YEAR 2018-2019
[SUMMER]

COURSE SYLLABUS

1. COURSE INFORMATION

Classes held: Sun & Tue, 2:00 PM–4:00 PM, Venue: H307
Credits: 4
Prerequisite:

2. FACULTY INFORMATION

Faculty Name: Sayed M Nazim Uddin
Email: nazimiwfmbuet@gmail.com
Office Location: H601
Office Hours: Mon, 2:00-4:00 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

Recommended Text Book:

In addition to the course textbook, a range of scientific reports, book chapters, and Journal Articles will be uploaded on Moodle for easy access.

4. COURSE OBJECTIVES AND DESCRIPTION

Course Objectives:
1. Introduce the fundamentals and subclasses of environmental health.
2. Define the major sources of biological, chemical and physical agents found in water, air, soil and food.
3. Describe a range of environmental health problems associated with the agents mentioned above.
4. Identify target populations exposed to hazardous agents and potential impacts on health.
5. Explain current environmental risk assessment methods.
6. Describe the environmental health indicators.
7. Identify key laws and regulations related to environmental health.
8. Discuss environmental health in emergencies and disasters.
10. Review a range of environmental health initiatives and health risk reduction programs from local to global levels.

Course Description:
The aim of this course is to introduce the field of environmental health and its subgroups. Over the course of the semester, we will examine sources, routes, media, and health outcomes associated with the biological, chemical and physical agents in the environment. Students will gain an understanding of the potential impact of environmental agents on human health. The course will explore the subclasses of environmental health such as environmental epidemiology, environmental toxicology, exposure science, and risk assessment. Exposure via different media and pathways (e.g. soil, air, water, food) will be reviewed. A range of case studies will be provided to gain familiarity with course concepts. We will also look at how various government programs (both technical and non-technical) are established, organized, and operated to prevent or control hazards in the community, and the legal and regulatory framework behind them.

5. LEARNING OUTCOMES

By the end of the course, students should be able to:
1. Understand the fundamentals of environmental health and its associated issues.
2. Identify the sources of risks and their control.
3. Identify the environmental risk factors and impacts on society.
4. Understand the multi-disciplinary approaches in improving environmental and public health conditions.
5. Describe the best practices for environmental health.
6. Explain various environmental health indicators.
7. Understand the key environmental health issues in emergencies and disasters.
8. Develop capacity to become global leaders in environmental health research, development, and implementation.
9. Increase their problem-solving capacity by bringing novel ideas and thoughts to solve the issues related to environmental health.
10. Improve competency in interpreting scholarly literature in environmental health and enhance research communication skills by writing and presenting the academic concept 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 (STL) will be an important part of the course and for the grading, as well as mini-exams.

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: INTRODUCTION & ENVIRONMENTAL EPIDEMIOLOGY

Sun 13 May: Introduction-Course, Classes, Evaluation, Instructor, Career!
    Introduction to Environmental Health: Facts and Figures

   Readings:

Tue 15 May: Environmental Epidemiology

   Readings:
   ✓ Chapter 2: Text Book

WEEK 2: TOXICOLOGY & AGENTS OF ENVIRONMENTAL DISEASES

Sun 20 May: Environmental Toxicology and Global Health Threats

   Readings:
   ✓ Chapter 3: Text Book
Tue 22 May: Vector-Borne Diseases, Toxic Metals, Pesticides & Radiation

**Readings:**
- ✔ Chapter 5, 6 & 7: Text Book

**WEEK 3: AIR AND WATER QUALITY**

Sun 27 May: Air Quality

**Reading:**
- ✔ Chapter 10: Text Book
- ✔ Krishna et al. (2017) Tackling the health burden of air pollution in South Asia, BMJ, 359, 1-5.

Tue 29 May: Water Quality

**Readings:**
- ✔ Chapter 9: Text Book

1st Mini-Exam & Quizzes

**WEEK 4: WASTE-BORNE HAZARDS AND OCCUPATIONAL HEALTH**

Sun 3 June: Solid and Liquid Waste

**Readings:**
- ✔ Chapter 12: Text Book

Tue 5 June: Formal and Informal Occupational Health

**Readings:**
- ✔ Chapter 13: Text Book
WEEK 5: FOOD SAFETY & SCANDALS

Sun 10 June: Foodborne Diseases

Readings:
- Chapter 11: Text Book

Tue 12 June: Global food scandals

Readings:
- Handford et al. (2016) Impacts of Milk Fraud on Food Safety and Nutrition with Special Emphasis on Developing Countries, Comprehensive Review in Food Science and Food Safety, 15, 130-142.

WEEK 6: RISK ASSESSMENT AND MANAGEMENT

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

Tue 19 June: Environmental Risks Assessment and Management

Readings:

2nd Mini-Exam & Quizzes

WEEK 7: ENVIRONMENTAL HEALTH INITIATIVES (I)

Sun 24 June: Global Environmental Health Initiatives

Readings:
Tue 26 June: Environmental Health in Emergencies and Disasters

Readings:

WEEK 8: ENVIRONMENTAL HEALTH INITIATIVES (II) & CONCEPT PAPER PRESENTATIONS

Sun 1 July: Environmental Policy and Regulation

Readings:
- Chapter 4: Text Book

Tue 3 July: Concept Paper Presentation (Group 1 & 2)

WEEK 9: CONCEPT PAPER PRESENTATIONS & COURSE WRAP UP

Sun 8 July: Concept Paper Presentation (Group 3 & 4)

Tue 10 July: Course Wrap up

9. ASSESSMENT METHODS

Attendance and Participation (10%): Participation include class attendance and 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.

Small-To-Large (STL) Group Discussion (15%): STL is a teaching and learning technique where students are divided into several small groups to discuss Environmental Health Issues and provide their creative solutions. A large group discussion follows and, in this process, a discussion leader from each group facilitates the small group discussions. Discussion leader will be chosen by the group members through bottom-up approach.

Mini-Exam (In Class-Total 2) (30%): The mini-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.

Country EH Concept Paper (30%): Each student will select a country without any overlapping for the ‘EH Concept Paper’. You will develop a specific idea that interests you within Environmental Health. You will review the existing literature including assigned reading materials on EH situation of your selected country. Please choose your country by 20 May 2018 to start working on the Concept Paper. You must provide key references demonstrating engagement with the literature. The concept paper should be around 8 pages long including references.

Plenary Style Concept Paper Presentation (15%) – Each student will give a presentation on their research and
the findings discussed in the concept 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 plenary style discussion. This may be changed depending on how many students enroll in the course.

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 appropriate citation style (Please check online for appropriate citation guideline). All Concept Papers 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 concept paper.

*Note: Detailed descriptions of the Concept Paper will be provided during the introductory class.*

<table>
<thead>
<tr>
<th>10. KEY DATES &amp; DEADLINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 May: Final selection of 'Country EH-hot topics’ for the Concept Paper.</td>
</tr>
<tr>
<td>29 May: 1st Mini-Exam and Quizzes</td>
</tr>
<tr>
<td>19 June: 2nd Mini-Exam and Quizzes</td>
</tr>
<tr>
<td>3 July: Final Concept Paper submission.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. PLAGIARISM &amp; ACADEMIC INTEGRITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>All members of the AUW Community are bound by the Academic Honor Code published in the Academic Bulletin (<a href="http://www.auw.edu.bd/academics/course-bulletin/">http://www.auw.edu.bd/academics/course-bulletin/</a>).</td>
</tr>
</tbody>
</table>

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 concept papers will be checked carefully by the instructor. Additionally, online software will be used to check the plagiarism in the Concept 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 Concept Paper, 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. 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.