### Course Overview

*Water, public health and the environment* will examine the provision of water and sanitation services around the world with a particular focus on cases studies from low and middle income countries in Africa and South East Asia. This course will examine:

- The current crisis of access to water, sanitation and Hygiene (WASH) services and infrastructure around the world.
- The public health and environmental impacts of insufficient WASH services.
- Technology, planning and policy options for expanding WASH services.
- The economic and behavioral barriers to the adoption of WASH technologies and services.
- The human right to WASH and its impacts on market-based approaches to service delivery.

### Learning Objectives

By the end of the course students will:

1. Demonstrate an understanding of water and sanitation-related treatment and supply infrastructure to improve environmental and public health.
2) Demonstrate an understanding of the larger societal impacts (economic, behavioral, policy, etc.) of water and sanitation systems through written work and discussion.

3) Name primary illnesses and exposure pathways linked with the lack of functioning water and sanitation systems.

4) Understand and correctly use public health and environmental-related terminologies and statistics as they pertain to water and sanitation.

5) Develop and demonstrate literature search and citation skills in written work.

**Required Textbook**
Readings will be taken from a variety of sources (primarily scientific journals) and will be available as PDF or links through Canvas.

**Course Structure**
A mixture of discussions based on readings and videos; student presentations; and lectures. Students are expected to complete all readings prior to class and to actively participate in class discussion. Additionally, students will work in teams to craft policy recommendations for a specific Africa-based W&S case study as their final project in lieu of a final examine. Students will be expected to set a meeting time outside of class with their teams to work on creating this policy proposal. Graduate students will be assigned additional readings/viewings to be outlined in the course schedule as well as additional assignments. Undergraduates are encouraged to browse these additional readings/viewings but are not required to read them as part of the course.

**Grading Guidelines**
Grades will be based on these elements:

- **Attendance & Participation** (15%)
- **Reading/Viewing Responses** (20%)
- **Debate** (20%)
- **Reading Quizzes** (15%)
- **Policy Proposal** (30%)

1. **Attendance & Participation**: 15% of grade. Attendance will be taken both in lecture and in section. Students may have 2 unexcused absences without penalty during the term. For every class missed thereafter, 1/3 of a letter grade will be deducted from the participation grade. Excused absences are permitted with an appropriate letter (e.g., note from doctor). If the student will be absent for an extended period for a documented reason, it is the student’s responsibility to notify the instructor in advance in writing (via email). In case of emergency, update the instructor as soon as possible.

2. **Reading/Viewing Responses**: 20% of grade. The reading/viewing assignments are designed to make each student think deeper about core tensions of the water and sanitation crisis as well as to document the progress of learning. Undergraduates will submit two responses over the course of the quarter and graduate students will submit three responses. Reading/viewing responses are due at the beginning of class they are listed under, e.g., the assignment listed for 4/11 is due on 4/11 by the beginning of class at 10:00am. Feel free to talk about assignments with other students inside and out of class as well as the instructor, but all submitted work must
be yours and yours alone. These assignments require a 2-pages response to an aspect of the water and sanitation crisis (supplied by the professor) in which the student defends a specific position. More information about these assignments will be provided in class.

3. Debate: 20% of grade. During week 6, we will have a two-day debate in class. One day will be devoted to preparation, the other to the debate itself. The students will be divided into different teams and they will only be told which side of the propositions they are assigned to the week before the debate. The instructions and format of the debate will be discussed in class. Students will be evaluated by the professor and by their peers according to their assigned roles during the debate.

4. Reading Quizzes: 15% of grade. The reading/viewing assignments are designed both to keep each student on track and prepared during the quarter as well as to document the progress of learning. At the beginning of each class, students will have 5-minutes to complete a short 2-3 question quiz on the assigned reading or previous class viewings. When there is additional readings for Grad students there will be an extra question which is required for grad students but extra credit for Undergrads.

5. Policy Proposal: 30% of grade. The policy proposal replaces an exam. Students will work in teams to craft a policy proposal for the implementation of a water and sanitation intervention based on a real-world situation. Using what they have learned in class, students are expected to create a 4-page policy proposal that clearly lays out how and why they are implementing their policy. Note: graduate students will be required to create a 6-page policy proposal which will include additional considerations. Again, you should talk about this proposal with other students inside and out of class as well as the instructor, but all submitted work must be your teams alone. The policy proposal must be uploaded to Canvas by 12:30pm on Tuesday, June 13.

Format for Written Assignments:
All material should be formatted in 12pt. Times Font. All Margins should be 1” Top and Bottom, 1.25” Left and Right. Please submit all written materials in Microsoft Word .docx format.

Format for Final Project:
The format for the final critique can be found on Canvas.

Grading Scale
A+ = 98-100%
A = 93-97.9%
A- = 90-92.9%
B+ = 87-89.9%
B = 83-86.9%
B- = 80-82.9%
C+ = 77-79.9%
C = 73-76.9%
C- = 70-72.9%
D+ = 67-69.9%
D = 63-66.9%
D- = 60-62.9%
F = < 59.9%

If the class is taken P/NP, a C- or higher is required to pass the course.

A passing grade indicates that you have achieved the Learning Objectives stated above, have completed all assigned work, and participated in group discussions. The following grade breakdowns are provided to help you understand what a passing grade will entail:
A 100 – 90 % ---- Excellent. Ideas are clearly stated and developed. Specific examples are appropriate and help develop claims. Student not only demonstrates full knowledge of subject, but also demonstrates insight, invention, critical thought and ability to elaborate.

B 80 - 89 % ------ Good (satisfactory for graduate level work). Meets expectations for assignments, analysis and critique.

C 70 - 79 % ------ Average. Work is competent. Student demonstrates reasonable awareness and knowledge of subject, but fails to elaborate; work is often not supported by specific examples, analysis or synthesis.

D 60 - 69 % ------ Inferior. Notably lacking preparation; project/assignment content may be irrelevant or dispersive.

F 59% or less ---- Failing. Work is incomplete, not understandable or logical, poorly organized. Student doesn’t have grasp of information, and can’t answer questions about subject.

Expectations
It is expected that students work diligently and creatively with the understanding that the quality of their work matters, both for their own learning but also for the course community they are a part of. As a 4-credit course, under-grad students should expect to spend ~12 hours per week on the course and graduate students should spend ~16 hours per week.

Attendance and Participation
Attendance at each class session is essential. Absences will be excused only in circumstances of serious and documented health or family emergency. If you are sick, go to a doctor or the health center and get a note. If a student must miss class, they should inform the instructor at least 24 hours in advance in order to receive an excused absence. Participating in thoughtful classroom discussions is an essential part of this class.

Late Assignments
Late assignments are not accepted in this course and will receive a failing grade. Students must notify the instructor as soon as possible if a serious issue arises that prevents them from completing an assignment on time. Late assignments will be accepted only in the event of documented accidents, family emergencies, or illnesses. No make-up examinations will be granted without proper documentation. There is no extra credit offered in this course. If the student is facing a serious issue that intervenes with their academic performance, please notify the instructor as soon as possible.

Incomplete Policy
Incompletes will be given only for extreme circumstances such as a documented critical illness (mental or physical). If there is a serious issue that comes up and causes delays in the student’s assignments or interrupts attendance, it is the student’s responsibility to communicate with the professor immediately. The University does not allow incompletes to be given retroactively.

If a student registers for the class and does not complete the assignments and does not communicate and attain the professor’s agreement for the specific terms for granting an incomplete, the student will be given credit for the work turned in and receive an F for work not turned in. The official University grading policy can be found at http://registrar.uoregon.edu/incomplete_policy.
Computer and Other Electronic Devices Policy
The use of laptops and other electronic devices in class is discouraged. This can be distracting and we want to create an environment that encourages engaged learning. Please refrain from using cell phones and have them in silent mode before class starts.

Communication and Email Message Policy
Official course communication will occur in lectures and sections, and through email or Canvas. Any changes to the syllabus will be announced via Canvas. Students are responsible for keeping up-to-date with the course information. Please contact the professor if you have any questions regarding the class content or structure. The professor has designated office hours, please make an appointment if you have any specific concerns or questions about the course. Emails received during the weekend will not be answered until Monday morning.

Accommodations for Students with Disabilities
The University of Oregon strives to provide equal opportunity and access for all students. It is “dedicated to the principles of equal opportunity in education and accepts diversity as an affirmation of individual identity within a welcoming community. Disability is recognized as an aspect of diversity integral to the university and to society” (http://aec.uoregon.edu/). If there are aspects of the instruction or design of this course, which may result in barriers to your participation, please notify the instructor as soon as possible so that accommodations may be made. Please contact the UO Accessible Education Center (website above) for further information and assistance.

Inclusion Statement
The School of Architecture and Allied Arts is a community that values inclusion. We are committed to equal opportunities for all faculty, staff, and students to develop individually, professionally, and academically, regardless of ethnicity, heritage, gender, sexual orientation, ability, socio-economic standing, cultural beliefs or traditions. We are dedicated to an environment that is inclusive and fosters awareness, understanding and respect for diversity. If you feel excluded or threatened, please contact the instructor and/or the department head for assistance. The University Bias Response Team seeks to create a just campus by providing resources for the university community to respond to incidents of bias and harassment” and is a valuable resource: (http://bias.uoregon.edu ).

Academic Misconduct Policy
The University Student Conduct Code is available at http://conduct.uoregon.edu. Academic misconduct includes cheating, plagiarism, or fabrication (see website for definitions and further information). Students should always properly acknowledge and cite all sources of information, including documents, images, photographs, and especially in the context of a design studio, known precedents or inspirations for design. Plagiarism is taking and using as one’s own the ideas, concepts, analysis and writings of another without giving appropriate credit through proper documentation. “Proper documentation” includes quotation marks, foot- or endnote citations, or noting that a sentence or paragraph is paraphrased (with references to where the original information was found). Providing assistance to another student who is attempting to cheat or plagiarize is also considered academically dishonest.
If there is any question about whether an act constitutes academic misconduct, it is the student’s obligation to clarify the question prior to taking any action. Principles of academic honesty and professional ethics also apply to any use of computers associated with the class. This includes observing all software licensing requirements and respecting copyrights of intellectual property published on the Internet.

The following actions may result in disciplinary sanction according to the university’s academic honesty policies:

- Evidence of collusion when expected to submit individual work (working with someone else).
- Evidence of plagiarism (using someone else’s work without proper citation).
- Multiple submissions (submitting the same paper for more than one class).

Plagiarism will receive a failing grade.

Additional Help
If you will be working off campus, you will need to download the UO VPN link (virtual private network). If you have technical issues with any part of the course, contact the helpdesk (541-346-HELP). The instructor will be unable to read papers and assignments in advance. However, there are a number of campus resources to help students. For help with citing sources or developing arguments visit the Teaching and Learning Center: http://tlc.uoregon.edu/subjects/writing/.

How to do the Readings
Read the materials prior to class. Take notes while you read. The readings provide the foundation upon which lectures are built. Below are the guidelines for reading the assigned texts.
1. What are the author’s main arguments or central points?
2. What evidence does the author use to support the central arguments?
3. Is the author arguing against a specific idea or theory?
4. Do you agree with the arguments? Why or why not? Do you find them convincing?
5. What did you learn?
6. Does the reading resonate with any experience in your life or any current event in the news?

Open Learning Environment
The intention and structure of university level courses are to provide open, thoughtful forums for a wide variety of topics and ideas. The University of Oregon affirms and actively promotes the right of all individuals to equal opportunity in education and employment at this institution without regard to race, color, sex, national origin, age, religion, marital status, disability, veteran status, sexual orientation, gender identity, gender expression, or any other consideration not directly and substantively related to effective performance. We will value each class member’s experience and contributions and communicate disagreements respectfully. Please notify the professor if you feel any aspect of this course undermines these principles in any way.

Sexual Harassment and Violence
The UO is committed to providing an environment free of all forms of prohibited discrimination and sexual harassment (sexual assault, domestic and dating violence, and gender or sex-based bullying and stalking). If you have experienced any form of gender or sex-based discrimination
or harassment, know that help and support are available. UO has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

Please be aware that all UO employees, other than designated confidential resources (see https://safe.uoregon.edu/services) are required to report credible evidence of prohibited discrimination, including sexual harassment and sexual violence. This means that if you tell me about a situation of sexual harassment or sexual violence that may have violated university policy or state or federal law, I have to share the information with my supervisor or the University’s Title IX Coordinator or the Office of Affirmative Action.

If you wish to speak to someone confidentially, you can call 541-346-SAFE, UO’s 24-hour hotline to be connected to a confidential counselor to discuss your options, as confidential counselors are not required reporters. You can also visit the SAFE website at https://safe.uoregon.edu/services for more information. Each resource is clearly labeled as either “required reporter,” “confidential UO employee,” or “off-campus,” to allow you to select your desired level of confidentiality.

The schedule below indicates the weekly class session topic (top), followed by the readings/views, and finally the assignments.
***IMPORTANT NOTE: THIS IS AN ITERATIVE LEARNING PROCESS SO THE PROFESSOR MAY CHANGE SOME ASSIGNMENTS AND READINGS DURING THE QUARTER***

Class Schedule

Week 1: Introduction

Session 1 (4/4): Course Overview: Syllabus Review
Introductions. Overview of class topics, schedule, requirements, policies, and grading. How to do well in this class?

Session 2 (4/6): The Global Access to WASH
Reading:
- JMP, 2015. “Introduction” (Focus on Africa and Asia) p1-20

Assignment DUE at beginning of class:
- 5-min quiz at the beginning class

Week 2:

Session 3 (4/11): Technologies for Water and Sanitation
Reading:
- Moe et al., 2006. “Global challenges in water, sanitation and health” p41-55

Assignment DUE at beginning of class:
- 5-min quiz at the beginning class

Session 4 (4/13): Human Health and WASH
Reading:
- Ferriman, 2007. “BMJ readers choose sanitation as greatest medical advance since 1840” p111

Grades also read:

Assignment DUE:
- 5-min quiz at the beginning class
Week 3:

Session 5 (4/18): Additional Benefits of WASH

*Reading:*

*Graduates also read:*

*Assignment DUE:*
- 5-min quiz at the beginning class

Session 6 (4/20): WASH and Microenterprise

*Reading:*

*Assignment:*
- 5-min quiz at the beginning class
- Grads submit Reading Response 1

Week 4:

Session 7 (4/25): Monitoring Access to WASH

*Reading:*
- JMP, 2015. “JMP Method” (B) (Focus Africa, Asia) p50-53

*Assignment DUE:*
- 5-min quiz at the beginning class

Session 8 (4/27): Behavioral Impacts on Intervention Effectiveness

*Reading:*

*Assignment DUE:*
- 5-min quiz at the beginning class
Week 5:

Session 9 (5/2): Economics of Water - Supply and Demand
   Reading:

Assignment DUE:
   - 5-min quiz at the beginning class

Session 10 (5/4): Economics of Sanitation - Incentives
   Reading:

Graduates also read:

Assignment DUE:
   - Undergrads submit Reading Response 1, Grads submit Reading Response 2

Week 6: Debate Week

Session 11 (5/9): Debate Prep
   Reading:
      - No Reading

Session 12 (5/11): Debates
   Reading:
      - No Reading

Assignment DUE:
   - In-class debate
**Week 7:**

**Session 13 (5/16): User Participation**

*Reading:*  

*Assignment DUE:*  
- 5-min quiz at the beginning class

**Session 14 (5/18): Decentralization and When Is It Time to Act**

*Reading:*  
- Schmidt et al., 2009. “Household water treatment in poor populations: Is there enough evidence for scaling up now?” p 986-992.  
- Clasen et al., 2009. “Comment on Household water treatment in poor populations: Is there enough evidence for scaling up now?” p 5542-5544.  

*Assignment DUE:*  
- 5-min quiz at the beginning class

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**Week 8:**

**Session 15 (5/23): Economics of WASH - Pricing**

*Reading:*  

*Graduates also read:*  
- Rogers et al., et al. 2002. “Water is an economic good: How to use prices to promote equity, efficiency, and sustainability” p1-17

*Assignment DUE:*  
- 5-min quiz at the beginning class

**Session 16 (5/25): Economics of WASH – Private sector participation**

*Reading:*  

*Assignment:*  
- 5-min quiz at the beginning class
Week 9:

Session 17 (5/30): The Human Right to Water

Reading:

Graduates also read:

Assignment DUE:
- 5-min quiz at the beginning class

Session 18 (6/1): The Human Right to Sanitation

Reading:
- Bartram et al., 2012. “Commentary on community-led total sanitation and human rights: should the right to community-wide health be won at the cost of individual rights?” p 499–502.

Assignment DUE:
- 5-min quiz at the beginning class

Week 10:

Session 19 (6/6): Discussion of Policy Proposal

Reading:
- No Reading

Assignment DUE:
- Undergrads submit Reading Response 2, Grads submit Reading Response 3

Session 20 (6/8): What Does the Future Hold for WASH?

Finals Week (6/12-16): Turn in Policy Proposal by the end of the finals time slot 8:00am Monday, June 12