College of Public Health & Health Professions

PHC 7935

Critical Thinking in Environmental and Global Health

Spring 2013, 1 Credit Hour

#### Instructor Information

Rick Rheingans, PhD

College of Public Health & Health Professions

101 S. Newell Dr, Suite 2150A

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Office Hours: Monday 12:40-3:40 HPNP 2148 (confirm via email in advance)

 Tuesday 1:00 – 2:00 Grinter 472 (confirm via email in advance)

 Friday 10:00 – 2:00 Grinter 472 (confirm via email in advance)

**Time**

 Monday 12:45-1:35

**Location**

TBA

**Course Description**

In the current globally connected context, environmental health issues are diverse and rapidly changing. These threats come from infectious and chemical agents, or combinations of them. Environmental health researchers and professionals need to have an understand on the range of problems, the growing set of methods used to research them, and most importantly how to identify critical questions and appropriate empirical methods to address them. This course is designed to provide students with the critical thinking and integrative skills necessary to understand contemporary environmental health problems, critically understand the existing literature, develop research and assessment questions and identify appropriate methodological tools to address the questions. Students are exposed to a broad range of environmental health problems and challenges including traditional and emerging chemical and infectious agents, as well as problems that include interactions between different hazard types. The course is offered as a weekly seminar that revolves around a focal reading, additional background reading and discussion. To the extent possible, other departmental researchers and faculty who are actively involved in related work. Each student will be expected to actively participate in all discussions and to lead a portion of one class discussion.

**Course Prerequisites**

PHC6313 Environmental Health Concepts in Public Health, and

PHC6702 Exposure Measurement and Assessment

Or permission of instructor

**Course Objectives and/or Goals**

Upon completion of this course, students will be able to:

1. Critically discuss environmental health research studies
2. Summarize and integrate scientific literature around specific environmental health issues
3. Lead discussions of environmental health issues that integrate multiple disciplinary perspectives
4. Develop critical research questions and potential empirical strategies for addressing them using multiple environmental health methods

Specific learning objectives for each seminar session will be developed in collaboration with the instructors and student leaders for that session and posted on the course Web site.

**Content**

The course is not intended to be exhaustive in its coverage of methods or environmental health problems. Instead, topics are selected based on the ways in which different system components interact and how new or multiple methods can be employed to answer

* Environmental processes and exposure
* Spatial analysis and modeling
* Transmission modeling
* Vector-borne disease dynamics
* Social and economic determinants in environmental health
* Molecular methods and understanding system dynamics
* Human-animal interactions and health implications
* Chemical and infectious hazards and interactions

In addition to these content and thematic areas the seminar also develop professional skills through target activities and discussion relating to:

* Reviewing studies
* Conducting literature reviews
* Leading group and class discussions
* Ethical and human subject protection considerations
* Protocol design

#### Course Materials

Required text: There is no required textbook for this class

Appropriate readings for seminar sessions will be announced prior to the session. Readings will include published literature and online resources recommended by the scheduled speaker.

**Course Requirements**

 To receive a grade for this course, students must meet the following requirements:

* Attend all required seminar sessions
* Actively participate in each class session
* Lead a class discussion session and prepare a class plan
* Develop 3 weekly ‘critical discussion questions’ based on the required seminar reading
* For 4 assigned weeks, develop a short (1 page) description of an empirical strategy for answering a critical follow up question to that week’s required reading
* Develop an annotated bibliographic review on a single topic, based on 10 studies. The assignment includes a summary of each article (maximum 1 page double spaced) and short synthesizing essay (4-5 pages double-spaced).

**Schedule**

During each of the first weekly sections, class time will be devoted to discussing the integrated issues and to developing discussions questions that could be used to guide interdisciplinary teaching on that topic.

Jan 9 – Introduction – Social dimensions of exposure

Ashe, K. (2012). "Elevated mercury concentrations in humans of Madre de Dios, Peru." PLoS One **7**(3): e33305.

Jan 23 – Integrated approaches – Chemical and non-chemical exposures

Turyk ME, Bhavsar SP, Bowerman W, Boysen E, Clark M, Diamond M, Mergler D, Pantazopoulos P, Schantz S, Carpenter DO. 2012. [Risks and benefits of consumption of great lakes fish.](http://www.ncbi.nlm.nih.gov/pubmed/21947562) Environ Health Perspect. 2012 Jan;120(1):11-8. Epub 2011 Sep 23.

 Weekly questions due

Jan 30 – Human and animal health

Pulliam, J. R., J. H. Epstein, et al. (2012). "Agricultural intensification, priming for persistence and the emergence of Nipah virus: a lethal bat-borne zoonosis." J R Soc Interface **9**(66): 89-101.

 Weekly questions due

Feb 6 – Integrating across scale – molecular to landscape interactions

Ge, E., R. Haining, et al. (2012). "Using knowledge fusion to analyze avian influenza H5N1 in East and Southeast Asia." PLoS One **7**(5): e29617.

Empirical approaches assignment due

Weekly questions due

Feb 13 – Spatial dimensions and disease transmission

Bharti, N., H. Broutin, et al. (2012). "Spatial dynamics of meningococcal meningitis in Niger: observed patterns in comparison with measles." Epidemiol Infect **140**(8): 1356-1365.

 Weekly questions due

Empirical approaches assignment due

Feb 20 – Transmission modeling

Readings TBA

 Weekly questions due

 Empirical approaches assignment due

Feb 27 – Vector-borne diseases

Hu, W., A. Clements, et al. (2012). "Spatial patterns and socioecological drivers of dengue fever transmission in Queensland, Australia." Environ Health Perspect **120**(2): 260-266.

 Weekly questions due

Mar 12 – Student led discussion (based on research topics)

Readings TBA

 Weekly questions due

Empirical approaches assignment due

Mar 19 – Student led discussion (based on research topics)

Readings TBA

 Weekly questions due

Mar 26 – Student led discussion (based on research topics)

Readings TBA

 Weekly questions due

Apr 2– Student led discussion (based on research topics)

 Weekly questions due

Apr 9 – Student led discussion (based on research topics)

 Weekly questions due

 Annotated Bibliography topic and article list due

Apr 16 – Student led discussion (based on research topics)

 Weekly questions due

Apr 23 – Student led discussion (based on research topics)

 Final Annotated Bibliography due

**Course Evaluation/Grading**

The course uses the standard letter grade format of the University of Florida. In order to receive a grade for the course, students ***MUST*** meet all requirements identified above. A letter grade is derived from participation in 16 contact hours of seminars (including all required seminars), weekly participation (10%), 12 weekly questions (25%), 4 extended study approach descriptions (20%), leading of one class discussion (20%), and annotated bibliography (25%).

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| **Percentage or points earned in class** | **93%-100%** | **90%-92%** | **87%-89%** | **83%-86%** | **80%-82%** | **77%-79%** | **73%-76%** | **70%-72%** | **67%-69%** | **63%-66%** | **60%-62%** | **Below 60%** |
| **Letter Grade equivalent** | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | E |

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| **Letter****Grade** | **A** | **A-** | **B+** | **B** | **B-** | **C+** | **C** | **C-** | **D+** | **D** | **D-** | **E** | **WF** | **I** | **NG** | **S-U** |
| **Grade****Points** | 4.0 | 3.67 | 3.33 | 3.0 | 2.67 | 2.33 | 2.0 | 1.67 | 1.33 | 1.0 | 0.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar’s Grade Policy regulations at <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

**Academic Integrity/Honesty Statement**

Students are expected to act in accordance with the University of Florida Honor Code, which recognizes that academic honesty and integrity are fundamental values of the University community. Cheating or plagiarism in any form is not acceptable.

**Behavioral Expectations**

* Students are expected to behave professionally throughout his course. Examples of professional behavior include:
* Completing required reading PRIOR to class
* Participating actively in the discussion of the topic after the presentation
* Be on time and stay until class is dismissed

#### Attendance Policy

Attendance is mandatory.

**Accommodations for Students with Disabilities**

To obtain academic accommodations, first register with the Dean of Students’ Office. The Dean of Students’ Office will provide documentation to be given to the course instructor at the time you request the accommodation. The College is committed to providing reasonable accommodations to assist students’ coursework.

#### Counseling and Student Health

Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the UF Counseling & Wellness Center, 352-392-1575. Visit their web site for more information: <http://www.counseling.ufl.edu/>.

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: [www.health.ufl.edu/shcc](http://www.health.ufl.edu/shcc)

Crisis intervention is always available 24/7 from:

Alachua County Crisis Center: (352) 264-6789.

http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx

BUT – *Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance*.

References

Ashe, K. (2012). "Elevated mercury concentrations in humans of Madre de Dios, Peru." PLoS One **7**(3): e33305.

Bharti, N., H. Broutin, et al. (2012). "Spatial dynamics of meningococcal meningitis in Niger: observed patterns in comparison with measles." Epidemiol Infect **140**(8): 1356-1365.

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