

## **ENV H 490 and 590: One Health: Human and Animal Health in a Changing Environment**

Spring Quarter 2016

day/time: MW 9:00-10:20      Room: RR 134

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**OFFICE HOURS:**      Thursdays, 4:00-5:00

### **COURSE DESCRIPTION:**

One Health is a transdisciplinary systems concept connecting human, animal, and environmental health. Through a case based approach, the course will explore integrated approaches to assessment and control of a number of health issues at the human-animal-environment interface. These issues include emerging zoonotic (transmitted between animals and humans) infectious diseases, animals as sentinels of environmental hazards, health aspects of the human-animal bond, and the comparison of spontaneous diseases between humans and animals (human-animal medicine).

### **LEARNING OBJECTIVES (joint 439 and 539):**

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

1. Critically review the scientific literature on a topic related to One Health, and be able to discuss and summarize either the human health, animal health, or environmental health aspects of the topic.
2. Systematically research assigned topics using electronic resources, as a member of an interdisciplinary problem solving group, to help the group explore human health, animal health, and environmental health aspects of One Health topics.
3. Identify at least four major zoonotic diseases and explain the human, animal, and environmental aspects of these diseases.
4. Describe at least two examples of animals serving as sentinels for human environmental health hazards, and why this phenomenon occurs. Be able to describe the comparative presentation of at least two diseases across at least 3 species (including humans)
5. Identify 4 health effects associated with the human-animal bond and how this can be used in clinical settings.
6. Be able to describe the comparative presentation of at least two diseases across at least 3 species (including humans)
7. Identify, for at least 3 different One Health scenarios, the relative roles of human health providers,

veterinarians, and environmental health professionals.

**GRADUATE LEVEL COURSE OBJECTIVES (539 only):**

1. Serve as a team leader for case discussion sessions, helping the group explore the separate perspectives of either human health, animal health, or environmental health professionals.
2. Be able to lead a group in an interdisciplinary discussion about a disease/health issue that incorporates human, animal, and environmental health perspectives. From that discussion be able to formulate and create a written summary with recommendations for an integrated One Health strategy for a) assessing a disease situation with human health, animal health, and environmental aspects and b) managing such a situation, including how data would be used to plan and track such an integrated assessment and intervention.

**TEXTS AND REFERENCES:**

The primary text for this course will be:

Human-Animal Medicine: Clinical Approaches to Zoonoses, Toxicants and Other Shared Health Risks by Peter M. Rabinowitz and Lisa A. Conti. Saunders: Elsevier.

This text book will be on reserve at the Health Sciences Library and at the COHR suite, as well as for purchase through the university book store or online. An electronic version is available through the Health Sciences Library. Additional reading assignments and course materials will be provided as handouts or are available on the web.

The following texts are also recommended references for this course, and will also be placed on reserve, and available at the COHR suite:

**Books**

- One Health: People, Animals, and the Environment. ASM Press
- Confronting Emerging Zoonoses: The One Health Paradigm. Yamada, A., et al. (Eds) Springer
- Zoobiquity: The Astonishing Connection Between Human and Animal Health. Barbara Natterson- Horowitz, B, Bowers K. Vintage Press.
- One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases. Mackenzie, J.S., et al (Eds.).Springer

**Journals (available online through UW libraries)-**

- One Health Journal
- International Journal of One Health
- Emerging Infectious Diseases
- Environmental Health Perspectives
- EcoHealth

- PLoS One

**CLASS PARTICIPATION:**

Class sessions will include lectures and group problem-solving sessions. Although attendance in lectures is not expressly required, students will be encouraged and expected to participate in classroom discussions during lecture sessions and group problem solving sessions. Students will not have the opportunity to earn class participation credit for course periods during which they are absent.

**COURSE FORMAT:**

The course will be divided into 5 modules: Introduction to One Health, Zoonoses, Animals as Sentinels, Human-Animal Bond, and Human Animal Medicine.

Lectures: Each Monday session will include an interactive lectures, providing background information on the human, animal, and environmental health aspects of different diseases. The case of the week will be introduced, with some discussion in small groups. Afterwards there will be a second lecture providing important context and information tools for the case study/group problem solving session of the week.

**Monday Schedule:**

9:00-9:05: Recap of lessons learned from case discussed previous week

9:05-9:30 Didactic lecture

9:30-9:55 Introduce case study/problem of the week

9:55-10:20 Lecture going over specific learning points of the case study for Wednesday.

Group problem-solving sessions: A central feature of the course will be problem solving sessions based on a case study framework. In general these will consist of a case of disease in either humans, animals, or both, that need to be discussed from a One Health perspective.

Small groups: The case studies will be discussed by the class in small groups consisting of approximately 8 students. The number of teams will be determined by the overall class enrollment. Each group will include at least one graduate student. Each group will be subdivided into 3 subgroups of either 2-3 students.

Structure of the sessions: On each Monday, there will be a brief (approx. 20 minute) introduction to the week's case, allowing groups to work on developing a strategy for problem solving.

On Wednesday, the groups will meet separately to discuss the case. The subgroups will be assigned to discuss either the human, animal, or environmental aspects of the case. There will be rotation of team assignments so that each team has the opportunity to research and present from each of the three perspectives (human, animal, and environmental health) in a group problem-solving session.

9:00- 9:15: discussion of human aspect of case (human health subgroup)

9:15-9:30 : discussion of animal aspect of case (animal health subgroup)

9:30-9:45: discussion of environmental aspect of case (environmental health subgroup).

(Note: answers to questions due at end of class)

9:45-10:20: with grad student leading, group comes up with a One Health strategy for resolving the problem and tracking the impact of the intervention (2 paragraphs, due by Friday of that week)

Grading of small group sessions:

Each subgroup will be graded on answers to questions for their specialty

The Grad student will be graded on leadership and grasp of problem

The entire small group graded on the one health strategy

Field trips: Two optional fieldtrips are planned, one to the animal health clinic of the Woodland Park Zoo, and one to the medical unit of the Seattle Aquarium. These will take place outside of scheduled class time.

See the last page of syllabus for the class schedule.

**GRADING OPPORTUNITIES:**

This course is offered on both a graded (A section) and credit/no credit (B section) basis. The expected student contribution to the course is identical whichever grading status is chosen.

For the sake of this class, letter and numerical grades will typically be distributed according to the university grading scale between the following standards:

<p><b>3.9-4.0</b> Excellent and exceptional work</p> <p><b>3.7-3.8</b> Strong work</p> <p><b>3.4-3.6</b> Competent and sound work (default category)</p> <p><b>3.2-3.3</b> Adequate work, although some weaknesses are evident</p> <p><b>2.9-3.1</b> Borderline work</p> <p><b>2.7-2.8</b> Deficient but acceptable work</p> <p><b>&lt;2.7</b> Unacceptable work</p>
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**Undergraduate Level (439) expectations:**

Class Participation in lectures (10%):

Students may earn class participation credits by participating in classroom discussions (asking and answering questions) and answering extra-credit questions (via email).

Participation in group problem solving (50%- see following breakdown):

Students will be judged on their degree and excellence of participation in group problem solving sessions in the following way:

- 1) 439 Students will be evaluated by the course instructor in terms of the quality of their small group writeups for the weekly group problem solving sessions. (25% of overall grade).
- 2) 439 students will be evaluated on the basis of their participation in group discussions. (10% of overall grade)
- 3) Students will be evaluated by the course instructor in terms of the quality of their groups overall weekly written One Health report (10% of overall grade)
- 4) Peer evaluation will be performed by small group members (5% of overall grade)

Midterm Exam (15%):

The midterm exam will be in class as per the schedule below. It will consist primarily of short answer questions, but may include multiple choice and fill-in the blank questions as well. Exam will be open book and open note.

Final Exam (25%):

Final exam will be a take home essay, consisting of both short answers and a longer essay 8-10 pages. The final exam will be comprehensive.

### **Graduate Level (539) work expectations:**

#### Class Participation in lectures (10%):

Students will be judged on their degree of leadership and participation in discussions during lecture presentations, with the following rubric:

Excellent (4.0): consistent class preparation and attendance and active leadership in class discussions

Adequate (3.0): regular class attendance and frequent participation in discussions

Borderline (2.5): inconsistent attendance, less active participation in discussions

Unacceptable: minimal preparation and attendance, minimal participation in discussions

#### Participation and leadership in group problem solving (50%):

Graduate students will be judged on their degree and excellence of participation in group problem in the following way:

- 1) Graduate students will be evaluated by the course instructor on their weekly write-ups of the problem solving sessions (30% of overall grade)
- 2) Team members will complete evaluations on the performance of team leaders including leadership and contributions during problem solving sessions (15% of overall grade)
- 3) Peer evaluation will be performed by other class members for each team presenting. (5% of overall grade)

#### Midterm Exam (15%):

The take home midterm exam will be handed out in class as per the schedule below. It will consist primarily of short answer questions, but may include multiple choice and fill-in the blank questions as well. Exam will be open book and open note.

#### Final Exam (25%):

Final exam will be given in class during a scheduled session. The final exam will be comprehensive and will consist of short answer, multiple choice, true/false-explain, and problem solving questions. Exam will be open book and open note.

### **ACADEMIC ACCOMODATIONS:**

To request academic accommodations due to disability, please contact Disabled Student Services, 448 Schmitz, (206) 543-8924 (V/TTY). If you have a letter from Disabled Student Services indicating that you have a disability that requires academic accommodations, please present the letter to me so we can discuss the accommodations you might need in this class.

### **COURSE RULES**

1. Come to class; please let me know ahead of time if you cannot make it.
2. Arrive on time

3. Work effectively with your student team to prepare group problem-solving presentations.
4. Come to lectures prepared (keep up with reading)
5. Be courteous (No newspapers, audible cell phones, PDAs, beepers)
6. Food and drinks are welcome (but keep it quiet)
7. Refrain from unnecessary talking, but ASK QUESTIONS
8. Let me know how I am doing (if I am moving too fast, not being clear, or otherwise not getting the message across, I need to know.)

Date	Day	Lecture Topic	Lecturer	Homework
28-Mar	M	Introduction to One Health, course logistics	Rabinowitz	
30-Mar	W	Problem solving exercise: One Health Dairy	Rabinowitz	Required reading
4-Apr	M	Introduction: History (Ecohealth, etc.), Barriers to One Health and One Health Practice Models, Intro to zoonoses (MRSA)	Rabinowitz	Required reading
6-Apr	W	Problem solving sessions: MRSA case	Rabinowitz	Required reading
11-Apr	M	Zoonoses:, parasites	Fowler	Team preparation
13-Apr	W	Zoonoses: Problem (AAVMC) BAYliascaris	Rabinowitz	Required reading
18-Apr	M	Zoonoses: Bacteria, vectors	Rabinowitz, Dykstra	Team preparation
20-Apr	W	Zoonoses: Problem solving : AAVMC case study Chagas	Rabinowitz	Required reading
25-Apr	M	Zoonoses: viruses, pandemic threats	Rabinowitz	Required reading
27-Apr	W	Zoonoses: Group problem-solving session: Conservation medicine	Rabinowitz	Team preparation
2-May	M	Animal Sentinels- MIDTERM in class	Rabinowitz	Required reading
4-May	W	Zoonoses AAVMC Q fever outbreak	Rabinowitz	Required reading- MIDTERM DUE
9-May	M	Sentinels, Comp med- dermatology	Rabinowitz, Gardner	Required reading
11-May	W	Comp med: lead case	Rabinowitz	Required reading
16-May	M	Human Animal relationships: Anthropology social science	Rabinowitz, other	Required reading
18-May	W	Human Animal Medicine: anthro case	Rabinowitz	Required reading
23-May	M	Human Animal bond	Rabinowitz, Iritani	
25-May	W	Human-Animal Relationships: Animal Assisted Therapies- problem AAVMC (Vet and his dog)	Rabinowitz	Required reading
30-May	M	Memorial Day no class	Rabinowitz	Team preparation
1-June	W	Pet partners/ demonstration	Rabinowitz	Required reading
6-Jun	M	Exam week- finals due	Rabinowitz	
TBD			Rabinowitz	

