

College of Public Health & Health Professions
PHC 6515 Section 706B
Introduction to Entomology, Zoonotic Diseases, and Food Safety
Summer 2015, 3 Credit Hours

Instructor Information

Course director: Bernard A. Okech, MS, PhD
Department of Environmental and Global Health
College of Public Health & Health Professions
101 S. Newell Dr, Suite 2150A
Gainesville Florida 32610
Phone: (352) 273-5254
Email: bokech@php.ufl.edu

Co-instructor: Salah Uddin Khan, DVM, MVPH
Department of Environmental and Global Health
College of Public Health & Health Professions
Emerging Pathogens Institute
2055 Mowry Road
Gainesville, FL 32611
Phone: (352) 293-9649
Email: m.khan@ufl.edu

Office hours

Please send an email to instructor(s) to arrange a meeting via phone, Skype or in person.

Course Description

Vectorborne and zoonotic diseases pose a major public health burden worldwide. Many of these diseases are also transmitted via foodborne route, leading to food safety concerns. These diseases often spill to human because of the complex interaction between man, animals, insects, plants, and the environment. Developing an effective intervention requires a broad understanding of the transmission dynamics and disease-specific contexts. Since many of these diseases are emerging or re-emerging in nature, there is a global need of a workforce with adequate knowledge on these issues.

We designed this course to introduce public health students to basic concepts in medical entomology, zoonotic diseases, and the diseases associated with food safety. Students will learn about the epidemiology of the infectious zoonoses, vector biology, management and control aspects, and protecting the food supply. This course will put particular focus on the principles of vector born, zoonotic disease, and food-borne disease surveillance, prevention and control approaches. Lectures will be complemented by in-class discussion.

Course Pre-requisites

One of the following courses (or equivalent after consulting with the instructor for eligibility):

- General Microbiology
- Public Health Biology
- Principles of Infectious Diseases
- Epidemiology of Infectious Diseases
- Principles of Epidemiology

Instructional Methods: This course will be delivered online via Canvas.

Course Objectives and/or Goals

After completing this course, the student should be able to:

- Have a general understanding of the global disease burden related to vector-borne, zoonotic disease, and food safety issues.
- Be able to describe the major vector borne and zoonotic diseases of public health importance, their epidemiology, and current prevention and control approaches.
- Have a general understanding of arthropod vectors and associated diseases
- Have a general understanding of surveillance methods for mosquitoes, flies, and ticks.
- Describe the basic concepts of management and control of vector-borne diseases.
- Be familiar with the current methods for food-borne pathogen surveillances.
- Be able to describe the major pathogens associated with foodborne illnesses, their impact, and current prevention and control approaches.

Outline of lectures

Week	Title	Instructor	Remarks
Week 1 12 May 2015	Lecture 1: Welcome and introduction to the course Lecture 2: Overview of vector-borne and zoonotic diseases and foodborne illnesses	Okech Salah Uddin	
Week 2 19 May 2015	Lecture 3: Approaches in study design Lecture 4: Approaches in Measuring Disease, Risks, and Health Outcomes	Salah Uddin	Discussion, assignment
Week 3 27 May 2015	Lecture 5: Zoonotic diseases of public health importance: - Part I: Prions and viral diseases - Part II: Bacterial and rickettsial diseases - Part III: Fungal and Parasitic diseases	Salah Uddin	Discussion, assignment
Week 4 2 June 2015	Lecture 7: Global overview of: - Part I: Vector borne diseases (zoonoses) - Part II: Vector borne diseases (non- zoonoses)	Okech Okech	Discussion, assignment
Week 5 9 June 2015	Lecture 8: Vectors of animal and human diseases aspect about biology, ecology and behavior that influences disease transmission	Okech	Exam 1
Week 6	Lecture 9: Surveillance methods & identification	Okech	Discussion,

16 June 2015	resources Lecture 10: Overview of the vector control approaches		assignment
Week 7	Summer break!		
Week 8 30 June 2015	Lecture 11: Introduction to tick biology and their life cycles Lecture 12: Overview of tick-borne diseases Lecture 13: Surveillance methods for ticks Lecture 14: Current methods for tick control	Okech/Lord/Cynthia	Discussion, assignment
Week 9 7 July 2015	- In class discussion and review of the previous sessions	Okech/Salah Uddin	Exam 2
Week 10 14 July 2015	Zoonoses of current concern: Lecture 15: Zoonoses of concern: North American perspective Lecture 16: Zoonotic diseases and wildlife Lecture 17: Ebola Virus Disease outbreaks in West Africa and Public Health: An One Health Perspective	Carina Blackmore, TBD Salah Uddin	Discussion, assignment
Week 11 21 July 2015	Lecture 18: The environment and zoonotic diseases Lecture 19: Aquaculture, zoonotic disease, and food safety Lecture 20: Principles on foodborne disease surveillances, their preventions, and control	Song Liang Roy Young Arie Havelaar	Discussion, assignment
Week 12 21 July 2015	Lecture 21: Advances in understanding epidemiology of uncommon zoonoses causing foodborne illnesses : Hendra virus, Nipah virus, foot & mouth disease, <i>Streptococcus suis</i> Lecture 22: Other zoonotic diseases among avian species and food safety (salmonellosis, chlamydiosis, colibacillosis, campylobacteriosis, etc.)	Salah Uddin Salah Uddin	Discussion, assignment
Week 13 28 July 2015	- Review and examination	Okech/Salah Uddin	Exam 3

Course Materials

Suggested text:

Rolf Bauerfeind, Justus Liebig, Alexander Von Graevenitz. Zoonoses: Infectious Diseases Transmissible from Animals to Humans, 4th Edition. ASM Press, 2015. ISBN: 1555819257

Michael R. Conover and Rosanna M. Vail. *Human Diseases From Wildlife*. CRC press. 2014. ISBN 9781466562158 (eBook) or ISBN 9781466562141 (hard copy)

Gary Mullen and Lance Durden. Medical and Veterinary Entomology, 2nd edition. 2009. Academic Press. ISBN 9780080919690 (eBook) or ISBN 9780123725004 (hard copy)

J. Glenn Morris Jr., Morris Potter. Editors. Foodborne Infections and Intoxications, Fourth Edition. 2013. Academic Press. ISBN 9780123914767 (eBook) or ISBN 9780124160415 (hard copy)

Journal Articles:

Journal articles assigned and discussed in class.

Course Expectations/Evaluation/Grading

What is expected of you: You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the discussion sessions. If you are not prepared for the discussion sessions, you may struggle to keep pace with the activities occurring in the course, and it is unlikely that you will reach the higher learning goals of the course. Your participation fosters a rich course experience for you and your peers that facilitate overall mastery of the course objectives.

Evaluation: The course will be conducted through online lectures and online discussions. The course evaluation process includes online participation, review of assigned literature and posting in the discussion forum, and three 30-minute, open book online examinations.

Grading:

The grading will include

1) Participation in 8 discussion forum (20%): Specific instructions about the online discussion will be provided in each of the discussion forums. The topics of the discussions will be pre-defined and based on the issues covered in the lectures from the preceding week(s).

2) Assignments (50%): Students are required to prepare 8 written assignments, which will be provided at the end of each lecture.. Each of the assignments should at least be one and a half pages, double spaced, font 12 times new roman, with at least three paragraphs, a minimum of 5 references covering the background, currently available findings, and summarizing the evidences supporting your conclusion.

3) Online examinations (30%): There will be three 30-minute, open book, open notes, online examinations covering lectures materials from the preceding classes.

Grading table:

Required Task	Number of tasks	Points	% of final grade
Assignments	8	400	50
Online discussions	8	160	20
Class exams	3	300	30
	Total	860	100

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

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>

Policy Related to Make-up Exam or Other Work

Students are expected to submit all assignments and to complete all other work on time. If timely submissions cannot occur, students should contact the course instructor to discuss options for completing the outstanding work. The instructor is not required to accept late submissions, regardless of when s/he is consulted. Students who do not contact the instructor regarding late work should expect to receive no credit for the assignment/exam.

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Statement Related to Accommodations for Students with Disabilities

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must first register with the Dean of Students Office (<http://www.dso.ufl.edu/>). The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their 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 University of Florida Counseling Center, 352-392-1575, or Student Mental Health Services, 352-392-1171. Visit their web sites for more information: <http://www.counsel.ufl.edu/> or <http://www.health.ufl.edu/shcc/smhs/index.htm#urgent>

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

Crisis intervention is always available 24/7 from:
Alachua County Crisis Center: (352) 264-6789.

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.