College of Public Health & Health Professions

PHC 6515

An Introduction to Entomology, Zoonotic Diseases, and Food Safety

Spring 2013, 3 Credit Hours

Saturday, May 18, 8AM-12PM, HPNP G-103

Monday, May 20, 8AM- 5 PM, BSB Wet/Dry Lab (BG-3)

Tuesday, May 21, 8AM- 5 PM, Austin Cary Memorial Forest

Wednesday, May 22, 8AM- 5 PM, HPNP G-101

Thursday, May 23, 8AM- 5 PM, HPNP G-101

Friday, May 24, 8AM- 5 PM, HPNP G-101

#### Instructor Information

Course director: Gregory C. Gray, MD, MPH

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Office hours arranged

Other instructors: Various

#### Course Description

This course will introduce public health students to entomology, zoonotic diseases, and principals of modern food safety. Students will learn methods for conducting studies of mosquitoes and ticks, controlling zoonotic diseases, and protecting food supply. A special focus will be upon modern food safety techniques in meat, dairy and produce production. Lectures will be complemented with considerable field work.

**Course Pre-requisites**

One of the following courses (or equivalent):

General Microbiology

Principles of Infectious Diseases

Epidemiology of Infectious Diseases

#### Course Objectives and/or Goals

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

* Have a fundamental understanding of methods for mosquito collection, identification, and control;
* Be familiar with methods for tick collection, identification, and control;
* Have an appreciation for zoonotic disease prevention and control in the agricultural industry;
* Be familiar with methods for monitoring food-borne pathogens.

#### Course Materials

#### Required text: Krauss H, Weber A, Appel M, Enders B, Isenberg HD, Schiefer HG, Slenczka W, Von Graevenitz A, Zahner H. editors. *Zoonoses*. *Infectious Diseases Transmissible from Animals to Humans, 3rd edition.* ASM Press, 2003, ISBN:1555812368

#### Course Requirements/Evaluation/Grading

Students will be evaluated by their class participation (33%) and a 90-minute, open book, open notes, examination (33%), and a 7-10 page term paper on a single zoonotic disease problems the student’s home country (33%) due by mid July. To earn a B for class participation, students should fully participate and attend every session. To earn an A in classroom participation, students must attend each session and demonstrate that they prepared for lectures/fieldtrips beforehand (through reading assigned text and interacting with the lecturers).

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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>

#### Topical Outline

| Day/Lecture | Title | Lecturer | | Readings (pages) |
| --- | --- | --- | --- | --- |
| Saturday 8AM  HPNP G-103 | Welcome, course introduction (10 min) |  | |  |
| Saturday 8:10-9AM | One Health | Gray | |  |
| Saturday 9-11 | Zoonotic influenza and occupational risk | Gray | | 133-139 |
| Saturday 11-12 | Other zoonotic diseases among avian species and food safety (salmonellosis, chlamydiosis, colibacillosis, campylobcteriosis, etc.) | Barr | | 188-89, 191-193, 196-200, 234-237 |
| **Mosquito and Tick Borne Diseases (Lectures covering basic biology, life cycle, habitats, surveillance methods)** | | | | |
| Monday  8.00AM Vet Med Basic Science Bldg Room BG-3 | Introduction to lectures | Okech | | xi-xiv, 49-51, 4-14;27-31;46-48 |
| 8:15 – 9:00AM | Mosquito biology and anatomy | Okech | |  |
| 9:00 - 9:45AM | Mosquito-borne diseases/ | Okech | |  |
| 9:45 - 10:30AM | Houseflies: Diseases and their control | LCDR Doud | |  |
| 10:30 - 11:00AM | Mosquito surveillance methods & identification resources | CDR Obenauer, LCDR Stoops  LT Wright | |  |
| 11:00 - 12:00PM | **Lab session**: Mosquito identification and dissection | Okech, Maha | |  |
| 12:00 - 1:00PM | Lunch break |  | |  |
| 1:00 - 1:30PM | Tick biology and life cycles | Lord/Allan | |  |
| 1:30 - 2:00PM | Tick-borne diseases | Lord/Allan | |  |
| 2:00 - 2:30PM | Surveillance methods for ticks | Lord/Allan | |  |
| 2:30 - 3:00PM | Methods for tick control | Lord/Allan | |  |
| 3:00P - 4:30PM | Lab session:Tick identification/dissection | Lord, Allan | |  |
| **Mosquito and Tick Field Work** | | | | |
| Tuesday  7:15AM - 7:45AM | Bus to Austin Cary Memorial Learning Center, Waldo Road (takes about 30min to get there in traffic) All students to wear long sleeve shirts and trousers, light colored clothing better. It may be muddy. | | | |
| 8:00AM - 8:30Am | Adult mosquito trapping techniques, mosquito trap set up and collection of traps | | Okech, LCDR Stoops; LT Wright,  LT McDonough, LT Harwood, HM1 Francona, HM2 Denson |  |
| 8:30AM - 9:00AM | Dipping and collection techniques for mosquito larvae | | Okech, LCDR Stoops,  HM2 Denson, |  |
| 9:00AM - 9.30AM | Chemical control of mosquitoes and ticks - equipment overview | | Mr. Vince Smith, Mr. Ray Platt,  EN1 Anderson |  |
| 9:30AM -10:00AM | Mosquito control - ULV and Space spray demonstrations | | Mr. Vince Smith, Mr. Ray Platt,  EN1 Anderson |  |
| 10:00AM -11:00AM | Tick control - Broadcast insecticide application demonstrations | | Mr. Vince Smith, Mr. Ray Platt,  EN1 Anderson |  |
| 11:00AM - 1:00PM | Preliminary identification of wild caught mosquitoes (larvae, adults) | | Okech, LCDR Stoops, CDR Obenauer, LT Wright, LT McDonough, LT Harwood, HM1 Francona, HM2 Denson |  |
| 1:00 PM - 2:00PM | Lunch break | |  |  |
| 2:00PM - 3:00PM | Tick sampling methods: tick drag, CO2 bait | | Lord/Allan |  |
| 3:00PM - 4:00PM | Preliminary ID of ticks | | Lord/Allan |  |
| **Zoonotic Diseases & Food Safety I** | | | |  |
| Wednesday 8AM | Introduction to meat production | | Prof Chad Carr | Meat laboratory |
| Wednesday 9-12AM | [Nettles Sausage Company](http://www.manta.com/c/mmf088k/nettles-sausage-co)  190 SW County Road 240  Lake City, FL 32025-3607 | | Prof Chad Carr | Please remember do not wear open-toed shoes, high heels, and jewelry |
|  | Lunch on the bus ride back to UF | |  |  |
| Wednesday 1-2PM  HPNP G-101 | Diseases due to bartenella species | | Gray | 176-179 |
| Wednesday 2-3PM  HPNP G-101 | Zoonoses of concern from Florida’s State Veterinarian | | Blackmore |  |
| Wednesday 3-4PM  HPNP G-101 | Aquaculture and aquatic zoonoses | | Waltzek |  |
| Wednesday 4-5PM  HPNP G-101 | Reducing the risk of zoonotic disease transmission in the dairy industry. An outbreak of Brucella melitensis in humans and goats. | | Hernandez | 203-5, 185-9, 205-7, 229-231, 234-6, 278-80 |
| **Zoonotic Diseases & Food Safety II** | | | |  |
| Thursday 8:00AM | Bus leaves hotel at for Pilgrim’s Pride Corporation 19740 US90, Live Oak, FL 32060-8753, tel 386-362-2544 (modern poultry production; arrive 9AM) | | Gray |  |
| Thursday 10-12AM | Pilgrim’s Pride Corporation | | Host – Tara Martin QA Manager, Live Oak Facility  Cell 386-209-3842 |  |
|  | Lunch on the bus ride back to UF | |  |  |
| Thursday 1:30-2:30PM  HPNP G-101 | Zoonotic diseases and wildlife | | Isaza |  |
| Thursday 2:30-3:30PM  HPNP G-101 | Zoonotic infections associated with domestic pets (hookworm, toxoplasmosis, salmonellosis | | Krueger | 307-312, 362, 369 |
| Thursday 3:30-5:30PM  HPNP G-101 | Small group zoonotic disease exercise | | Gray |  |
| **Zoonotic Diseases & Food Safety III** | | | |  |
| Friday 7:30AM / | Bus to North Florida Holsteins 2740 West County Rd 232 Bell, FL 32619-7174, tel 352-463-7174 (modern dairy farm; arrive 10AM) 3522137013 gotmilk10@aol.com | | Gray |  |
| 9-11:30AM | North Florida Holsteins | | Host - David Temple (Diary Manager) |  |
|  | Lunch on the bus ride back to UF | |  |  |
| Friday 1-2PM  HPNP G-101 | Uncommon zoonoses: Hendra virus, Nipah virus, foot & mouth disease, *Streptococcus suis*. | | Rowland | 123-127; 141-143 |
| Friday 2-3PM  HPNP G-101 | Lyme disease & giardiasis | | Gray | 180-183; 280-282 |
| Friday 3-5PM  HPNP G-101 | Final exam (90 minutes, multiple choice, open notes) bring calculator | | Gray |  |

Statement of University’s Honesty Policy (cheating and use of copyrighted materials)

Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

#### Attendance Policy

Attendance is mandatory.

#### Policy Related to Make-up Exams or Other Work

***Attendance and Make-up Work*** *–* I expect you to attend and be prepared to participate in all class sessions. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis.

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#### 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](http://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*.