ENTO 210 Global Public Health Entomology (3 Credit Hours)

Fall 2013

Texas A&M University

Instructor: Dr. Michel A Slotman,
Assistant Professor
Department of Entomology
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Lecture: T/Th 2:20-3:35, Room 115 KLCT
Office Hours: Wednesday 12:00 pm - 1:00 pm
(or by appointment at another time)

Teaching Assistant: Kevin Deitz
Email: kcdeitz@tamu.edu

We will make all announcements regarding the course email via howdy or ecampus. Please make sure the email address you have on file in these systems is current.
Course Description: Arthropods affect the health and well-being of humans and other animals in a wide variety of ways. Most importantly, they transmit several of the most devastating infectious diseases affecting humans worldwide. This course provides an overview of the ways in which arthropods impact global public health and well-being, either directly or through the diseases they transmit. The course aims to provide a broad perspective, covering pertinent public health issues from a local to global scale. A historical perspective will be integrated throughout the course, and the impact of globalization, poverty and human actions on disease transmission by arthropods will be discussed. Attention will be given to the role of vector-borne diseases in the development of state-level, national and international public health infrastructure.

Course Learning Objectives:

After this course, students will be able to:

• Describe the life histories of arthropods of medical importance.
• Identify vector-host-pathogen relationships in arthropod-borne diseases
• Identify tactics and design strategies for vector control
• Evaluate impacts of vector-borne disease on socio-economic development in different world communities.
• Describe the role of vector-borne disease on human history and the development of public health infrastructure.
• Asses how human actions can impact vector-borne disease transmission

Prerequisites: None

Grading:

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<th>Grade</th>
<th>Percentage</th>
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<tr>
<td>A = 90-100</td>
<td>33.3 %</td>
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<td>B = 80-89</td>
<td>33.3 %</td>
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<td>C = 70-79</td>
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<td>D = 60-69</td>
<td>3 bonus points</td>
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<td>F &lt; 60</td>
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Midterm I Materials pertaining to lectures 1 - 9 33.3 %
Midterm II Materials pertaining to lectures 10 - 17 33.3 %
Final Exam All material covered during course 33.4 %
Weekly Quiz Materials covered since previous quiz 3 bonus points

A = 90-100, B = 80-89, C= 70-79, D = 60-69, F< 60
**Weekly Quizzes**

Each Thursday a 6 question multiple-choice quiz will be given at the end of class (starting the second week). The quiz covers the material presented since the previous quiz (usually the preceding Thursday and Tuesday lectures). The result of these quizzes can earn you up to 3 bonus points. These points are allocated proportionally to the number of questions you have answered correctly.

*There are no make-up quizzes*, but excused absences will be taken into account in calculating your average score.

**Grading Policy:** In order to assure fairness for all students in the course, my grading policy is to apply the same rules and criteria to each student in the course. This means that I cannot grant any requests for additional work for credit based on exceptional personal circumstances.

**Attendance Policy:** Attending classes will be the student’s responsibility, and although attendance is recommended, it is not required. However, please note that the vast majority of the materials covered on the exams will only be covered in class.

**Exam Make-up policy:** Make-up exams (not quizzes) are available to students who have a valid reason for an excused absence: [http://student-rules.tamu.edu/rule7.htm](http://student-rules.tamu.edu/rule7.htm), and who provide satisfactory evidence to the instructor to substantiate the reason for absence. Students must make the request for a make-up exam in writing to the instructor prior to the date of absence, if at all possible. Make-up exams are not available to students who do not have an excused absence.

**Americans with Disabilities Act (ADA) Policy Statement:** The ADA is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation required that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, located in Cain Hall or call 845-1637.

*“An Aggie does not lie, cheat, or steal or tolerate those who do.”*

This code of conduct pertains to such acts as cheating, fabrication, falsification, plagiarism, and complicity in academic dishonesty and the consequences of such acts. The Honor Council Rules and Procedures can be found on the web at [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor).
Lecture Schedule (Subject to change):

Lecture 1  Introduction to “Ento 210: Global Public Health Entomology”,
           Introduction to Arthropods Part I
Lecture 2  Introduction to Arthropods Part II
Lecture 3  Allergens and Poisons
Lecture 4  The Dynamics and Evolution of Vector-Borne Disease
Lecture 5  The Biology of Blood Feeding
Lecture 6  Mosquito Biology
Lecture 7  Mosquitoes and the Diseases They Transmit: Malaria I
Lecture 8  Mosquitoes and the Diseases They Transmit: Malaria II
Lecture 9  Mosquitoes and the Diseases They Transmit: Dengue Fever

Midterm 1  Thursday Feb 13rd 2014
Lecture 10 Mosquitoes and the Diseases They Transmit: Yellow Fever
Lecture 11 Mosquitoes and the Diseases They Transmit: West Nile and Other
               Encephalitic Viruses
Lecture 12 Mosquitoes and the Diseases They Transmit: Filariasis
Lecture 13 Blackflies and River Blindness
Lecture 14 TseTse Flies and Sleeping Sickness
Lecture 15 "The Kiss of Death" - Kissing Bugs and Chagas Disease
Lecture 16 Sandflies and Leishmaniasis
Lecture 17 The Tick-Borne Diseases

Midterm 2  Tuesday March 25th 2014
Lecture 18 Lice and Typhus
Lecture 19 “A Rat-a-Day Keeps the Plague Away”- Fleas and the Plague
Lecture 20 Minor” Nuisances –Other Blood Feeding Insects
Lecture 21 Flesh, Food, Filth and Flies
Lecture 22 Vector Control
Lecture 23  Poverty and Vector-Borne Disease
Lecture 24  Globalization,
Lecture 25  Climate Change and the Spread of Vector-Borne Disease +
A History of Vector-Borne Disease in the United States

Cumulative Final Exam: Wednesday May 7th, 1-3 pm

List of Required Readings
Currently, no textbook exists that adequately treats the material covered in this course. Therefore, the required readings for this course consist of articles selected from the primary and secondary literature. These readings are selected to provide background information and/or to highlight the broader themes of the course. All readings are made available on the eLearning website. Readings are assigned for the lecture that covers the corresponding topic.

Lecture 1  -
Lecture 2  Introduction to Insects, pages 1-19
Lecture 3  -


Lecture 15  **Chagas Disease: An impediment in achieving millennium development goals in Latin America** (2007) Paredes et al. BMC International Health and Human Rights 7:7 Pages 1-6


Lecture 24  **Chikungunya: No longer a third world disease** (2007) M. Enserink Science pages 1860-1861

Suggested background reading for students desiring more specific information on the biology of the vectors and parasites discussed in this course.

THESE BOOKS ARE NOT REQUIRED FOR THE COURSE

For those interested in obtaining more information (beyond what is required for class) on the biology of disease vectors can be found in:

Medical Entomology for Students, 4th edition,

Mike Service

Cambridge University Press 2008


List price: $60.00

More detailed information can be found in:

Medical and Veterinary Entomology, 2nd edition

Gary Mullen and Lance Durden

Academic Press 2009


List Price $99.95 (Amazon.com $70.35)