

**VECTORS & VECTOR-BORNE DISEASE  
BIOL-691 / BIOS-710 / BIOD-610  
SPRING 2018 COURSE SYLLABUS**

**COURSE INFORMATION**

**Day:** Wednesday      **Time:** 1:30 PM – 4:10 PM      **Credits:** 3

**Location:** Bull Run Hall, Room 247  
Science & Technology Campus      **Required Textbook:** None

**Reference Textbook:** Medical and Veterinary Entomology, Edited by Mullen and Durden  
ISBN 012510451-0

**INSTRUCTOR INFORMATION**

**Instructor:** Dr. Charles Bailey      **Phone:** 703-993-4265      **Email:** cbailey2@gmu.edu

**Office Information:** Biomedical Research Laboratory  
Science & Technology Campus      *Office hours by appointment only*

**COURSE DESCRIPTION**

Lectures will focus on the natural history, taxonomy and biology of arthropod vectors and the pathogens they transmit to both human and animal hosts. Emphasis will be placed on mosquitoes and arboviruses, such as Rift Valley fever virus, Eastern Equine Encephalitis virus, Venezuelan Equine Encephalitis virus, Western Equine Encephalitis virus, Chikungunya virus, West Nile virus, Dengue Hemorrhagic fever virus, St Louis encephalitis virus, Japanese Encephalitis virus. Lectures will touch on the potential economic impact of several pathogens including foot and mouth disease. The potential economic and ecological impact of using some of these pathogens in a terrorism event will be discussed. Students will be expected to provide oral presentations related to the natural history, medical/veterinary and economic impact of additional vector-borne diseases, such as malaria, Chagas disease, Plague, Congo Crimean Hemorrhagic fever virus, Sandfly fever viruses, Lyme disease, Leishmaniasis, Filariasis and African Trypanosomiasis.

**COURSE LEARNING OUTCOMES**

- Demonstrate applications of acquired information
- Demonstrate proficiency and excellence in the core concepts

**COURSE GRADING**

There will be 3 exams, with each representing 30% of the final grade and one oral presentation representing 10%.

## COURSE GRADING FACTORS

Evaluation of exams and oral presentations will be based on accuracy and depth of information provided.

### **Definition of Grades for Graduate Courses**

Grade	Quality Points	Graduate Courses
A+	4.00	Satisfactory/Passing
A	4.00	Satisfactory/Passing
A-	3.67	Satisfactory/Passing
B+	3.33	Satisfactory/Passing
B	3.00	Satisfactory/Passing
B-	2.67	Satisfactory*/Passing
C	2.00	Unsatisfactory/Passing
F	0.00	Unsatisfactory/Failing

*\* Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program and present a 3.00 GPA for the courses listed on the graduation application.*

Information about additional grade notations that apply to graduate students including “IN” Incomplete and “IP” In Progress as well as grading for undergraduate students may be found in the Academic Policies section of the catalog under Grading System. Graduate students are not required to take midterm exams.

## COURSE SCHEDULE

DATE	TOPIC	PRESENTER
24 January 2018	<b>Course Introduction &amp; Vector Biology Overview</b>	Bailey
31 January 2018	<b>Rift Valley Fever Virus/West Nile Virus</b>	Bailey
07 February 2018	<b>Zika Virus/Military vs. Civilian Biodefense</b>	Bailey
14 February 2018 <i>First take-home exam handed out</i>	<b>Venezuelan Equine Encephalitis</b>	Guest Lecturer
21 February 2018	<b>Malaria</b>	Guest Lecturer
28 February 2018	<b>Vector Competence/Rift Valley Fever/Potential Impact to the US</b>	Guest Lecturer
07 March 2018	<b>Filariasis (<i>Wuchereria bancrofti</i>, <i>Brugia malayi</i>, <i>Brugia timori</i>)</b>	Student Bailey
14 March 2018	<b>Spring Break – No Class</b>	

**COURSE SCHEDULE CONTINUED**

DATE	TOPIC	INSTRUCTOR
21 March 2018 <i>Second take-home exam handed out</i>	<b>Trypanosomiasis</b> ( <i>African and American</i> )	Student Bailey
28 March 2018	<b>Alpha Viruses</b> ( <i>Eastern &amp; Western Equine Encephalitis</i> )	Student Bailey
04 April 2018	<b>Flaviviruses</b> ( <i>Dengue, Saint Louis Encephalitis, Japanese Encephalitis</i> )	Student Bailey
11 April 2018	<b>Tickborne Viruses</b> ( <i>Crimean Congo Hemorrhagic Fever, Russian Spring and Summer</i> )	Student Bailey
18 April 2018	<b>Tick and Flea Borne Parasitic Diseases</b> ( <i>Lyme Disease, Rocky Mountain Spotted Fever, Plague</i> )	Student Bailey
25 April 2018	<b>Sandfly Fever Viruses</b> ( <i>Naples, Punta Toro, Sicilian</i> )	Student Bailey
02 May 2018 <i>Third take-home exam handed out</i>	<b>Leishmaniasis</b> ( <i>Cutaneous, Visceral</i> ) <b>Tour of the Biomedical Research Lab (BRL)</b>	Student Bailey

**UNIVERSITY STANDARDS**

**Plagiarism:**

Plagiarism is the presentation of someone else’s ideas or work as one’s own. Students must give credit for any information that is not either the result of original research or common knowledge. If a student borrows ideas or information from another author, he/she must acknowledge the author in the body of the text and on the reference page. Students found plagiarizing are subject to the penalties outlined in the Policies and Procedures section of the University Catalog, which include a hearing by the Honor Code Committee and may include a failing grade for the work in question or for the entire course. The following website provides helpful information concerning plagiarism for both students and faculty: <http://oai.gmu.edu/the-mason-honor-code-2/plagiarism/>

**Honor Code:**

- George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited
- All violations of the Honor Code will be reported to the Honor Committee.
- See <http://oai.gmu.edu/the-mason-honor-code-2/> for more detailed information.

## UNIVERSITY STANDARDS CONTINUED

### Enrollment:

- Students are responsible for verifying their enrollment in this class.
- Schedule adjustments should be made by the deadline published on the Registrar's website.
- Note the add/drop dates in the Academic Calendar published on the Registrar's website.
- After the last day to drop a class, withdrawing from this class requires the approval of the dean and is only allowed for nonacademic reasons.
- Undergraduate students may choose to exercise a selective withdrawal.
- See <http://registrar.gmu.edu> for selective withdrawal procedures.

### Ethics:

Ethical behavior in the classroom is required of every student. The course will identify ethical policies and practices relevant to course topics.

### Technology:

Students are expected to be competent in using current technology appropriate for this discipline. Such technology may include presentation software. Students are required to become familiar with Mason's Responsible Use of Computing Policy #1301 [http://copyright.gmu.edu/?page\\_id=301](http://copyright.gmu.edu/?page_id=301).

### Diversity:

Learning to work with and value diversity is essential in every class. Students are expected to exhibit an appreciation for multinational and gender diversity in the classroom.

### Civility:

As a diverse community of learners, students must strive to work together in a setting of civility, tolerance, and respect for each other and for the instructor. Rules of classroom behavior (which apply to online as well as onsite courses) include but are not limited to the following:

- Conflicting opinions among members of a class are to be respected and responded to in a professional manner.
- Side conversations or other distracting behaviors including cell phone use or non-class online access are not to be engaged in during lectures, class discussions or presentations
- There are to be no offensive comments, language or gestures

Students not complying will be asked to cease immediately or leave the class session.

### Students with Disabilities:

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.