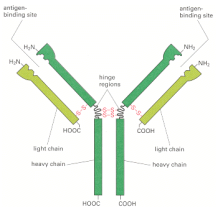

METAZOAN PARASITOLOGY

(ADVANCED INVERTEBRATE ZOOLOGY – BIOL457/557)
SPRING 2018

Instructor: Dr. Rick Hochberg
Availability: by appointment
Office Location: Olsen Hall 243
Office Phone: (978) 934-2885
E-MMail Address: rick_hochberg@uml.edu

Course title – credits: Metazoan Parasitology – BIOL457/557 - 3 credits

Meeting day and time: TR 930-1045 am

Course Description
An introduction to the diversity of metazoans (animals) that parasitize humans, livestock, other animals (both vertebrate and invertebrate), and plants. Lectures emphasize the morphology, form and function, physiology, systematics, evolution, lifecycles and pathogenesis of several major parasitic groups.

Learning Outcomes
Upon completion of this course, all students should be able to

1) Define parasitism in the broadest context, from ecological, anatomical and physiological perspectives;
2) Be able to identify the major parasitic taxa and describe their anatomies;
3) Understand the lifecycles and epidemiology of representative parasitic species;
4) Recognize how the human body fights and reacts to infections at the immunological level;
5) Appreciate how invertebrate vectors respond to parasitic infections;
6) Understand how to treat infections, both at the individual level (medically) and at the community level (ecologically)

Required Reading:
Chapters will be assigned for each group of parasites. See explanation on page 3 concerning their applicability to exams.

Publications (primary literature) will be assigned and cover topics relevant to our in-class discussions. In most cases, these publications highlight some aspects of the parasite or its manifestation (disease) that we don't cover in class, but you should know for the exam.

Pdf files of the textbook and publications will be posted to the website address shown below:
http://www.hochbergbiodiversitylab.com/parasitology.html

This schedule is tentative and open to change. **Dates in bold** pertain to exam days.		
Date	**Topic**	**Publications**
1/21	Introduction	Chapter 1
1/23	Intro continued, host defense	NA
1/28	Host defense continued. Intro to Phylum Arthropoda	NA
1/30	Mosquito Biology	NA
2/04	Mosquitoes continued	NA
2/06	Mosquitoes continued. Botflys and screwworm flys	Chen et al. 2017
2/11	Canceled	NA
2/13	Canceled	NA
2/20	**EXAM 1 (though Mosquitoes - not the flys)**	NA
2/25	Botflys/screwworm flys continued	Richter et al. (2000)
2/27	Introduction to ticks	NA
3/03	Finish Lyme disease	NA
3/05	Lyme and Alpha Gal Syndrome	Salk et al. (2008),
3/17	Introduction to nematodes and pinworms	Jimenez Castro et al. 2019
3/19	Hookworms	NA
3/24	**Exam 2 (Botflys/screwworm flys through Ticks)**	Check Website
3/26	Hookworms/ Heartworm	Check Website
3/31	Heartworm & Lymphatic filariasis	Check Website
4/02	Lymphatic Filariasis	Check Website
4/07	Finish LH; Introduction to Platyhelminthes	Check Website
4/09	Cestoda: Diphyllobothriasis	Check Website
4/14	**EXAM 3: Nematodes through Lymphatic Filariasis**	NA
4/16	Dipyllidiasis	Check Website
4/21	Trematodes	Check Website
4/23	The weird case of *Leucochloridium paradoxum*	Check Website
4/28	Schistosomes - the blood flukes	Check Website
4/30	Schistosomiasis	Check Website

EXAM STRUCTURE. Exams will be a combination of fill-in-the-blank, multiple choice, short answer, label-the-diagram, draw-the-lifecycle, diagnose the disease, and short answer questions. You are required to know the taxonomic classification of each parasite. You are also responsible for knowing aspects of any aspects of anatomy we discuss (parasite and host) as well as life cycles, which are often quite complex.

Graduate Student Exams. Graduate students will receive extra exam questions relative to undergraduates. Each graduate student will be assigned a parasitic species one week prior to the exam. The species will be related to those we cover for each exam, but the species will not be covered in class. Instead, the student is expected to search for information on their own.

How to study for an exam. Most exam questions come directly from the notes in class, unless otherwise specified. If there are assigned publications, read them, but in terms of coverage for the exam, I only expect you to know some of the major points of the publications. **What are the major points?** Depends on the paper. If it discusses a human disease, then you should know how the disease was transmitted, how it was diagnosed (symptoms, pathologies, MRI, CT, stool sample, etc). If the parasite does not affect humans, then focus on parasite transmission, how it

infects its host, and perhaps any associated pathologies and treatments. When dealing with a publication, first read the abstract and then read both the Introduction and finally the Discussion. The Methods and Materials are not important for exams, nor are the Results, since their significance is alluded to in the Discussion. However, while I will not ask you to regurgitate the methods and results, you should at least have a very basic understanding about how the authors achieved their aims (e.g., molecular sequencing, MRI, CAT scans, medications, etc.).

Plagiarism: Cheating on an exam in any fashion will result in a zero plus additional sanctions that may be included at the professor's discretion. Please see the UML's academic dishonest policy at: http://www.uml.edu/Catalog/Graduate/Policies/Academic-Integrity.aspx

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Participation: You are expected to attend each lecture class. This is an advanced course, and we only meet twice per week, so each lecture is full of information. If you must miss a lecture, please let me know in advance. A participation grade will be given out at the end of class. Repeated absences will be noted and affect your grade at the discretion of the professor. *The professor does not post PPT files, so you must get notes from a peer if you miss a lecture*.

You must not miss a Lecture Exam. If you must miss an exam, you need to do two things: **1st**, inform me ahead of time (within 24 hrs.) if you can; **2nd**, you must provide a legitimate excuse with a doctor's note or other official note. *Missing an exam or needing to schedule an early exam because of a vacation or wedding or birthday or personal holiday* ***is not a valid excuse*** *and is not permitted. If a makeup exam is provided, expect two things: the time and date will be at the professor's discretion, and the exam will be more different and more difficult than the original exam. This is meant to discourage students from missing exams.*

Undergraduate Course Evaluation and Grading

Lecture Exam 1	300 pts
Lecture Exam 2	300 pts
Lecture Exam 3	300 pts
Lecture Exam 4	400 pts
Participation	50 pts
Total	**1350 pts**

Graduate Course Evaluation and Grading

Lecture Exam 1	400 pts
Lecture Exam 2	400 pts
Lecture Exam 3	400 pts
Lecture Exam 4	500 pts
Participation	50 pts
Total	**1750 pts**

Grade Distribution is as follows: <59% = F; 60-61% = D-; 62-66% = D; 67-69% = D+; 70-71% = C-; 72-76% = C; 77-79% = C+; 80-81% = B-; 83-86% = B; 87-89% = B+, 90-91% = A-; 92-100% = A