

Parasitology

BIO 4441/BIO 5441

Lecture: MWF 10:00-10:50am CAV 123

Lab: M 2:00-5:00 pm, CAV 018

Final Exam: Monday, May 9, 10:30am-12:30pm, CAV 123

Instructor Information

Dr. Nicholas J. Negovetich

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Office Hours: MWRF 8:30-10:00am ; Other times by appointment

Course Description

Introduction to the parasites of man and animal with a survey of protozoan, helminth, and arthropod parasites from the standpoint of morphology, taxonomy, life histories, and host-parasite associations, integrated with examples spanning a broad range of topics including parasite community structure, parasite biogeography, and the evolution of host-parasite relationships.

Learning Outcomes

1. Gain a basic understanding of the subject (e.g., factual knowledge, principles, theories)
 - The student will be able to define parasitological terms, diagram life cycles of well-known parasites, and describe pathology caused by these parasites
2. Developing specific skills, competencies, and points of view needed by professionals in the field
 - The student will be able to identify well-known parasites in a laboratory setting
 - The student will be able to identify morphological features of common parasites

Text

Parasitism: The Diversity and Ecology of Animal Parasites. A. O. Bush, J. C. Fernandez, G. W. Esch, and J. R. Seed. Cambridge University Press. (2nd edition preferred, 1st edition OK)

Course Structure

Parasitology is the study of parasites. This field includes every aspect of the parasite including, but not limited to, the genetics, biochemistry, immunology, ecology, and evolution of the host and parasite. To simplify the complexity of parasitology, the course is divided into 4 discreet units based on the broad category of parasites: Protozoa, Platyhelminthes, Nematoda, and Other. The lecture and lab will consist of a mixture of information from the taxonomy chapters (3-11) and concepts from the ecology and evolution chapters (12-17). Figures and diagrams relevant to the lecture are posted on [Blackboard](#).

Attendance

Attendance is expected for the lecture portion of the course, and it is required for the lab portion (10 percentage points deduction of the lab grade for each unexcused absence). You are responsible for all material presented in lecture and in the reading assignments. Instructor notes will NOT be provided.

Quizzes and Exams

The learning outcomes will be assessed using quizzes and exams. These quizzes will be comprehensive for each unit of the course. Generally, we will have one or two quizzes per week. Lecture exams will be given at the end of each unit and will cover the material from that

unit. This course will also have a comprehensive final exam. More information regarding the format of the exams will be provided at a later date.

Make-up Lecture Exams and Quizzes

I understand that special circumstances beyond one's control can result in the inability to attend class when an exam or quiz is given. For these circumstances, a make-up exam or quiz may be scheduled provided that I was notified one week prior to the exam/quiz for a scheduled absence, or before the end of the exam/quiz (via email or phone call) when the absence was unexpected. Online quizzes have a strict due date and time. Quizzes taken after the due date but before the Wednesday prior to the next lecture exam will be marked as late. There is no penalty for the first late quiz, but each subsequent quiz will receive a 10% reduction in the grade. Missed quizzes cannot be taken for credit on or beyond the Wednesday prior to the next lecture exam.

Point Breakdown

The course consists of a lecture (75% of final grade) and lab (25% of final grade). Final grades will be assigned as follows: A=100-90%, B=89-80%, C=79-70%, D=69-60%, F=59% or lower. Standard rounding methods will be used (round up for 0.5 or higher). The percentage breakdown for each portion of the course is listed in the table below:

Assignments	Percentage
Quizzes	15%
Exams (20%, 25%, 25%)	70%
Final Exam	15%

Grade Contract

A large amount of material will be covered throughout the semester. The quizzes will be short (~10-20 min), but they are designed to make the students continuously review the material in preparation for the unit exams. The lowest quiz grade (based on percentage) will be dropped. As such, a missed quiz, which would be recorded as a zero, would be dropped from the calculation of the final grade. The lowest exam grade will not be dropped. Instead, I will allow replacement of the lowest exam grade with the grade on the final exam. For example, if the lowest exam grade was 60% but an 85% was scored on the final, then I will replace the 60% with an 85%.

Graduate and Honors Students

These individuals are required to complete an extra project (presentation, review article, etc.). The point breakdown for lecture and lab remain unchanged. However, the final grade will be modified based on the quality and completeness of the work. Completing the project will result in a C for the project, which will reduce the final course grade by 10 percentage points (equivalent to a letter grade deduction). Receiving a B on the project will lower the final course grade by 5 percentage points. The final course grade will be unchanged for all projects that receive an A. To receive an A, the project must be thorough, well organized and designed, and demonstrate substantial effort outside of the class. Failure to complete the project will not result in a grade reduction and the student will receive non-honors credit for this course.

Graduate students will create and deliver a full lecture over a topic approved by me. This lecture will be in the place of a regularly scheduled class lecture. The topic will be one that receives cursory coverage or no coverage by me. This will be the time when graduate students will gain experience at writing a lecture. These lectures will be presented during the final 2 weeks of the course. Graduate students who do not complete the project will receive an F for the course.

Honors students have the choice of extra projects. The first option is lab based and requires the survey for parasites of a single host species. Sample sizes, field sites, and collecting methods

will be discussed prior to the start of the project. The student will be required to collect, preserve, and identify the parasites that are collected during the survey. A brief report (written in the format of a journal article) will summarize the results of the project. The second option is an in-depth literature review of a specific topic relevant to parasitology. The topic must be approved by me, and must be focused enough to generate an article that's worthy of publication in a journal. The review article is 20-30 pages (11 pt serif font, 1 inch margins, double spaced; page count excludes figures, tables, and works cited), and must follow the guidelines for the Journal of Parasitology.

Academic Dishonesty

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in the [Angelo State University Student Handbook](#) and the [Angelo State University Catalog](#). Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the university's [Statement of Academic Integrity](#).

Special Accommodations

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. If any member of the class feels that they have a disability and needs special accommodations, then please contact an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the [Student Disability Services website](#). Remember, it is your responsibility to initiate such a request by contacting an employee of the Office of Student Affairs.

Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

Title IX

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-486-6357
michelle.boone@angelo.edu

You may also file a report online 24/7 at <http://www.angelo.edu/incident-form>. If you are wishing to

Speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345. For more information about Title IX in general you may visit <https://www.angelo.edu/title-ix>.

Technology in the Classroom

Many students are using laptops and tablets to take notes despite the research that suggests hand-written note taking results in better retention of the lecture material. Using laptops or tablets for note taking is OK in this course as long as the use of this technology is to aid in learning during this course. Using these devices for other purposes during lecture or lab will not be tolerated. **Cell phone usage is prohibited** (bring a scientific calculator if you need to use a calculator). Being told to put your cell phone and/or other electronic device away will result in a 2-percentage point deduction in your final course grade.

Schedule Notes

The book chapters are for the main topic. Concepts and terms from chapters 12-17 could be introduced and used throughout the course.

Exam dates are tentative. Exams will likely be on Friday, with the lab exam on the following Monday. If exam dates change, at least 1 week notice will be given. The announcement will be made in class and posted on blackboard.

COVID-19 Addendum

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#) web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Lectures will not be live streamed or recorded this semester. However, you can find last year's lectures posted on youtube. If you miss class or lab due to COVID, then please obtain the notes from a classmate and email me with any questions that arise.

Class Schedule

This schedule is tentative and subject to change

Week	Topic	Chapter	Miscellaneous
1/17/2022	Introduction; Terminology, Immunology Review	1-2	
1/24/2022	Platyhelminthes Intro; Aspidobothrea; Digenea Intro; Digenea Diversity	6	
1/31/2022	Digenea Diversity; Digenea Schistosoma; Monogenoidea	6	
2/07/2022	Monogenoidea; Eucestoda Introduction; Eucestoda Diversity	6	
2/14/2022	Eucestoda Diversity; Nematoda Introduction	6	Exam #1 on Friday
2/21/2022	Nematods with Invert Hosts; Stichosome Possessors	8	
2/28/2022	Gut-Dwelling Nematodes #1; Gut-Dwelling Nematodes #2	8	
3/07/2022	Tissue-dwelling Nematodes; Acanthocephala	8	
3/14/2022	Spring Break		
3/21/2022	Acanthocephala	7, 8	Exam #2 on Friday
3/28/2022	Protozoa Intro and The African Tryps	3	
4/04/2022	American Tryps; Leishmania; Other Flagellates	3	
4/11/2022	Amebozoa; Apicomplea Intro; Gregarines	3	
4/18/2022	Coccidians, Plasmodium	3	
4/25/2022	Plasmodium; Ecological Terminology	12,13,15	Exam #3 on Friday Last Day to Drop 4/28
5/02/2022	Transmission Dynamics	14,16	Grad Student Presentations
5/09/2022	Final Exam Week		

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