

Syllabus for
BIO 410L - Medical Parasitology Laboratory
1.0 Credit Hours
Spring 2018

I. COURSE DESCRIPTION

Parasitology is specifically designed to introduce biology and nursing majors to medical parasitology. Emphasis is placed on life cycles, pathology, modes of transmission, prevention and treatment, and the identification of diagnostic stages of medically important parasites. Discussion of procurement, handling, and preparation of clinical specimens for laboratory analysis will be discussed as time permits.

Prerequisites: Student must be biology major or minor, pre-medicine, international community development, global environmental sustainability or nursing or have permission of the instructor.

II. COURSE GOALS

According to the World Health Organization, five of the top six fatal diseases in the world have a parasitological etiology. (Heart disease and cancer rank low from a world perspective – the majority of people do not live long enough to suffer from these conditions.)

ORU is committed to preparing students to participate as members of medical mission teams who will go throughout the world in an attempt to bring the very best in prayer, medicine and relief to the sick and suffering. A major goal of this course, therefore, is to prepare students to recognize the global severity of parasitological disease, and to train them to educate their fellow team members and the people they minister to as to the causes, prevention, treatments and cures for these diseases.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

Objectives

As a result of successfully completing this course, the student will be able to do the following:

- A. Describe the life cycles for the major medically important parasites.
- B. Identify the diagnostic stages of the major medically important parasites.
- C. Describe the modes of transmission of the major medically important parasites.
- D. Describe the pathology of the major medically important parasites.
- E. Describe the best prevention and treatment of the major medically important parasites.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

Required Sources:

CDC website: <http://www.cdc.gov/parasites/>

Optional sources:

John, D., Petri, W. 2006. Medical Parasitology. 9th Edition. ISBN: 978-0-7216-4793-7.

Additional Parasitology textbooks and atlases:

Bogitsh, Burton J. (Burton Jerome), 2005. Human Parasitology. Elsevier Academic Press; Burlington, MA.

- Bogitsh, Burton J. (Burton Jerome), 2013. Human Parasitology. Academic Press, Amsterdam, Boston.
- Garcia, Lynn Shore, 2007. Diagnostic Medical Parasitology. ASM Press; Washington, DC.
- Garcia, Lynne Shore, 2009. Practical Guide to Diagnostic Parasitology. ASM Press; Washington, DC.
- Gillaspay, SH and PM. Hawkey . 1995. Medical Parasitology: A Practical Approach. IRL Press at Oxford University Press; Oxford; New York.
- Gockel-Blessing, Elizabeth A., 2013. Clinical Parasitology: A Practical Approach. Elsevier Saunders, St. Louis, MO.
- Heelan, Judith Stephenson, 2002. Essentials of Human Parasitology. Delmar; Albany, NY.
- Leventhal, Ruth, 2012. Medical Parasitology: A Self-Instructional Text. F.A. Davis; Philadelphia.
- Loker, Eric S. and Hofkin, Bruce V. Parasitology: A Conceptual Approach. ISBN: 978-0-8153-4473-5. Garland Science, Taylor and Francis Group; New York and London.
- Mullen, G.R. and Durden, L.A., 2009. Medical and Veterinary Entomology. Academic Press; Boston. Elsevier; Amsterdam.
- Ridley, John W., 2012. Parasitology for Medical and Clinical Laboratory Professionals. Delmar; Clifton Park, NY.

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
 - a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
 - b. Failing to meet group assignment or project requirements while claiming to have done so;
 - c. Failing to cite sources used in a paper;
 - d. Creating results for experiments, observations, interviews, or projects that were not done;
 - e. Receiving or giving unauthorized help on assignments.
 By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or

failing the course or expulsion from the University, as determined by department and University guidelines.

4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding the Whole Person Assessment requirements. Students should consult the Whole Person Assessment handbooks for requirements regarding general education and the students' majors.
 - a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
 - b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Procedures

1. Evaluation

4 Case Studies – 25 pts. each	100
3 Lab practicals – 100 pts. each	300
Comprehensive lab final	<u>100</u>
TOTAL	500

Grades will be assigned as follows:

<u>Letter Grade</u>	<u>Percent</u>
A	90-100
B	80-89
C	70-79
D	60-69
F	59 and below

2. Other Information

- a. Periodic case studies and unknowns will be assigned throughout the semester. Typically, each student or student group will be assigned one case study in each of the 4 units (see course calendar).

3. Attendance and Makeup Work

- a. There are no automatic excused absences except for administratively excused absences or serious medical illness. Students claiming an administrative excuse must present a note signed by the dean authorizing the absence to the instructor. Medical illness must be documented by a licensed health professional.
- b. Late Work
It is expected that all work will be completed and submitted on time. Unexcused absences and tardies will not be tolerated. Quizzes will not be given to students who are late to class or absent, unless they are due to an administrative-excused absence or serious medical illness.
- c. Unexcused absences mean that work missed counts as zero. Excused absences mean that the student may make up missed work in a reasonable length of time (to be determined by the instructor).

4. Laboratory Conduct and Cleanup
 - a. Part of the laboratory learning experience is in setting up the laboratory and returning it to its original condition so it will be in satisfactory condition for the next class. Lab etiquette is essential.
 - b. It will be the responsibility of each student to:
 - (1) Clean and return all glassware to its designated storage area
 - (2) Return all equipment to its storage
 - (3) Dispose of all waste products in the designated area
 - (4) Use all equipment carefully and treat it with respect
 - (5) Leave the laboratory clean and neat
 - c. No one is excused from the lab session until these responsibilities are completed. Anyone leaving prior to completion of lab cleanup will be penalized on his or her final grade.

5. ePortfolio Requirements

None

VI. COURSE CALENDAR

WEEK	TOPICS
1 -	Introduction
2 -	Lumen-dwelling Protozoa
3 -	<i>Plasmodium</i>
4 -	Blood/Tissue-dwelling Protozoa
5 -	<i>Lab practical I, unknowns and case studies due</i>
6 -	Trematodes
7 -	Trematodes and Cestodes
8 -	Cestodes
SPRING BREAK	
9 -	<i>Lab practical II, unknowns, and case studies due</i>
10 -	Intestinal Nematodes
11 -	Blood and Tissue-dwelling Nematodes
12 -	Arthropods
13 -	<i>Lab practical III, unknowns, and case studies due</i>
14 -	<i>Comprehensive Lab final</i>

Course Inventory for ORU's Student Learning Outcomes

**Medical Parasitology Laboratory – BIO 410L
Spring 2018**

This course contributes to the ORU student learning outcomes as indicated below:

Significant Contribution – Addresses the outcome directly and includes targeted assessment.

Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.

Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.

No Contribution – Does not address the outcome.

The Student Learning Glossary at <http://ir.oru.edu/doc/glossary.pdf> defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities		Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	Outcome #1 – Spiritually Alive Proficiencies/Capacities				
1A	Biblical knowledge				X
1B	Sensitivity to the Holy Spirit				X
1C	Evangelistic capability				X
1D	Ethical behavior				X
2	Outcome #2 – Intellectually Alert Proficiencies/Capacities				
2A	Critical thinking	X			
2B	Information literacy	X			
2C	Global & historical perspectives	X			
2D	Aesthetic appreciation				X
2E	Intellectual creativity	X			
3	Outcome #3 – Physically Disciplined Proficiencies/Capacities				
3A	Healthy lifestyle		X		
3B	Physically disciplined lifestyle				X
4	Outcome #4 – Socially Adept Proficiencies/Capacities				
4A	Communication skills			X	
4B	Interpersonal skills				X
4C	Appreciation of cultural & linguistic differences				X
4D	Responsible citizenship				X
4E	Leadership capacity				X