COURSE SYLLABUS

PARASITOLOGY: Biology 4091.001 and 4091.601– Fall 2021

INSTRUCTOR: Art Goven
Office: UNT – Denton LSC A 305
Email: goven@unt.edu

LECTURE LOCATION:
4091.001: Denton, General Academic Building, Lecture Room 104
4091.601: Frisco, Inspire Park, Lecture Room 1006

Lecture Mode: In Person, Face to Face

LECTURE TIME:
4091.001: Tuesday and Thursday at 9:30 to 10:50 am
4091.601: Tuesday and Thursday at 2:00 to 3:20 pm
Each lecture will contain approximately an hour and twenty minutes of material. The lectures will consist of detailed Power Point slides with a comprehensive explanation of the material on each slide. Attendance is required; however, roll will not be taken. **Each lecture contains significant amounts of information that must be comprehended / understood to pass each test.**

EMAIL and OFFICE HOURS:
Denton Campus: T / Th 11 am to 12 noon and M /W /F 9 -10:00 am 12:30 pm – 2 pm
Frisco Campus: T / Th after every class
Office hours are best by appointment as I have three classes and times fill up**.** I encourage you to make an appointment to see me if you are having trouble understanding the material that goes beyond what can be covered using email, or if you want to discuss grades, or have other issues that require a private meeting. Contact me by email to schedule an appointment. Appointments can be in person, by telephone, or by Zoom. Remember email is great for simple questions, can be used anytime, and is quick.

TEXT:
No text is required for this course. A good reference book is: *Human Parasitology*, Bogitsh et al.; Elsevier Academic Press, latest Edition or a previous edition will be fine.

CANVAS:
To make it easy for you to follow and take notes Power Point slides will be posted on Canvas prior to each lecture.

Exam grades will also be posted on Canvas. Grades on Canvas will represent the score earned on each test and will not represent points received from test curves or points received from tests regrading that may result in additional points.

COURSE DESCRIPTION:

This course is designed to introduce students to animal parasites. The course surveys parasitic protozoa (amoebae, ciliates, flagellates, malaria), nematodes (roundworms), cestodes (tapeworms), and trematodes (flat worms) concentrating on model organisms that are infective for the human host. A key focus of the course will be the study of parasite nomenclature, life cycles, epidemiology, pathology and clinical manifestations, diagnosis, treatments, and prevention. Student will also learn about the host response to parasites via the immune system and the ways parasites have evolved to avoid or use the immune response to enhance their survival. Information will also be presented about how parasites have undergone adaptations to enable them to successfully survive extreme environments in the host.

COURSE OBJECTIVES:
By the end of the course, you will understand:

- The nature of parasitism
- The life cycle, epidemiology, pathology, treatments, and diagnosis, and prevention of common human parasites
- Host – parasite relationships, especially from the human host perspective
- Immuno-parasitology or the role of the immune system in host protection against parasites, and how parasites have evolved to circumvent the immune response
- Parasite adaptation to live in an extreme environment, the host

COURSE REQUIREMENTS:

Earn an overall passing average on four (4) exams

EXAMS: Four (4) lecture exams will be given. Each exam will be worth 100 points figured on a percentage basis. Each exam is equal in weight. The final grade will be the average of the four (4) exams (plus any quizzes). There is no comprehensive exam.

MISSED EXAMS: No make-up exams will be given without a valid written reason from the appropriate university personnel or program. The material to be tested on in the make-up will be decided upon by the instructor. It is your responsibility to contact the instructor before missing an exam. Use email so that a written record is established. Make-up exams should be extremely rare and must be completed before the scheduled exam is returned to the class.

RE-GRADING POLICY: If you believe that your exam has been graded in error you must notify the instructor within two (2) lecture periods after the exam has been handed back.

FINAL GRADE: Your final grade will be determined as follows:

A = 90% or higher
B = 80% to 89%
C = 70% to 79%
D = 60% to 69%
F = less than 60%

TEST AND FINAL GRADE CURVES:
For each exam the highest grade in the class will be elevated to 100%. For example, if the highest grade on Exam 1 is 94% then 6% points will be added to the grade. These 6% points will then be added to all Exam 1 grades. This curve takes care of poorly written questions. At the end of the course the highest average in the class will be elevated to 100%. For example, if the highest final average is 95% then 5% points will be added to the final average. These 5% points will be added to all final averages.

There are no extra credit opportunities in this course.

ACADEMIC INTEGRITY: I, and UNT expects you to maintain the highest academic integrity. Lapses in academic integrity will be referred to the Dean of Students. Remember, honor is your heritage, protect it.

SUGGESTIONS: Do not let material build up. Do not binge study lectures. Review and study lectures as they are presented. Do not be shy, ask questions in class or via email for clarification, or use office hours. Most (all) test questions will come from lecture material. The class is run in an informal manner, relax.

DISABILITY ACCOMODATION: In accordance with Section 504 of the federal Rehabilitation Act of 1973 and the ADA of 1990, UNT endeavors to make reasonable adjustments in its policies, practices, services, and facilities to ensure equal opportunity for qualified persons with disabilities to participate in all educational programs and activities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify eligibility. This should be done as early as possible to avoid delay in implementation. If it is found that you need an ADA / ODA accommodation, contact me after via email to set up an in-office appointment by the 12th day of class. ODA website is http://www.unt.edu/oda. The phone number is 940-565-4323.

IMPORTANT CLASS and EXAM DATES:

Make sure you know the academic calendar, including dates when you can drop the course, change to pass/fail, etc.

EXAM 1 Thursday, September 16th
EXAM 2 Thursday, October 14th
EXAM 3 Thursday, November 11th
EXAM 4 Thursday, December 9, 2021. Section .001 at 8:00-10:00 am; Section .601 at 1:30-3:30 pm

Exam dates may change depending on how fast or slow we cover the material. However, I promise exam dates will never be moved up, given earlier than the published date

COVID RELATED SYLLABUS STATEMENTS:

Face Mask Encouraged:
UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Attendance Syllabus Statement:
Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Remote Lecture possibilities:
Remote instruction may be necessary if community health conditions change, or you need to self-isolate or quarantine due to COVID-19. Students will need access to a webcam and microphone to participate in fully remote portions of the class. Additional required classroom materials for remote learning include reliable internet service and MP4 to play lecture recordings. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn.

If community health conditions make it necessary, synchronous (live) sessions in this course will be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

BIOLOGY 4091.001 and 4091.601
PARASITOLOGY
LECTURE OUTLINE

The lecture outline is divided into four sections. Approximately 75% of the course will be spent on Section II, Survey of Parasites. We will cover parasites in this section by arranging them into groupings, for example "Nematodes infective in the egg stage." We will begin with those parasites possessing the least complex life cycles (nematodes) and finish with those having the most complex (protozoan). In Section III we will briefly discuss parasite adaptations. Finally, in Section IV we will discuss immuno-parasitology.

I. INTRODUCTION

II. SURVEY OF PARASITES

A. Helminths

1. Nematodes - Roundworms
a. Nematodes infective in the egg stage
b. Nematodes infective in the larval stage
c. Tissue nematodes

2. Cestodes - Tapeworms
a. Intestinal cestodes
b. Tissue cestodes

3. Trematodes - Flukes
a. Trematodes infective in the metacercarial stage
b. Trematodes infective in the cercarial stage

B. Protozoans

1. Intestinal and Atrial Protozoans
a. Class Sarcodina - Amoeba
b. Class Ciliata - Ciliates
c. Class Mastigophora - Flagellates

2. Blood and Tissue Protozoans
a. Class Mastogophora - Flagellates
b. Class Sporozoasida - Malaria
c. Unclassified

III. PARASITE ADAPTATIONS FOR SURVIVAL IN EXTREME ENVIRONMENTS

IV. IMMUNOPARASITOLOGY

A. General Outline of the Host Immune System

1. **Nonspecific Immune Response**
   - **a. Phagocytosis**
   - **b. Inflammation**

2. **Specific Immune Response**
   - **a. Humoral-Mediated Immunity**
   - **b. Cell-Mediated Immunity**

B. Immunity to Helminth Parasites

1. **Gastrointestinal Nematodes**

2. **Tissue Nematodes**

3. **Schistosomes**

C. Immunity to Protozoan Parasites

1. **Intracellular Protozoans**
   - **a. Plasmodium**
   - **b. Leishmania**
   - **c. American Trypanosomes**

2. **Blood and Tissue Protozoan**
   - **a. African Trypanosomes**

D. Immunological Control of Parasitic Infection -Immunizations

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