



Parasitology / Mycology, MLAB 1231-HYBRID

Course Syllabus: Spring 2024

“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”

Instructor: Gaylon Barrett

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| Office Hours | Monday | Tuesday | Wednesday | Thursday | Friday | Online |
|--------------|--|-------------------------|--------------------------|------------|------------|---------|
| | By Conference Call or Zoom Office Meetings | 12:30-4:00 In Office | 8:30-11:30 12:30-4:00 | Appt. only | Appt. only | Anytime |

This syllabus is an agreement between the instructor and the student.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified by the instructor.

Course Description: 2 credit hours,- Parasitology is the study of clinically significant parasites; a comprehensive discussion of individual parasites, and relevant diagnostic methods designed to detect and identify the organisms present. Mycology is the study of fungi, how they cause disease in humans and how they may be cultivated and identified. This course will also cover the detection and identification of viruses in humans.

Prerequisite(s): Acceptance into MLT Program

Student Learning Outcomes: The primary goal of this course is to provide students with an understanding of what organisms are significant to humans, their life cycles, morphology, clinical disease, pathogenesis, diagnosis, treatment, epidemiology and prevention.

- Describe individual parasites and their life cycles
- Describe the morphologies of individual parasites
- Explain what is the most likely specimen source to recover specific parasites
- Describe collection methods, quality control-Pre-analytical, Analytical, Post-Analytical
- Describe the best diagnostic procedure(s) to recover specific parasites
- Explain the clinical significance of various parasites
- Perform diagnostic procedures to identify parasites
- Explain the growth requirements for specific fungi
- Describe the microscopic and macroscopic features of various fungal species
- Perform laboratory methods to identify various fungal isolates
- Describe the viral infectious cycle
- List viruses associated with specific clinical specimens
- List some of the most efficient laboratory tests or methods for detecting viruses

Lectures & Discussions:

Introduction to Parasitology

Specimen Collection and Processing, Pre-Analytical, Analytical, Post-Analytical

The Amebas

The Flagellates

The Hemoflagellates

Select Sporozoa: Plasmodium and Babesia

Miscellaneous Protozoa

The Nematodes

The Filariae The

Cestodes The

Trematodes

Artifacts and Confusers

The Arthropods

Introduction to Mycology

Morphology of Fungi - microscopic and macroscopic

Fungal media and stains

Mycotic infections

Yeasts

Moulds

Overview of virology

Viruses in Human Disease

Antiviral Therapy, Susceptibility, Testing, and Prevention

Evaluation/Grading Policy:

Exams 65%

Lab/Quizzes/HW/Case Studies 35% (Participation 50%, Exams/Practicals/written assignments 50%)

Course Grades: A = 90% or above

B = 80 - 89%

C = 70 - 79%

D = 60 - 69%

F = Less than 60%

A minimum grade of “C” is required for **BOTH** the lecture and laboratory components of all Medical Laboratory Technician courses. This means you must maintain a **70** or better in both lecture exams and lab assignments. Failure to meet the minimum passing score in each area will result in a “D” for the course and possible dismissal from the program.

Tests/Exams:

4 exams + Final exam

Unannounced quizzes may be given periodically

Required Instructional Materials: Tille, P.M., Bailey & Scott's Diagnostic Microbiology, 15th Edition, Mosby/Elsevier, 2022

Publisher: Mosby/Tille

ISBN Number: Tille - 978-0-323-68105-6

Optional Instructional Materials:

Evolve Student Resources accompanying Tille: <http://evolve.elsevier.com/Tille/>

Parasite Image Library, CDC: www.dpd.cdc.gov/dpdx

Mycology website: www.doctorfungus.org

Indiana Pathology Parasitology and Mycology Atlases (available on PCs in MS103 and UHS student computer labs)

Required Computer Literacy Skills:

SCANS Skills:

Scan Competency Parasitology / Mycology

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|---------------|--|
| Resources | Identify supplies needed for each lab and organize laboratory procedure so that all supplies and equipment are used correctly. |
| Interpersonal | Recognize limitations of expertise and communicate with instructor when questions arise. Show respect for instructor and peers during class time. |
| Information | Apply information gained from lecture, laboratory and independent study to problem-solve results provided as case studies or unknowns during laboratory. |
| Systems | Apply critical thinking skills to problems encountered in the laboratory and theoretical case studies. |
| Technology | Achieve competency in routine parasitology and mycology procedures. |

Course Structure and Overview:

This is a Hybrid class which means class meets once a week and all other instruction is done online via the learning management system BLACKBOARD. In class meetings will be reserved for lecture, case studies, labs and group projects. Students are expected to complete all the readings of the required e-book chapters, watch the instructional videos and complete the online chapter activities. You will see that the course is divided into 16 weeks in the Blackboard portion. Each week you will be expected to complete certain online homework assignments for the chapters found in that week's folder. This course requires daily computer and internet access. You should expect to spend no less than 3-6 hours a week in this course. Pay close attention to deadlines for all assignments. Assignments will not be accepted late! Technical difficulties are no excuse for late assignments. A due date assignment schedule is posted in the START HERE folder in Blackboard the entire semester! Please check it weekly so that you know what is due and do not miss anything.

- **Communications:**
- **EMAIL:** Please check your NTCC email EVERYDAY. Email is the official form of communication used here at NTCC. All emailed questions to the instructor will be responded to within 8 hours, but usually within a few hours when possible. I will normally respond to you at least acknowledging that I received your inquiry and will answer as soon as possible.
- **TEXT MESSAGE NOTIFICATIONS:** Text messages will be accepted but only in an emergency basis or situation. Please use the office phone number or email first if all possible.
- **ANNOUNCEMENTS:** These can be found in Blackboard under the course link on your Bb homepage. Please make sure you are reading any announcements thoroughly when they are posted there.

Institutional/Course Policy:

All assignments are due on the specified due date. Assignments will not be accepted after the due date, unless a legitimate reason is given. Not being here is not an excuse as assignments can be sent electronically. No assignment will be accepted after graded assignments are returned.

Homework and/or case studies will be assigned over each unit and will have specified due dates.

Other Course Requirements:

Students are required to wear specified scrubs every day of class and laboratory. Appropriate laboratory attire is required - close-toed shoes, lab coat, and other supplied personal protective equipment if necessary. Without close-toed shoes or lab coat, no lab procedures may be performed and the grade will reflect a missed lab period.

Student Responsibilities/Expectations:

1. Attend all classes and labs, be on time and remain in class for the entire period. For every three days missed, one letter grade will possibly be deducted from the final grade. Three episodes of tardiness or early departure will be equated with one class absence. Exams are to be taken on the scheduled date and time. Prior approval of the instructor is required for anyone missing an exam date. Makeup exams must be taken within 2 days of returning to campus. Every day after that will have 10 points deducted from the exam grade. Missing an exam without notifying the instructor will result in a grade of "0" for the exam. Anyone more than 15 minutes late for an exam without prior approval will take the exam in the testing center after the class period and have 10 points deducted from the exam grade.
2. Complete assigned readings before the lecture over each topic.
3. Be prepared to take notes and participate in class.
4. Be respectful of instructors and classmates.
5. All cell phones will be turned off or to silent during class time.
6. Laptops/tablets may be used for note-taking but do not abuse this privilege. They are not for personal use during class time.
7. Any missed laboratory session for any reason will require an essay of no less than 250 words (2 hand-written pages) covering the topic or activity performed during that session. This essay will be submitted before the next scheduled class period. The activity or procedure must also be made up, if possible, and any assignments as part of the missed lab session will also be turned in as soon as the lab activity has been completed. It is the student's responsibility to contact the instructor for such assignments.
8. When illness or emergencies arise which necessitate a student's absence from any scheduled class or other scheduled activity, the instructor should be notified as soon as possible.

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tentative Course Timeline (*note* instructor reserves the right to make adjustments to this timeline at any point in the term):

TENTATIVE COURSE SCHEDULE: Spring 2024 Tuesday 0930am-1220pm Laboratory

| WK# | DATE | Online LECTURE | LAB | ASSIGNMENTS |
|-----|------|---|---|---|
| 1 | 1/16 | <i>Syllabus review and general course information</i> Ch 46 – Lab methods/strategies in Parasitology | Review syllabus Set up Lab drawers Safety protocols | Homework Ch 46-47 due 1/30 |
| 2 | 1/23 | Ch 46-47 Lab methods /Intestinal Protozoa | Photographs Slides | Read Chapters 46-47----- ----- |
| 3 | 1/30 | Ch 47 – Intestinal Protozoa cont. | Prepared slides: Protozoa | |
| 4 | 2/6 | EXAM 1 (Chapter 46-47) ----- Ch 48 – Blood & Tissue Protozoa | Lab TBD | HW Ch 48-49 due 2/13 ----- |
| 5 | 2/13 | Ch 49 – Other Protozoa/body sites | Prepared slides: Blood Protozoa | Read Chapter 48-49 |

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| 6 | 2/20 | EXAM 2 (Chapter 48-49) | Lab TBD | Chapters 51-58 |
| | | ----- Ch 50 – Intestinal Nematodes Ch 51 – Tissue Nematodes | | |
| 7 | 2/27 | Ch 52 – Blood Nematodes Ch 53 – Intestinal Cestodes Ch 54 Tissue Cestodes | Prepared slides: Nematodes Cestodes | HW Ch 50-57 due 3/5 |
| | | Ch 55 – Intestinal Trematodes Ch 56 – Liver and Lung Trematodes Ch 57 – Blood Trematodes | | |
| 8 | 3/5 | Ch 55 – Intestinal Trematodes Ch 56 – Liver and Lung Trematodes Ch 57 – Blood Trematodes | Prepared slides: Trematodes | Continue reading chapters 50-57 |
| 9 | 3/19 | EXAM 3 (Chapter 50-57) | <i>Lab practical: Parasitology</i> | HW Ch 58-60 due 4/16 |
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| 10 | 3/26 | Ch 58 – Overview of Fungal ID Methods | Video: Fungal ID methods | Read ch 58 and ch 59-60 HW on Ch 61-63 Due 4/16 |
| 11 | 4/2 | Ch 59 – Hyaline Molds, Zygomycetes, etc. Ch 60 – Dematiaceous Molds | Lab-Parasit Notebook | |
| 12 | 4/9 | Ch 61 – Opportunistic Atypical Fungus | Lab TBD | - Read Ch 61-63 |
| 13 | 4/16 | Ch 62 – The Yeasts Ch 63 – Antifungal Susceptibility Testing | LAB: Fungal exercise India Ink | Lab Parasit notebooks due 4/30 |
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| 14 | 4/23 | EXAM 4 (Chapter 58-63) | Lab TBD | HW Ch 64-66 due 4/30 |
| | | ----- Ch 64 – Methods & Strategies in Virology | | |
| 15 | 4/30 | Ch 65 – Viruses in Human Disease Ch 66 – Antiviral Therapy, Susceptibility Testing, And Prevention | Final review | Continue chap. reading 64-66 |
| 16 | 5/7 | FINAL Exam Tuesday, 5/7/2024 @ 0930 am | | |