



BIOL 2421 Microbiology (BIOL 2421.001)

Course Syllabus: Fall 2019

"To provide personal, dynamic learning experiences empowering student to succeed."



Mary Hearron, Ed.D.

Office: UHS 162

Phone: (903) 434-8296

Email: mhearron@ntcc.edu

| Monday | Tuesday | Wednesday | Thursday | Friday | Online |
|---------------------------|--------------------------------|--------------------------|--------------------------------|--------|--------|
| 1:30 -3:00 PM Lab Prep | 11:15-12:20 PM 1:30-3:00 PM | 1:00-3:00 PM Lab Prep | 11:15-12:20 PM 1:30-3:00 PM | | Email |

The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Catalog Course Description: Principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment.

Inclusive Access: We have negotiated with the Publisher to obtain a discounted price for your lecture course materials. Your ebook and Connect Access Code are included with your tuition and will be available through Blackboard on the first class day (use the link found on the Bb course homepage). The materials are required for your class and essential in your success. If you also determine that you would like a print copy of your text in addition to your inclusive access loose-leaf copies will be available in the College Store at a discounted price. You may opt out of purchasing your materials from the College Store through the Census Date for the course. If you choose to opt out you will be responsible for purchasing your Connect Access Code from another vendor. You will receive a refund for the Inclusive Access if you opt out.

Required Textbook(s):

- Willey, et. al, Prescott’s Microbiology; 11th Edition ISBN 9781260297683 Publisher: McGraw-Hill Publishers
- Hearron and Deming, BIOL 2421 Laboratory Manual for Microbiology, Publisher: NTCC

Recommended Reading(s): Appropriate chapters in textbook as assigned

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.

3. Communicate effectively the results of scientific investigations.
4. Provide examples of the impact of microorganisms on agriculture, environment, ecosystem, energy, and human health, including biofilms.
5. Identify unique structures, capabilities, and genetic information flow of microorganisms.
6. Compare the life cycles and structures of different types of viruses.
7. Discuss how microscopy has revealed the structure and function of microorganisms.
8. Give examples of the range of metabolic diversity exhibited by microorganisms, impact of metabolic characteristics on growth, and control of growth.
9. Describe evidence for the evolution of cells, organelles, and major metabolic pathways from early prokaryotes and how phylogenetic trees reflect evolutionary relationships.
10. Describe the causes and consequences of mutations on microbial evolution and the generation of diversity as well as human impacts on adaptation.
11. Classify interactions of microorganisms on human and non-human hosts as neutral, detrimental, or beneficial.

Lecture Readings and Discussions: (Schedule is subject to change, if necessary)

- Week 1- Bacterial and Archaeal Cell Structure
- Week 2- Eukaryotic Cell Structure
- Week 3 Viruses and Other Acellular Infectious Agents
- Week 4- **Test**; Microbial Growth
- Week 5- Microbial Control & Chemotherapy
- Week 6- Microbial Metabolism
- Week 7- Microbial Metabolism; **Test**
- Week 8- Microbial Genetics
- Week 9- Pathogenicity and Host Response
- Week 10-**Test**; Clinical Microbiology
- Week 11- Epidemiology and Public Health Microbiology
- Week 12- Human Diseases Caused by Viruses
- Week 13 –**Test**; Human Diseases Caused by Fungi and Protists
- Week 14- Human Diseases Caused by Bacteria
- Week 15- Human Diseases Caused by Bacteria; **Test**
- Week 16- Comprehensive Final

Evaluation/Grading Policy:

- 50% 5 examinations
- 20% 1 comprehensive final
- 15% 2 lab practicals and daily lab exercises
- 15% Laboratory Unknown Identification Research

Final Grades will be determined as follows:

| | |
|-------------------|-------------------|
| 90.0 --- 100 = A | 60.0 --- 69.9 = D |
| 80.0 --- 89.9 = B | 59.9 and < = F |
| 70.0 --- 79.9 = C | |

Make-up Work: All assignments will be accepted only on the due date at the beginning of the period. There is no makeup for missed quizzes or labs.

The last day to drop the course with a grade of W is **Tuesday, November 19, 2019**. If circumstances require you to withdraw from this course, you must do so by that date. It is the **student's responsibility** to initiate the withdrawal with the registrar's office. **Failure to officially withdraw will result in your receiving a grade of F.**

Assignments and Exams:

Specific assignments may be delivered through Blackboard. They may include multiple choice quizzes, short discussion papers or other interactive activities to aid in successful comprehension of various topics in microbiology. Scan-trons and a blue book are required for all tests.

Student Responsibilities/Expectations:

Northeast Texas Community College is a "community of scholars". Please remember that you and all of the students in this class are pursuing very important goals in your lives. As scholars, I expect every student to be courteous to other students and the instructor in both online and laboratory experiences.

As your instructor, I will attend all scheduled classes prepared to cover the assigned objectives. I will make a conscientious effort to teach to the best of my ability and to provide you with a variety of teaching and learning formats to help you in your efforts to be successful in microbiology. I deeply care about your learning experience and your success in this course, however that ultimate success does depend largely on **YOU**. Your success can be maximized and your potential achieved by making the commitment to meet these classroom expectations:

1. Schedule and plan to attend class for the full class and lab time 4 days per week.
2. Be sure to do all of your own work. Collusion and plagiarism are acts of academic dishonesty.
3. Submit all work, both online and face-to-face, on time when it is due. NO late work will be accepted.
- 4.

Other course (lab) requirements:

1. Lab coat or large shirt to protect clothing
2. Box of microscope slides
3. Sharpie marking pen
4. Plastic gloves/goggles
5. Roll of paper towels
6. 3 ringed binder for lab notebook

NTCC Academic Honesty Statement:

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

Academic Ethics:

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

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 arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

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.