BIOL 2420 Microbiology
(BIOL 2420.001, 2420.002, and 2420.003)

Course Syllabus: Spring 2020

"Northeast Texas Community College exists to provide responsible, exemplary learning opportunities."

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	8:00 – 9:30 a.m.	8:00 – 9:30 a.m. 3:00-5:00 p.m.	8:00 – 9:30 a.m.	8:00 – 9:30 a.m. 3:00-5:00 p.m.	Through email: lpresley@ntcc.edu	

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: This course covers basic microbiology, immunology, and the basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health.

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/Lab Manual:

- Cowan, 2015, Microbiology Fundamentals: A Clinical Approach, 3rd Edition with Connect Publisher: McGraw Hill; ISBN Number: 9781259709227
- Hearron & Deming, 2019, Biology 2420/21 Laboratory Manual for Microbiology NTCC Bookstore

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

Student Learning Outcomes:

1. Describe distinctive characteristics and diverse growth requirements of prokaryotic organisms compared to eukaryotic organisms.
2. Provide examples of the impact of microorganisms on agriculture, environment, ecosystem, energy, and human health, including biofilms.
3. Distinguish between mechanisms of physical and chemical agents to control microbial populations.
4. Explain the unique characteristics of bacterial metabolism and bacterial genetics.
5. Describe evidence for the evolution of cells, organelles, and major metabolic pathways from early prokaryotes and how phylogenetic trees reflect evolutionary relationships.
6. Compare characteristics and replication of acellular infectious agents (viruses and prions) with characteristics and reproduction of cellular infectious agents (prokaryotes and eukaryotes).
7. Describe functions of host defenses and the immune system in combating infectious diseases and explain how immunizations protect against specific diseases.
8. Explain transmission and virulence mechanisms of cellular and acellular infectious agents.
9. Use and comply with laboratory safety rules, procedures, and universal precautions.
10. Demonstrate proficient use of a compound light microscope.
11. Describe and prepare widely used stains and wet mounts, and discuss their significance in identification of microorganisms.
12. Perform basic microbiology procedures using aseptic techniques for transfer, isolation and observation of commonly encountered, clinically significant bacteria.
13. Use different types of bacterial culture media to grow, isolate, and identify microorganisms.
14. Perform basic bacterial identification procedures using biochemical tests.
15. Estimate the number of microorganisms in a sample using methods such as direct counts, viable plate counts, or spectrophotometric measurements.
16. Demonstrate basic identification protocols based on microscopic morphology of some common fungi and parasites.

Lecture Readings, Connect Assignments and Discussions:

Week 1-	Chapters 1 & 3
Week 2-	Chapter 4
Week 3-	Chapter 5
Week 4-	Chapter 6; **Test 1 (Chapters 1, 3-6)**
Week 5-	Chapter 7
Week 6-	Chapter 8
Week 7-	Chapters 9 & 11; **Test 2 (Chapters 7- 9, 11)**
Week 8-	Chapter 12 & 13
Week 9-	Chapter 16
Week 10-	Chapter 17
Week 11-	**Test 3 (Chapters 12-13, 16-17)**
Week 12-	Chapter 18
Week 13-	Chapter 19
Week 14-	Chapter 20
Week 15-	Chapter 21; **Test 4 (Chapters 18-21)**
Week 16-	**FINAL EXAM**

Evaluation/Grading Policy:

Lecture Average 70% of final course grade

The "lecture" component of this course will consist of online homework/quizzes through McGraw-Hill Connect and examinations with the following weight in calculating your final average:

10% Connect Online Homework and quizzes

40% Unit Assessments 1-4

20% Final Exam

What is McGraw-Hill Connect?

The McGraw-Hill Connect provides you with access to your ebook. Additionally, within each Connect Folder in Blackboard you will see a link to three different activities: 1) Learn Smart, 2) Chapter Assignment, and 3) Quiz.

1) LearnSmart assignments are beneficial to your understanding of the material. **These are not figured into your course grade**; however, students have said that doing the LearnSmart exercises improved their grades. This guided reading helps identify areas that you are having trouble understanding and provides you with some "tutoring" in those areas. I have set the Learn Smart to take average of 30-45 minutes, however, you can spend as much time on these reading activities as you need.
2) Homework assignments **are required and figured into the course grade**. These can be done 2 times before the due date. Five percent will be deducted for the 2nd try. There is no time limit, so it is advisable to start early and work on this all during the week. Use of the eBook and hints are available with no deductions. Feedback will be shown after submitting each attempt. After the first attempt, you will see what questions you got correct or incorrect. After the 2nd attempt, a more detailed feedback is given. Printing is allowed on homework assignment questions. Study attempts: After the due date, these homework assignments will be available for practice without changing your grade. Assignments are automatically submitted on the due date. If you do not complete the assignment before that time, a grade of zero will automatically be recorded in the gradebook. If you open the assignment after the due date as a study attempt, you cannot receive an extension on the work.
3) Quizzes are **required and figured into the course grade**. Quizzes are usually 20 – 25 questions with a time limit of 30 minutes. Please use these quizzes to determine whether you have a true understanding of the material. Each quiz can be taken 2 times before the due date. Five percent will be deducted for the 2nd try, but I have set the quizzes and the homework assignments to take the highest grade so it is to your advantage to correct your work and review the questions. The quizzes will not be submitted automatically on the due date but there will be a 10% deduction of the grade for each day you are late with the submission.

Lab Average 30% of final course grade

The "lab" component of this course will consist of hands-on laboratory activities in the Microbiology lab. Your lab average is derived from the following:

10% Lab Reports

10% Lab Practicals and Written Tests

10% Unknown Identification Experimental Procedure and Written Report

Lab Reports are graded based on attendance in lab, completion of the lab exercises, and successful answering of questions presented. Short answer questions are expected be answered in complete sentences in **your own** words. Lab Reports that show evidence of being copied from any web site or are identical with any other submitted reports will be given a grade of zero.

Grading

Final Grades will be determined as follows: 90.0 --- 100 = A
80.0 --- 89.9 = B
70.0 --- 79.9 = C
60.0 --- 69.9 = D
59.9 and < = F

The last day to drop the course with a grade of W is **Thursday, April 9th, 2020.** 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.

Student Responsibilities/Expectations:

Northeast Texas Community College is a "community of scholars." Please remember that you and all students in this class are pursuing very important goals in your lives. As scholars, I expect every student to be courteous to other individuals. It is expected that you will adhere to all college policies on academic honesty.

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." 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.