



**BIOL 2420 Microbiology (BIOL 2420.085)**  
**Course Syllabus: Summer 2020**

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*“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”*

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Weekends
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*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 introduces 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.

The required lab kit is a separate purchase available from the NTCC College Store.

**Required Textbook/Lab Kit:**

- Cowan, 2015, Microbiology Fundamentals: A Clinical Approach, 3rd Edition with Connect Publisher: McGraw Hill
- eScience Microbiology Lab Kit 6610

**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:**

Weeks 1 - 2 Chapters 1, 3, 4, and 5

Weeks 3 - 4 Chapters 7, 8, 9, and 11

**Week 5- Midterm and Lab Practical One at Proctored Testing Center**

Weeks 6 - 7 Chapters 12, 13, 16, and 17

Weeks 8 - 9 Chapters 18, 19, 20, and 21

**Week 10- Final Exam and Lab Practical Two at Proctored Testing Center**

## **Labs**

Weeks 1 - 2 Labs 1, 2, 3, and 4

Weeks 3 - 4 Labs 5 and 6

**Week 5- Midterm and Lab Practical One at Proctored Testing Center**

Weeks 6 - 7 Labs 7 and 8

Weeks 8 - 9 Labs, 9, 10, and 13

**Week 10- Final Exam and Lab Practical Two at Proctored Testing Center**

## 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 homework, Connect quizzes, NCLEX Questions
- 20% Unit Assessments 1-4 (taken in Respondus Lockdown Browser)
- 20% Midterm Test (taken at an approved, proctored location)
- 20% Final Test (taken at an approved, proctored location)

## 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 four different activities: 1) Learn Smart, 2) Chapter Homework, 3) Quiz, and 4) NCLEX Questions.

- 1) LearnSmart assignments are beneficial to your understanding of the material. **LearnSmart assignments 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 2<sup>nd</sup> 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 grade book. 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 2<sup>nd</sup> 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.
- 4) NCLEX questions are **required and figured into the course grade**. NCLEX questions typically are comprised of 15 questions. There is no time limit. NCLEX questions are automatically submitted on the due date. If you do not complete the NCLEX questions before that time, a grade of zero will automatically be recorded in the grade book. If you open the NCLEX questions after the due date as a study attempt, you cannot receive an extension on the work.

### **Lab Average 30% of final course grade**

The “lab” component of this course will consist of online and hands-on laboratory activities through eScience Lab Kit for Microbiology:

15% eScience Kit Online, hands-on Lab Reports, LearnSmart Lab Assignments

15% Lab Practicals (mid-term and final taken at the proctored testing location).

Lab Reports are graded based on documented evidence of completion of the lab exercise (**photos included in your lab report and your signature evident**) and successful answering of questions presented. Short answer questions are expected to 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.’

Learn Smart Lab Assignments are virtual labs completed through Connect.

### **Additional Information:**

This is an online course in Microbiology. Both lecture and laboratory study materials and assignments will be delivered through the Blackboard Learning Management System at NTCC. You are required to also purchase an eScience lab kit to complete the lab component of the course. Students should ensure that they have the appropriate hardware, software, and technical skills for completing all assignments, labs and tests.

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, July 30, 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. **Failure to officially withdraw will result in your receiving a grade of F.**

### **Assignments/Exams/Midterm/:**

Homework and quizzes are assigned using McGraw-Hill Connect. Each assignment or quiz will be due at a specific time in the semester related to the lecture schedule. There are 4 Unit tests. Each test will be taken through Respondus Lock-down Browser. The unit tests are intended to prepare you for the mid-term exam and/or the final. Read the information in the “Start Here” folder to familiarize yourself with the process for downloading the browser. The mid-term and final exams are proctored exams. You **MUST** schedule a time at an approved testing center to take these exams. There are **NO EXCEPTIONS** to this requirement. Refer to the posted calendar in the “Start Here” folder for appropriate dates.

### **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 students and the instructor in all online experiences. As your instructor, I will make a conscientious effort to provide you with a variety of teaching and learning formats to help you in your efforts to be successful in microbiology.

I 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 online expectations:

1. Schedule and plan to complete all lecture and laboratory assignments and submit them when they are due. Be sure to print off the calendar to help you keep up with assignment due dates.
2. Be sure to do all your own work. Collusion and plagiarism are acts of academic dishonesty.

**Other course (lab) requirements:**

The eScience Lab Kit contains almost all the materials that you will need. There are a few items that you should be prepared to supply to complete some labs. These include the following: access to a microwave oven or hot water bath; isopropyl (rubbing alcohol); soil sample; local water samples; an apple; disposable plastic pan.

**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.