



**BIOL 2420 Microbiology (BIOL 2420.002)  
Course Syllabus: Spring 2025**

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

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday and Weekends
	8:30 – 12:30 p.m. and by appointment TEAM Meetings Available Upon Request	8:30 – 9:30 a.m. and by appointment TEAM Meetings Available Upon Request	8:30 – 12:30 p.m. and by appointment TEAM Meetings Available Upon Request	8:30 – 9:30 a.m. and by appointment TEAM Meetings Available Upon Request	Email <a href="mailto:lpresley@ntcc.edu">lpresley@ntcc.edu</a>

***This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.***

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

**Course Description:** 4 Semester Credit Hours. 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. This course 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.

**Prerequisite(s):** None

**COURSE 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. Perform basic microbiology procedures including proficient use of light microscope, staining techniques, and aseptic techniques for transfer, isolation, quantification, and observation of bacteria.
  11. Use different types of bacterial culture media and biochemical tests to grow, isolate, and identify microorganisms.
  12. Demonstrate making a wet mount and basic identification protocols based on microscopic morphology of some common fungi and parasites.

### **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% online homework and quizzes (taken in Connect\*)

40% Unit Assessments 1-4

20% Final Test

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

The lab component of this course will consist of online laboratory activities through Connect and hands-on activities performed in the laboratory.

10% Lab Reports, Quizzes, and Connect Virtual Labs

10% Lab Practicals/Assessments (Mid-term and Final)

10% Unknown Identification Experimental Procedure, Dichotomous Keys, Virtual Labs, ID Unknown Quiz, 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 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.

\*See Connect description in the Appendix of Additional Information located on the last pages of the syllabus.

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

**Required Instructional Materials:**

**Textbook:** Cowan, Evergreen 2024 Release, Microbiology Fundamentals: A Clinical Approach, 4th Edition with Connect

**Publisher:** McGraw Hill

**ISBN Number:** 2805858751733

**Lab Manual:** Hearn & Deming, 2025, Biology 2420/21 Laboratory Manual for Microbiology

**Publisher:** NTCC Bookstore

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.

**Communications:** NTCC email is the official form of communication used by the college. The instructor will respond to student emails within 24 hours of receipt. **You should NOT expect an immediate response from your instructor in reply to your email.** While I will try to respond in a timely fashion, I do not always have my phone on my person, and I do not have notifications set on my phone to alert me the moment an email arrives in my inbox. (On the weekends it may be up to 48 hours after receipt of email.) Feedback and grades on assignments and postings will be posted 48 to 72 hours after due date/time of assignment.

**Institutional/Course Policy:** 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. Late assignments are not accepted unless the student can provide a compelling reason for submitting late work. No tests or exams may be taken late.
2. Be sure to do all your own work. Collusion and plagiarism are acts of academic dishonesty.
3. The last day to drop the course with a grade of W is **April 10, 2025**. 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.

**Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC’s website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

**Statement Regarding the Use of Artificial Intelligence (AI) Technology:**

Absent a clear statement from a course instructor, use of or consultation with generative AI shall be treated analogously to assistance from another person (collusion). Generative AI is a subset of AI that utilizes machine learning models to create new, original content, such as images, text, or music, based on patterns and structures learned from existing data (Cornell, Center for Teaching Innovation). Unauthorized use of generative AI tools to complete an assignment or exam is not permitted. Students should acknowledge the use of generative AI and default to disclosing such assistance when in doubt. Individual course instructors may set their own policies regulating the use of generative AI tools in their courses, including allowing or disallowing some or all uses of such tools. Students who are unsure of policies regarding generative AI tools are encouraged to ask their instructors for clarification. **(Adapted from the Stanford University Office of Community Standards-- accessed August 31, 2023)**

**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.

## Eagle Assist

At Northeast Texas Community College, we understand that students often need support that extends beyond the classroom. “Eagle Assist” is the place to start when looking for that type of assistance. Our support system is here to help you succeed in both your academic and personal growth. [www.ntcc.edu/eagleassist](http://www.ntcc.edu/eagleassist)

### Services provided:

- [Mental Health Counseling](#)
- [Classroom Accommodations](#)
- [NTCC Care Center Food & Hygiene Closet](#)
- [Financial Literacy](#)
- [Students with Children](#)
- [Emergency Aid](#)
- [Tutoring](#)

Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, mental health, alcohol or other drugs, identities, finances, etc.

[Mental Health Counseling Services](#) are available on campus- in person and online - to all NTCC students at no cost. If you are experiencing concerns, seeking help is a courageous thing to do. You can also contact us directly at [counseling-center@ntcc.edu](mailto:counseling-center@ntcc.edu)

### Tentative Lecture Timeline (\*note\* instructor reserves the right to adjust this timeline at any point in the term):

Week 1-	Chapter 1 Introduction to Microbes and Their Building Blocks and Chapter 3 Bacteria and Archaea
Week 2-	Chapter 3 Bacteria and Archaea cont. and Chapter 4 Eukaryotic Cells and Microorganisms
Week 3-	Chapter 5 Viral Structure and Chapter 6 Microbial Nutrition and Growth
Week 4-	Chapter 6 Microbial Nutrition and Growth and <b>Test 1 (Chapters 1, 3 - 6)</b>
Week 5-	Chapter 7 Microbial Metabolism
Week 6-	Chapter 8 Microbial Genetics
Week 7-	Chapters 9 Physical and Chemical Control of Microbes and Chapter 11 Interactions Between Microbes and Humans and <b>Test 2 (Chapters 7 - 9, and 11)</b>
Week 8-	Chapter 12 Host Defenses I: Overview and Nonspecific Defenses and Chapter 13 Host Defenses II: Specific Immunity and Immunization
Week 9-	Chapter 16 Infectious Diseases Affecting the Skin and Eyes
Week 10-	Chapter 17 Infectious Diseases Affecting the Nervous System; <b>Test 3 (Chapters 12, 13, 16, and 17)</b>
Week 11-	Chapter 18 Infectious Diseases Affecting the Cardiovascular and Lymphatic Systems
Week 12-	Chapter 19 Infectious Diseases Affecting the Respiratory System
Week 13-	Chapter 20 Infectious Diseases Affecting the Gastrointestinal Tract
Week 14-	Chapter 21 Infectious Diseases Affecting the Genitourinary System
Week 15-	<b>Test 4 (Chapters 18 - 21) and Lab Practical Two</b>
Week 16-	<b>FINAL EXAM (comprehensive)</b>

## BIOL 2420 Microbiology Lecture Due Dates

Week 1	Jan	22	Classes Begin
Week 2		26	Connect Orientation for Course Success Due Chapter 1 Homework Due, Chapter 3 and 4 HW Due
		28	Chapter 1 Quiz Due, Chapter 3 and 4 Quizzes Due
Week 3	Feb	02	Chapter 5 Homework Due
		04	Chapter 5 Quiz Due
Week 4		09	Chapter 6 Homework Due
		11	Chapter 6 Quiz Due
		12	<b>Test 1 (Chapters 1, 3, 4, 5, and 6)</b>
Week 5		16	Chapter 7 Homework Due
		18	Chapter 7 Quiz Due
Week 6		23	Chapter 8 Homework and Chapter 8 Additional Homework Due
		25	Chapter 8 Quiz Due
Week 7	Mar	02	Chapter 9 HW Due Chapter 11 HW Due
		04	Chapter 9 Quiz Due Chapter 11 Quiz Due
		05	<b>Test 2 (Chapters 7, 8, 9, and 11)</b>
Week 8		09	Chapter 12 HW Due
		11	Chapter 12 Quiz Due
Week 9		23	Chapter 13 HW Due
		25	Chapter 13 Quiz Due
Week 10		30	Chapter 16 HW Due
	April	01	Chapter 16 Quiz Due
Week 11		06	Chapter 17 HW Due
		08	Chapter 17 Quiz Due
		09	<b>Test 3 (Chapters 12, 13, 16, and 17)</b>
		10	<b>Last Day to Withdraw</b>
Week 12		13	Chapter 18 HW Due
		15	Chapter 18 Quiz Due
Week 13		20	Chapter 19 HW Due
		22	Chapter 19 Quiz Due
Week 14		27	Chapter 20 HW Due
		29	Chapter 20 Quiz Due
Week 15	May	04	Chapter 21 HW Due
		06	Chapter 21 Quiz Due
		07	<b>Test 4 (Chapters 18, 19, 20, and 21)</b>
Week 16		14	<b>COMPREHENSIVE FINAL EXAM at 2:00 p.m.</b>

## Appendix of Additional Information:

### **\*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) SmartBook, 2) Chapter Assignment, and 3) Quiz.

- 1) **SmartBook assignments are not figured into your course grade; however, they will be used as extra credit assignments. Each Chapter SmartBook completed with a grade of 100 will result in at least one extra point added to the Unit Test score in which that chapter is covered.** Students have said that doing the SmartBook exercises improved their grades as SmartBook assignments are beneficial to your understanding of the material. This guided reading helps identify areas that you are having trouble understanding and provides you with some “tutoring” in those areas. Each Chapter SmartBook will take an average of 60 - 90 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, 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 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 be submitted automatically on the due date.

**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.