



## BIOL 2420: Microbiology Course Syllabus

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

**Dr. Brenda Deming**

**Office:** UHS 160

**Phone:** 903-434-8294

**Email:** [bdeming@ntcc.edu](mailto:bdeming@ntcc.edu)

*The purpose of becoming educated is not the mere memorization of facts, but to learn to think critically.... how to analyze those facts and use them to solve problems.*

Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	8:45 – 9:15 am 3:30 – 5 pm	3:30 – 5 pm	8:45 – 9:15 am 3:30 – 5 pm	3:30-5:00 by appointment	Email & Blackboard message	Email & Blackboard message

*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 (include prerequisites):** Survey of microbiology emphasizing microbial morphology, metabolism, growth, and genetics. The classification of microorganisms with emphasis on biological principles and medical significance to humans is also included.

### Required Textbooks:

**Lecture:** Cowan and Bunn, Microbiology Fundamentals, A Clinical Approach; 2<sup>nd</sup> Edition, McGraw-Hill Publishing: McGraw-Hill. Choose **one** of the following options.

**ISBN:** 9781259293177 This is the eBook with Connect.

**ISBN:** 9781259629990 This is a soft covered textbook with Connect

**ISBN:** 9781259384554 This is the textbook in loose-leaf format with Connect

**Exclusive Access:** We have negotiated with the Publisher to obtain a discounted price for your lecture course materials. Your ebook and Access Code are included with your tuition and will be available through Blackboard on the first class day. 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 exclusive 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 Access Code from another vendor. You will receive a refund for the Exclusive Access if you opt out.

**Lab:** The following lab manual is required.

- Hearron & Deming, 2015, Microbiology Lab Manual, NTCC

**Optional: This atlas is not required, but strongly recommended.**

- Leboffe and Pierce, A Photographic Atlas for the Microbiology Laboratory; Morton Publishing.

**Blackboard Website:**

- I maintain a “Blackboard” website for you to obtain outlines of powerpoints, notes, study aids, reviews, etc. This is also the location where grades will be posted.

**Microbiology Student Learning Outcomes (SLOs):**

1. Describe distinctive characteristics and diverse growth requirements of prokaryotic organisms compared to eukaryotic organisms and provide examples of the impact of microorganisms.
2. Distinguish between mechanisms of physical and chemical agents to control microbial populations.
3. Explain the unique characteristics of bacterial metabolism and bacterial genetics.
4. Describe evidence for the evolution of cells and organelles from early prokaryotes.
5. Understand characteristics of acellular infectious agents (viruses and prions) and cellular infectious agents (prokaryotes and eukaryotes).
6. Describe functions of host defenses and the immune system in combating infectious diseases and explain how immunizations protect against specific diseases.
7. Use and comply with laboratory safety rules, procedures, and universal precautions.
8. Perform basic microbiology procedures including use of light microscope, staining techniques, and aseptic techniques for transfer, isolation and observation of bacteria.
9. Use different types of bacterial culture media and biochemical tests to grow, isolate, and identify microorganisms.
10. Communicate results of scientific investigations, analyze data and formulate conclusions using critical thinking and scientific problem-solving skills.

**Lectures & Discussions:**

- Week 1- Welcome
- Week 2- Introduction to Microbes and Their Building Blocks
- Week 3- Bacteria, Archaea, and Eukaryotes
- Week 4- Viral Structure and Life Cycles
- Week 5- Microbial Nutrition, Growth and Metabolism
- Week 6- Metabolism
- Week 7- Physical and Chemical Control of Microbes
- Week 8- Interactions Between Microbes and Humans
- Week 9- Host Defenses
- Week 10- Infectious Diseases Affecting the Skin and Eyes
- Week 11- Infectious Diseases Affecting the Nervous System
- Week 12- Infectious Diseases Affecting the Cardiovascular and Lymphatic Systems
- Week 13- Infectious Diseases Affecting the Respiratory Systems
- Week 14- Infectious Diseases Affecting the Gastrointestinal Tract
- Week 15- Infectious Diseases Affecting the Genitourinary System

- Week 16- Exam

### Evaluation/Grading Policy:

**Lecture Average 60% of final course grade**

**Lab Average 40% 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 final lecture average:

#### **24% Exams (4 exams; each = 6%) Scantrons and a “Bluebook” will be needed for exams.**

- Exam 1 covers textbook Chapters 1, 3, 4, 5, and corresponding Connect assignments.
- Exam 2 covers textbook Chapters 6, 7, 9, 10, and corresponding Connect assignments.
- Exam 3 covers textbook Chapters 11, 12, 16, 17 and corresponding Connect assignments.
- Exam 4 covers textbook Chapters 18,19,20,21 and corresponding Connect assignments.
- Final Exam is a comprehensive exam covering **all** of the coursework this semester
  - **A student must take the final exam in order to pass the course.**

#### **21% Final – Comprehensive.**

- See the schedule for the date of the final exam.

#### **15% Connect Online Assignments**

- **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.
  - These should take an average of 35-50 minutes.
- **Homework assignments** are required and **figured into the course grade.**
  - These can be done 2 times (2x) before the due date. Five % will be deducted for the 2<sup>nd</sup> try.
  - There is no time limit so it’s 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.
  - **Study attempts:** After the due date, these homework assignments will be available for practice without changing your grade. These study attempts allow students to retake and review the material, as well as get feedback, as many times as desired without the attempt affecting the grade. These are not available until after the due date. However, **this option prevents the ability to give an extension. If the due date is missed for any reason, a zero will be given.**
- **Quizzes** are required and **figured into the course grade.**
  - These are NCLEX-based prep questions

- Usually 15 – 25 questions.
  - These can be done 2 times before the due date. Five % will be deducted for the 2<sup>nd</sup> try.
  - Upon submission of answers, you will see correct and incorrect indicators, as well as total scores. Feedback will be shown after the due date.
  - Quizzes have a time limit of 30 minutes.
- For both Connect Homework and Connect Quizzes, **don't wait until the last day or two to complete the assignment.** If you have Connect problems, that will NOT be a reason to be late. It is your responsibility to contact Connect and get any problems resolved. However, before you get in touch with Connect, send me an email telling me your problem. This way I can check to make sure that everything is set correctly on my end. **Since it may take me 24 hours to get back with you, this is even more reason not to wait until the last minute.**
- The 4 lowest Connect assignment grades will be dropped. The grade is continuously recalculated every time a grade is entered so that the grade you are seeing is the grade with the lowest grades dropped.

#### Lecture-associated Make-up Work:

- Make-up Exams: It is the student's responsibility to get in touch with the instructor **immediately** if an exam is missed. **If** a makeup exam can be given, there will be no bonus points added. A failing course grade will result if the comprehensive final exam (#5) is missed or if two or more exams are missed. Changes to this policy are solely up to the discretion of the instructor.
  - **Full credit will not be given if the exam is taken late.**
- On occasion assignments may be given in class. There is no makeup for daily work. All assignments are due at the **beginning** of the period, and must be turned in **in person**. Lecture assignments will be **accepted only** on the due date.

**The "Lab" component** of this course will consist of written and Hands-on laboratory activities, as well as two lab practicals and project:

15%: Weekly lab exercises and safety quiz

- 3 lowest will be dropped

12%: 2 lab practicals

13%: Identification & research of unknown microorganisms

#### Lab-associated Make-up Work and/or Missed Labs:

- **Students will be dropped from the course if three lab periods are missed.**
- Late lab exercises will not be accepted regardless of the reason.
- The three lowest grades will be dropped. The grade is continuously recalculated every time a grade is entered so that the grade you are seeing is the grade with the lowest grades dropped.

- Missed lab practicals will be given if possible; however, if not possible a grade of zero will be given. **Full credit will not be given if taken at a time other than the regularly scheduled time.**

### **Reminder to all Students Concerning the Laboratory Portion of the Course**

- **ABSOLUTELY NO FOOD OR DRINK CAN BE BROUGHT INTO THE LAB. PLEASE CONSUME ALL FOOD AND DRINK BEFORE YOU ENTER THE LAB.**
- Safety is of the utmost importance. Safety procedures will be explained and followed exactly during lab.
- To make the most of your laboratory experience, you will need to read each laboratory exercise **PRIOR** to attending lab each day. Familiarize yourself with all relevant terms and be sure that you have a general understanding of the objectives of each exercise.
- Portions of the Lab Assessment may be assigned to be completed and turned in at the beginning of the lab period. The remaining laboratory exercise will be completed during the lab period. Turn in the lab assessment at the end of lab unless otherwise instructed.
- Keep up with all returned lab reports. Place them in your notebook and use them to study from for the lab practicals.
- **Students will be required to spend time other than regularly scheduled lab period time for Lab Exercise #16 – Identification of Unknown Bacteria**
- Each student will be required to bring a roll of paper towels for lab. Each student will also be required to purchase a ½ inch three-ringed binder/notebook, a waterproof marking pen, a roll of waterproof tape, microscope slides, and gloves.

**Course grades** will be determined as follows:

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

#### **Please note:**

- You will be given opportunities for bonus points; therefore, the above numerical grade scale will be followed as shown, and no curve applied.
- Due to FERPA, student privacy regulations, you will need to provide a written note listing anyone who will be allowed to pick up your work or to whom I will be able to speak about your grade or attendance.

#### **Lecture and Lab Schedules:**

- These are posted on Blackboard.
- All schedules for this semester are approximate and may be changed as needed.

#### **Student Responsibilities/Expectations:**

- Phone use will be allowed ONLY if used in a class exercise. **Please silence and put away your phones during class.** Multiple studies have shown that the human brain cannot concentrate on your phone and what is going on in class at the same time.
- Cell phone use violations may result in your dismissal from class and will be reflected in your course grade.
- Per instructions, cell phones will be turned in, displayed, or put away when an exam is given and also when it is reviewed.

#### **Last Day to Drop the Course:**

- The last day to drop the course with a grade of “W” is given on the schedule.
- 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.**

#### **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.

- **Cutting and pasting answers or copying answers is cheating. Students who cheat will be disciplined and may be removed permanently from the class.**

#### **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.