

**COLLIN COUNTY COMMUNITY COLLEGE DISTRICT
LECTURE SECTION SYLLABUS**

COURSE NUMBER: BIOL 2420

COURSE TITLE: Microbiology

COURSE DESCRIPTION

Classification, cell structure, metabolism, and historical concepts of microorganisms including bacteria, viruses, fungi, protozoa, Chlamydia and Rickettsia. Infectious diseases and immunology will be emphasized. Practical microbiology will include diagnostic microbiology of water, food, sewage, soil, and industrial applications. Laboratory methods are stressed, and experimentation with pure cultures of medical, environmental, and industrial importance is used extensively. Lab required.

4 credit hours.

CREDIT HOURS: 4 **LECTURE HOURS:** 3 **LAB HOURS:** 4

PRE-REQUISITE: BIOL 2401 with a grade of “C” or better within the last five years or consent of Department Chair or Associate Dean.

PRE or CO-REQUISITE: BIOL 2402 (Lecture and Lab)

CO-REQUISITE: BIOL 2420 lab

COLLEGE REPEAT POLICY: A student may repeat this course only once without special approval after receiving a grade, including “W”.

COURSE DELIVERY METHOD

Lectures will be combined with group discussions, and alternative learning methods (computer programs, interactive video software, slides, transparencies, films, etc.) will be used to augment lecture topics. Student presentations and research papers will also be used.

TEXTBOOK

“Microbiology: with Diseases by Taxonomy” Bauman 5th Edition
Modified (New Design) Mastering Microbiology

SUPPLIES

Required: Internet access
Suggested: Notebook

STUDENT LEARNING OUTCOMES

1. Describe the distinctive characteristics of prokaryotic cells, and the diverse growth requirements of prokaryotic organisms. (*Communication*)
2. Explain different ways that microbial growth can be controlled, and define the importance of selective toxicity in terms of treating infectious diseases. (*Empirical and Quantitative Skills*)
3. Explain the unique characteristics of bacterial metabolism and bacterial genetics, and discuss how antibiotic resistance and virulence mechanisms evolve in bacteria. (*Critical Thinking Skills*)
4. Compare the characteristics and reproduction of acellular infectious agents (viruses and prions) with cellular infectious agents (bacteria, protozoa, and fungi).
5. Describe the function of host defenses and the immune system in combating infectious diseases, and explain how immunizations protect against specific diseases.
6. Explain the transmission and virulence mechanisms of cellular and acellular infectious agents, including key microbes such as HIV, Influenza A, *Staphylococcus aureus*, and *Mycobacterium tuberculosis*. (*Empirical and Quantitative Skills*)
7. Develop collaborative and communication skills while working with classmates to apply course concepts to practical situations. (*Teamwork Skills, Communication Skills, Critical Thinking Skills*)

COURSE REQUIREMENTS

Lecture exams will be scheduled covering the text and lecture topics. Several group discussions will be held on assigned topics. The laboratory grade will be integrated with the lecture grade to produce the overall course grade at the end of the semester.

METHOD OF EVALUATION

Overall course grade: Lecture 65% Laboratory 35%

ATTENDANCE POLICY

Lecture attendance is mandatory. Individual conflicts with this policy are to be discussed with the instructor. Students who stop attending class and do not officially withdraw from the course will be assigned a grade of “F”. **Religious Holy Days:** please refer to the current Collin Student Handbook. The last day to withdraw is during the 8th week of school on 3/09/18.

AMERICAN DISABILITIES ACT STATEMENT

It is the policy of Collin County Community College 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 contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) in a timely manner to arrange for appropriate accommodations.

ACADEMIC POLICIES

Every member of the Collin College Community is expected to maintain the highest standards of academic rigor. Collin College may initiate disciplinary proceedings against a student accused of scholastic dishonesty. Scholastic dishonesty includes, but is not limited to statements, acts, or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work material that is not one's own. Scholastic dishonesty may involve, but is not limited to, one or more of the following acts: cheating, plagiarism, collusion, use of annotated texts or teacher's editions, use of information about exams posted on the Internet or electronic medium, and/or falsifying academic records. While specific examples are listed below, this is not an exhaustive list and scholastic dishonesty may encompass other conduct, including any conduct through electronic or computerized means:

Plagiarism is the use of an author's words or ideas as if they were ones own without giving credit to the source, including, but not limited to, failure to acknowledge a direct quotation.

Cheating is the willful giving or receiving of information in an unauthorized manner during an examination, illicitly collaborating with another student during an examination without authority; using, buying, selling, soliciting, stealing, or otherwise obtaining course assignments and/or examination questions in advance, copying computer or Internet files, using someone else's work for assignments as if it were one's own, or any other dishonest means of attempting to fulfill the requirements of a course.

Collusion is intentionally or unintentionally aiding or attempting to aid another in an act of scholastic dishonesty, including but not limited to, failing to secure academic work; providing a paper or project to another student; providing an inappropriate level of assistance; communicating answers to a classmate about an examination or any other course assignment; removing tests or answer sheets from a test site, and allowing a classmate to copy answers.

Contact the Dean of Students for the student disciplinary process and procedures or consult the *Collin Student Handbook* for additional information.

STUDENT CONDUCT

The college expects students to conduct themselves in class in such a way as to not interfere with or disrupt the educational process. Students are to speak and act in a respectful manner toward their fellow students and the professor. Those who participate in inappropriate behavior such as, excessive talking, cell phone or pager use, verbal altercations, or blatantly disregarding instructor's directions will be asked to leave the class. Continuance of such behavior will result in permanent removal.

LATERAL TRANSFER POLICY

Lateral transfers will not be granted after the 4th week of class or after the first lecture exam, which ever comes first. Exceptions to this are for documented changes in work schedule or family emergencies. If a student does transfer to another section, all previous grades will accompany the student. However, the new instructor can require the student to retake any exam or quiz. For questions concerning this policy, contact the Biology Department Chair.

WITHDRAWAL POLICY - Course Drop Limit Provisions

Students who enroll as an entering freshman or a first-time college student in undergraduate courses at any Texas public community college, technical institute, health sciences institution, or any public university offering undergraduate courses must comply with the legislation of TEC51.907. TEC51.907 states that students who enroll for the first time during the fall 2007 semester or any subsequent semester are subject to the course drop limit of six course drops. This includes any course a transfer student has dropped at another institution. Collin College will not begin to count dropped courses until the fall 2008 semester.

NOTE: You will not be allowed to withdraw from classes at Collin if your official transcripts (required for admission) are not on file. For more information go to <http://www.collin.edu/aro/withdrawal.htm>.

IF YOU HAVE DIFFICULTIES

First contact your instructor. If you are unable to resolve the problem, contact the appropriate Associate Dean of Academic Affairs.

INSTRUCTOR ADDENDUM

Please read and review the instructor addendum regarding specific course information, schedule, and contact information

http://faculty.collin.edu/mweis/Microbiology/Microbiology%20Main%20Pages/micro_main_navigation.htm

**BIOLOGY 2420 - MICROBIOLOGY LECTURE
SPRING SEMESTER
TENTATIVE DISTRICT COURSE CALENDAR**

WEEK	TOPICS	CHAPTERS COVERED
1	<p style="text-align: center;">***1/15 MLK Holiday***</p> <p style="text-align: center;">Course Introduction and Overview</p> <p style="text-align: center;">The Chemistry of Microbiology</p> <p style="text-align: center;">Prokaryotic Cell Structure & Classification</p>	<p style="text-align: center;">1 (in part)</p> <p style="text-align: center;"><i>Students should know chemical concepts</i></p> <p style="text-align: center;">11 (in part)</p>
2	<p style="text-align: center;">Microbial Cell Structure and Function</p> <p style="text-align: center;">Microbial Metabolism</p>	<p style="text-align: center;">3</p> <p style="text-align: center;">5</p>
3	<p style="text-align: center;">Microbial Growth & Culture Methods</p> <p style="text-align: center;">Microbial Genetics</p>	<p style="text-align: center;">6</p> <p style="text-align: center;">7</p>
4	Physical & Chemical Control	9
5	Antibiotics	10
6	Classification of Viruses	13 (in part)
7	Epidemiology	14
8	<p style="text-align: center;">Host Defense: Innate Immunity</p> <p style="text-align: center;">Host Defense: Acquired Immunity</p> <p style="text-align: center;">*** 3/09 Last Day to Withdraw ***</p>	<p style="text-align: center;">15</p> <p style="text-align: center;">16</p>
*****Spring Break*****		
9	Vaccines	17 (pp. 485-493)
10	Gram-positive Diseases	19
11	Gram-negative Diseases	20
*** Spring Holiday 3/30-4/1***		
12	Other Bacterial Diseases	21
13	<p style="text-align: center;">Viruses & Prions</p> <p style="text-align: center;">DNA Virus Infectious Diseases</p>	<p style="text-align: center;">13 (pp. 390-401)</p> <p style="text-align: center;">24</p>
14	RNA Virus Infectious Diseases	25
15	<p style="text-align: center;">RNA Virus Infectious Diseases</p> <p style="text-align: center;">Bioterrorism</p>	<p style="text-align: center;">25</p> <p style="text-align: center;">26 (pp. 772-776)</p>
16	Final Exam Week	

Note: The instructor reserves the right to make changes to the course calendar as needed. Any changes will be discussed in class or else notification will be sent out via cougar mail. Please see instructor addendum for specific calendar assignments and assessments.