General Microbiology [MICR 2340-23017], Spring 2021

Lecture Time: **Mondays and Wednesdays at 10:00pm - 11:20am, Online**

Instructor: Dr. Sangeeta Tiwari, Department of Biological Sciences
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Office Hours 9:30-10am on Wednesday OR appointment by Email: stiwari@utep.edu

Textbook: Brock Biology of Microorganisms (By Madigan),16th edition. **REQUIRED**
iClicker Cloud Polling App or web access
Respondus Lockdown Browser
Blackboard and Zoom access
Reference: Not required

Course Description: The first portion of this course is "Biology" from the "micro" perspective, using microorganisms as relatively simple and experimentally friendly models for understanding basic biological processes. This is followed by a survey of the role of microorganisms in industry, medicine, ecology, and evolution. Successful completion of this course provides the student with an understanding of basic molecular biology and biochemical processes and introduces to specialized microbiology courses such as Microbial Physiology, Microbial Ecosystems, Pathogenic Microbiology and Prokaryotic Microbiology. The level of success of an individual student is largely dependent on the effort of that student.

Learning Objectives: At the conclusion of this course, students are expected to achieve the following objectives:

1. Understand the concepts of three domains of life
2. Understand the basic structure and physiology of microbial cells, such as cell structure, cell membranes, metabolism, reproduction, communications, etc.
3. Understand the basic processes of the "Central Dogma": DNA replication, RNA transcription, and protein translation.
4. Understand the basic principles of microbial genetics and their applications.
5. Understand the roles of microbial cells in environments and in ecosystems.
6. Understand the general application of microbiology in different fields, including agriculture, industry, medicine, etc.

Instructor's philosophy and you: I consider that my main task is not to present material, but to help you understand the material. I cannot do that without your active participation. I expect students to have read the chapter(s) for each lecture BEFORE class. The success of this class depends on constant feed-back from you and the other students, both in and outside of class, both formal and informal.

Blackboard, Zoom and Computer Access: This course is absolutely dependent on your being able to access and use Blackboard and zoom. All lectures, quizzes & exams and other course communications will be done through the course website.

ACADEMIC DISHONESTY. It is the official policy of the University of Texas at El Paso that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. All persons involved in academic dishonesty will

be disciplined in accordance with University regulations and procedures. Please see http://www.studentaffairs.utep.edu for details.

BLACKBOARD. I will post all materials for this course on Blackboard. It is your responsibility to download anything required for the class session and to bring it with you to class. I strongly recommend that you visit the course Blackboard site before each class. RATs will be given on Blackboard.

MISSED EXAMS. If you know ahead of time that you will not be able to take an exam on the scheduled date, notify me and I will allow you to take the exam, with no penalty. If you miss an exam and you can provide reasonable PROOF for your absence, the exam will be rescheduled at my convenience but must be taken before the graded exam is distributed to the class. If you miss the exam and you cannot provide proof for your absence, there will be NO make-ups!!

LATE HOMEWORK. Homework is due at the beginning of class ONLY on the due date WITH NO EXCEPTIONS. LATE homework will NOT be accepted.
Failure to turn in an on-time assignment will result in an automatic score of zero.

On-line Exams in Blackboard:

a. Exams will be given on-line in Blackboard. They are open/close at indicated time frame, and students have to login blackboard and finish them in time. **Please check syllabus and blackboard carefully for the time to take the exams**. The Final exam is NOT comprehensive.
b. **MISSED EXAMS.** If you know ahead of time that you will not be able to take an exam on the scheduled date, notify me and I will preschedule your exam with no penalty. If you miss an exam and you can provide PROOF/Certificate of emergency for your absence, the exam will be rescheduled at my convenience but must be taken before the graded exam is distributed to the class. If you miss the exam and you cannot provide proof for your absence, there will be NO make-ups!!
c. PPT lectures provide only the outlines and backbones of the covered materials, and it is your responsibility to look for and learn the details from the textbook. It is impossible for the instructor to cover all of the materials in any given chapter in the class, but the questions in on-line tests could come from any part of the chapter, including the materials not covered by the instructor. So be sure to read the whole chapters in the textbook to prepare your exams.
d. While you are not required to purchase a textbook, access to the textbook is essential for your success in the course. Please get the textbook either by purchase (new or used) or borrow from others. A copy of the textbook is reserved in circulating desk at UTEP library.

COURTESY. As a courtesy to your classmates, please give your full attention to all speakers and limit your in-class discussions to topics related to pathogenic microbiology. Cell-phones and pagers must be turned off during class sessions. The use of laptop or notebook computers or tablets during class sessions is limited to note-taking and coursework only – please refrain from browsing the internet or checking your email during class. Please be on time for class – roll may be taken at the start of each class.

DROP POLICY. As per policy of the College of Science, a student may not take the same course more than three times, including dropped courses. The College of Science aligns with UTEP with respect to the drop date of April 1st 2021. No requests for a withdrawal will be approved after that date. Students can always petition the Registrar for a complete withdrawal from all course pending documentation.

INDIVIDUAL READINESS ASSESSMENT TESTS (iRATs). These will be given on Blackboard and are designed to test your knowledge of the material presented in your reading assignments.

The RATs will ensure that you are keeping up with the class and will help me to focus my lectures on the topics you find most challenging. A total of 14 RATs will be given and will be graded. Each RAT is worth 10 points. Each RAT must be completed 1.0 HOURS before each day's class, that is by 9:00 am on class days. You will have 15-60min minutes (depends on the timing provided by instructor on the basis of difficulty of the material) in which to take each RAT and will have access to it only once. The RATs that are due on Monday will be available at 3 pm the previous Friday and those that are due on Wednesday will be available at 3 pm on Monday. You may use your class notes and/or textbooks during each RAT but remember you only have 15-60 minutes as indicated in instructions or announcement of each iRAT to complete the test. **Each student has to submit their own RAT on the blackboard to be graded.**

Grading Policy

IN SUMMARY, grades will be calculated as follows:

iRATs	230 points (23 iRATs/10 points each)
Exams	500 points (10 exams/50 points each)
Final Exam	200 points
Homework	50 points (2 homework's/25 points each)
In class activities/Participation	20 points
Totals	1000 points

Where, A = 90 – 100%
B = 80 – 89.9%
C = 70 – 79.9%
D = 60 – 69.9%
F = 59.9% and below

Or the final grade will be détermined by a curve, decision will be taken by instructor.

Academic Integrity Policy: UTEP's policies regarding academic integrity apply in this course. Information on this policy can be found at http://academics.utep.edu/Default.aspx?tabid=23785.

Civility Statement: Please be respectful of all students' right to learn without disruption. In keeping with this statement, please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.

Disability Statement: The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Course Lecture Schedule (Tentative! May be modified by instructor.):

Date		Lecture (Lec)	Reading	iRAT or HW due/Exam
01/20	W	Introduction to Microorganisms and Microbiology	Lec 1	
01/25	M	Microbial cell structure and function-I	Lec 2	
01/27	W	Microbial Metabolism -I	Lec 3	
02/01	M	Microbial Metabolism -II SG	Lec 3	
02/03	W	Microbial Metabolism -III SG	Lec 3	iRAT 1
02/08	M	Review – Ch1-3	Lec 3	iRAT 2
02/10	W	Molecular Microbiology -I	Lec 4	iRAT3/Exam 1 (Lec1-3)
02/15	M	Molecular Microbiology -II	Lec 4	iRAT4
02/17	W	Microbial growth and growth control –I	Lec 5	iRAT5, Exam 2 (Lec 4)
02/22	M	Microbial growth and growth control –II	Lec 5	iRAT6

02/23	T	Review by Richard on Lec5		
02/24	W	Metabolic Regulation- I	Lec 6	iRAT7, Exam 3 (Lec 5)
03/01	M	Metabolic Regulation- II	Lec 6	iRAT8, **HW 1 posted**
03/2	T	Review by Richard on Lec 6		
03/03	W	Viruses and Their Multiplication	Lec 7	iRAT9, Exam 4 (Lec 6)
03/08	M	Genetics of Bacteria – I	Lec 8	iRAT10,
03/09	T	Review by Richard on Lec 7		
03/10	W	Genetics of Bacteria - II	Lec 8	iRAT11
03/15	M	Spring Break		
03/17	W	Spring Break		
03/22	M	Genetic Engineering and Biotechnology- I	Lec 9	iRAT12, Exam 5 (Lec 7-8)
03/24	W	Genetic Engineering and Biotechnology- II	Lec 9	iRAT13, **How 1 due**
03/25	R	Review by Richard on Lec 9		
03/29	M	Microbial Interaction with Human -I	Lec10	iRAT14, Exam 6 (Lec 9)
03/31	W	Microbial Interaction with Human -II	Lec10	iRAT15
04/01	R	Review by Richard on Lec 10		
04/05	M	Immunity and Host Defense I	Lec11	iRAT16, Exam 7 (Lec 10)
04/07	W	Immunity and Host Defense II	Lec11	iRAT17, **HW 2 posted**
04/08	R	Review by Richard on Lec 11		
04/12	M	Immunity Mechanisms - I	Lec12	iRAT18, Exam 8 (Lec11)
04/14	W	Immunity Mechanisms- II	Lec12	iRAT19
04/15	R	Review by Richard on Lec 12		
04/19	M	Molecular Immunology -I	Lec13	iRAT20, Exam 9 (Lec12)
04/21	W	Molecular Immunology -II	Lec13	iRAT21
04/22	R	Review by Richard on Lec 13		
04/26	M	Diagnostic Microbiology - I	Lec14	iRAT22, Exam 10 (Lec13), **HW 2 due**
04/28	W	Diagnostic Microbiology – II	Lec14	iRAT23
04/29	R	Review by Richard on Lec 14		
05/10	M	Final Exam		Final Exam

Key dates from University Academic Calendar:
02/03/2021: Census Day
15/03/-19/03/2021: Spring Break
04/01/2021: Course drop/withdrawal deadline
05/06/2021: Last day of Classes
05/07/2021: Dead day