

PATHOGENIC MICROBIOLOGY (MICR 3343, CRN 25038)

Spring 2014

INSTRUCTORS: Dr. Kyle L. Johnson, Department of Biological Sciences
Dr. Charles T. Spencer, Department of Biological Sciences

OFFICE: Bioscience Research Building:
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OFFICE HOURS: Dr. Johnson: Mon & Wed, 3 - 5 p.m., or by appointment
Dr. Spencer: Tues & Thurs, 2 -4 p.m., or by appointment

LECTURE: Mon & Wed, 1:30 – 2:50 p.m., UGLC Room 220

TEXTBOOK: Murray, *et al.*, Medical Microbiology, 7th Edition **REQUIRED**

COURSE OBJECTIVES

This course provides an integrated approach to studying the mechanisms by which bacteria, viruses, fungi, and parasite cause human disease. Our objectives are:

1. To build a foundation of basic scientific principles in microbiology in order to interpret clinical problems
2. To develop familiarity with and understanding of standard microbiological procedures and instrumentation
3. To understand the appropriate laboratory techniques to be used for diagnosis of common infectious diseases

COURSE GOALS

1. Learn the fundamental concepts in medical microbiology
2. Apply the concepts you've learned
3. Extrapolate information and facts from what you already know
4. Communicate your understanding of microbiology
5. Learn to think critically

COURSE APPROACH

Each 90-minute class session will combine my lectures with cooperative learning activities. These activities are designed to give you the opportunity to participate in the learning process. In the first class session, we will form small groups of 5 students. You will remain a member of your group for the duration of the semester. We will use the groups for class discussions, group-learning exercises, clinical case reviews, and for homework assignments. The in-class activities will give each of you the opportunity to discuss issues that are posed to the class and may include course material from your textbook or new material not presented to you beforehand.

BLACKBOARD. We 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. We strongly recommend that you visit the course Blackboard site before each class. RATs will be given on Blackboard.

CLASS POLICIES

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 we will allow you to take the exam early, with no penalty. If you miss an exam and you can provide PROOF for your (reasonable)

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 (see schedule) 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.

HONORS AND GRADUATE CREDIT. Please see Dr. Johnson or Dr. Spencer by February 17 if you wish to take this course for honors credit or graduate credit (Undeclared Graduate and Masters' students only – Doctoral students may not take this course for graduate credit). In addition to the class requirements outlined below, we will assign a research paper on a topic relevant to current problems in pathogenic microbiology. An outline of your paper must be approved by April 16, and the paper is due May 5, together with a copy of the honors contract reporting form. Students must also earn a grade of B or better to receive honors or graduate credit.

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.

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 the Student Affairs website at <http://www.studentaffairs.utep.edu> for details.

DISABILITIES. If you have or suspect you have a disability and need an accommodation, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, at cass@utep.edu or go to Union Building East, Room 106.

GRADING SYSTEM

Grading is NOT based on a curve. You will each EARN a grade that reflects the effort you put into the course and the knowledge you have gained. Your grade will be based on a comprehensive assessment of your skills and their development throughout the course of the semester, using the following criteria.

1. READINESS ASSESSMENT TESTS (RATs). These will be given on Blackboard and are designed to test your knowledge of the material presented in class, in lab, and 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 25 RATs will be given, but only the 20 highest scores will count toward your final grade. Each RAT is worth 5 points. Each RAT must be completed TWO HOURS before each day's class, that is by 11:30 am on class days. You will have two hours in which to take each RAT and will have access to it only once. The RATs that are due on Mondays will be available at 3 pm the previous Friday and those that are due on Wednesdays will be available at 3 pm on Monday. You may use your class notes and textbooks during each RAT.

2. **HOMEWORK.** Four homework assignments will be given. These are problem-based learning sessions with your small groups. They focus on your ability to integrate basic science to the solution of clinical problems and will encourage you to work together, to develop critical thinking, to improve communication skills, and to get to know one another better. Groups will be presented with a clinical problem that you will discuss and diagnose. Scores will be based on participation and the answers to the specific problems given in class.

3. **IN-CLASS EXERCISES.** An in-class exercise will be completed in your small group during nearly every class session. These exercises comprise an essential component of your grade and **cannot be made up if missed**. Therefore, you are encouraged to come to class and to participate in the class discussions. The point total for these exercises is 200.

4. **EXAMS.** A total of FIVE exams will be given during the semester, each worth 100 points. The fifth exam is a MANDATORY, cumulative final that will be given during finals week. The exams will test your understanding of all of the materials covered in the textbook, in class, and on homework assignments, and your ability to APPLY the concepts you have learned. Expect that up to 25% of each exam could include material from the previous exam. Your lowest exam grade will be dropped, with no penalty, for a total of 400 possible exam points. The exams will combine multiple-choice and short-answer questions.

IN SUMMARY, the grades will be calculated as follows:

RATs	200 points (20 RATs/10 pts each)	= 20% of total
Exams	400 points (4 exams/100 pts each)	= 40%
Homework	200 points (10 cases/10 pts each)	= 20%
In-class exercises	200 points	= 20%
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Totals	1000 points	= 100%

Where, A = 900 – 1000
 B = 800 - 899
 C = 700 – 799
 D = 600 – 699
 F = 599 and below

CLASS SCHEDULE

Please note that the exact date on which we will discuss each topic is subject to change, depending on the pace of the course.

#	Day/Date	Topics	Reading – Chapter #
1	W Jan. 22	Introduction, group building exercise	-----
2	M Jan. 27	Bacterial classification, genetics, toxins	12, 13, 14
3	W Jan. 29	Laboratory diagnosis, antimicrobial agents,	16, 17
4	M Feb. 3	Corynebacteria, listeria, and bacillus	21 – 23
5	W Feb. 5	Staphylococcus, Streptococcus & Enterococcus	18 – 20
6	M Feb. 10	EXAM 1	-----
7	W Feb. 12	<i>Enterobacteriaceae</i>	27
8	M Feb. 17	Anaerobes; Mycobacteria	25, 36
9	W Feb. 19	Spirochetes, Vibrio cholerae and other vibrios	28, 39
10	M Feb. 24	Campylobacter and Helicobacter	29
11	W Feb. 26	Bacteria causing zoonotic disease	27, 33
12	M Mar. 3	Bordetella and Legionella	32, 34
13	W Mar. 5	Neisseria and Chlamydia	26, 43
--	Mar. 10-14	SPRING BREAK – NO CLASSES	-----
14	M Mar. 17	EXAM 2	-----
15	W Mar. 19	Introduction to virology, diagnostic virology	44 – 47
16	M Mar. 24	Antiviral therapies; polyoma, papilloma, & pox	48, 49, 52
17	W Mar. 26	Hepatitis viruses	63
--	M Mar. 31	CESAR CHAVEZ DAY – NO CLASSES	-----
18	W Apr. 2	Respiratory viral infections	50, 55 – 57
19	M Apr. 7	Enteroviruses, diarrhea viruses	54, 55, 59
20	W Apr. 9	<i>Arboviruses and zoonotic viruses</i>	60, 61
21	M Apr. 14	EXAM 3	-----
22	W Apr. 16	Human herpesviruses	51
23	M Apr. 21	Retroviruses and HIV	62
24	W Apr. 23	Rhabdoviruses and prion diseases	58, 64
25	M Apr. 28	Mycology	65 – 69, 72, 73
26	W Apr. 30	Parasitology I	76 – 80
27	M May 5	Parasitology II	81 – 83
28	W May 7	EXAM 4	-----
29	W May 14	FINAL EXAM (4:00 - 6:45 p.m.)	-----

DUE DATES FOR RATS, CCRS, HOMEWORK, AND EXAMS

#	Day/Date	Assignment Due
1	W Jan. 22	----
2	M Jan. 27	RAT 1
3	W Jan. 29	RAT 2
4	M Feb. 3	RAT 3
5	W Feb. 5	RAT 4; Homework 1 due in class
6	M Feb. 10	EXAM 1
7	W Feb. 12	RAT 5
8	M Feb. 17	RAT 6
9	W Feb. 19	RAT 7
10	M Feb. 24	RAT 8
11	W Feb. 26	RAT 9
12	M Mar. 3	RAT 10
13	W Mar. 5	RAT 11; Homework 2 due in class
--	Mar. 10-14	SPRING BREAK – NO CLASSES; RAT 12
14	M Mar. 17	EXAM 2
15	W Mar. 19	RAT 13
16	M Mar. 24	RAT 14
17	W Mar. 26	RAT 15
--	M Mar. 31	CESAR CHAVEZ DAY – NO CLASSES; RAT 16
18	W Apr. 2	
19	M Apr. 7	RAT 17 and RAT 18
20	W Apr. 9	RAT 19; Homework 3 due in class
21	M Apr. 14	EXAM 3
22	W Apr. 16	RAT 20
23	M Apr. 21	RAT 21
24	W Apr. 23	RAT 22; Homework 4 due in class
25	M Apr. 28	RAT 23; (Lab final week of Apr. 28)
26	W Apr. 30	RAT 24
27	M May 5	RAT 25; Honors papers due
28	W May 7	EXAM 4
29	W May 14	FINAL EXAM (4:00 - 6:45 p.m.)