

## PATHOGENIC MICROBIOLOGY LABORATORY (MICR 3144)

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

**LABORATORY** Biology Building, Room B412 - **ALL SECTIONS**. Exact days and times vary by section, as indicated below.

**LAB TEXT:** Murray, *et al.*, Medical Microbiology, 7<sup>th</sup> Edition - **REQUIRED** (same text used for MICR 3343 lecture course); Lab Manual posted on Blackboard.

### LABORATORY SECTIONS

Section/CRN	Lab meeting
25036	T 1:30 pm – 4:20 pm
25034	W 9:30 am – 12:20 pm
25035	W 3:30 pm – 6:20 pm
25037	F 1:30 pm – 4:20 pm

### LAB OBJECTIVES

This laboratory course and the accompanying lecture course (MICR 3343) together provide an integrated approach to studying the mechanisms by which bacteria, viruses, fungi, and parasites cause human disease. Our objectives in the laboratory are:

1. To develop familiarity with and understanding of standard microbiological procedures and instrumentation
2. To understand the appropriate laboratory techniques to be used for diagnosis of common infectious diseases
3. To learn the SAFE handling of pathogenic organisms

### LAB 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

### LABORATORY EXERCISES

The laboratory exercises are designed to teach fundamental microbiology techniques, including Gram staining, sterile technique, bacterial isolation, and clinical classification and identification of pathogenic organisms. The laboratory will meet in Room B412 of the Biology Building, starting the second week of class. The first session is a REQUIRED laboratory safety demonstration and lecture, which will instruct you in the proper use of the Biological Safety

cabinet. NO ONE will be allowed to work with pathogenic organisms without this training. Ten laboratory sessions will be conducted and EACH GROUP will prepare ONE lab report for each week's lab. Individually, you will also complete a comprehensive exam during the week of April 29.

## **LABORATORY POLICIES**

**SAFETY.** The laboratory objectives include learning the SAFE handling of REAL pathogenic organisms. These rules exist for your safety, since the pathogens we will be using in the lab can make you sick. The first laboratory meeting will be a REQUIRED training by UTEP's Office of Environmental Health and Safety. You will not be permitted to work in the lab until this training has been completed. You are required to provide a lab coat and safety glasses, which you must bring to the lab EACH WEEK; gloves will be provided. Only closed-toed shoes will be permitted and long hair must be pulled back OR placed in a hairnet. No food, drink, or application of cosmetics will be permitted in the laboratory.

**MISSING LAB.** Your group will only receive credit for a lab report if you attended the lab itself. If you know in advance that you will miss a lab session, you can attend the lab for a different section. However, you must have a reasonable excuse (going to the doctor is NOT a reasonable excuse!!). You CANNOT attend another lab section whenever you feel like it. If you miss a lab and need to attend another section, notify your TA so that you can be accommodated. If you miss a lab and have not made arrangements to attend another section, you will not receive credit for that lab, even if you turn in a lab report.

**LATE LAB REPORTS.** Each lab report is due ONE WEEK after the laboratory exercise has been concluded. It must be turned in to your TA at the beginning of lab. Lab reports will NOT be accepted on any other day. Failure to turn in a lab report will result in an automatic zero.

**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 and labs. The use of laptop or notebook computers or tablets during class and lab 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 session.

**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

**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](mailto: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. QUIZZES.** You must read each day's lab manual assignment BEFORE COMING TO LAB. The quizzes are designed to test your knowledge of the material presented in lab, in class, and in your reading assignments. Your TA will give the quiz **at the beginning of each laboratory period**, so please be on time to lab or you will miss that day's quiz. A total of 10 quizzes will be given.
- 2. HOMEWORK.** Twelve homework assignments will be given. Your TA will assign the homework during each laboratory meeting. The homework is designed to promote critical thinking and discussion. I encourage you to work on them with your groups, but each of you **MUST** turn in an assignment written in your OWN words. Any IDENTICAL assignments will result in an automatic zero for everyone involved.
- 3. LAB PARTICIPATION.** The laboratory section is a required part of the course. You will be graded on your attendance and the effort you make as a part of your lab group.
- 4. LAB REPORTS.** Lab Reports must be turned in ONE WEEK after each lab session. These are worth 25% of your lab grade. EACH GROUP will be required to turn in ONE common Lab Report.
- 5. FINAL EXAM.** A final exam will be given during the last laboratory period (week of April 28, exact date depends on the section in which you're enrolled). The lab final is worth 100 points. The exam will test your understanding of all of the materials covered in the laboratory and your ability to APPLY the concepts you have learned.

**In summary, laboratory grades will be determined as follows:**

Quizzes	200 points (10 quizzes/20 pts each)	= 20%
Homework	200 points (10 assignments/20 pts each)	= 20%
Lab Participation	250 points	= 25%
Lab Reports	250 points	= 25%
Final Exam	100 points	= 10%
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Total	1000 points	

## LABORATORY SCHEDULE

The Lab Manual will be available on BlackBoard during the second week of the semester. Background reading is found in your textbook (Murray et al, 7<sup>th</sup> Edition).

Lab	Week of	TOPICS	Reading
--	1/20	<b>NO LABS THIS WEEK</b>	-----
--	1/27	<b>LAB &amp; BIO SAFETY – REQUIRED</b>	Lab Manual
1	2/3	<i>Staphylococcus</i>	Ch. 18; Lab Manual
2	2/10	<i>Streptococcus</i> and <i>Enterococcus</i>	Ch. 19-20; Lab Manual
3	2/17	<i>The Enterobacteriaceae</i>	Ch. 27; Lab Manual
4	2/24	<i>Clostridium</i>	Ch. 36; Lab Manual
5	3/3	<i>Francisella</i>	Ch. 33; Lab Manual
--	3/10	<b>SPRING BREAK-NO CLASSES</b>	-----
6	3/17	<i>Neisseria</i>	Ch. 26; Lab Manual
7	3/24	Virus outbreak	Ch. 47, 58, 60; Lab Manual
--	3/31	<b>NO LABS THIS WEEK</b>	
8	4/7	Distinguishing specific viral species	Ch. 47, 58, 60; Lab Manual
9	4/14	<i>Saccharomyces cerevisiae</i>	Ch. 65, 73; Lab Manual
10	4/21	<i>Giardia</i>	Ch. 81; Lab Manual
--	4/28	Lab final	-----
--	5/6	<b>NO LABS THIS WEEK</b>	-----