

PATHOGENIC MICROBIOLOGY LABORATORY (MICR 3144)

Summer I 2018

INSTRUCTOR: Dr. Kyle L. Johnson, Department of Biological Sciences
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OFFICE HOURS: Tues & Wed, 2 - 4 p.m., or by appointment
LABORATORY: Biology Building, Room B412
LAB TEXT: Murray, *et al.*, Medical Microbiology, 8th Edition - **REQUIRED** (same text used for MICR 3343 lecture course); Lab Manual is posted on Blackboard.

LABORATORY SECTIONS

Section/CRN	Lab meeting
35269	TR 9:30 am – 11:20 am

LAB OBJECTIVES

This laboratory course and the accompanying lecture course (MICR 3343) together provide an integrated approach to studying the mechanisms by which bacteria 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 bacterial infections
3. To learn the SAFE handling of pathogenic bacterial 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 lab final exam during the week of April 23.

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.

MISSED LABS. You 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 a lab different section that week. However, you must have a reasonable excuse for doing so (going to the doctor is NOT a reasonable excuse, while missing lab to attend a scientific conference is reasonable). 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 your group turns in a lab report with your name on it.

LATE LAB REPORTS. Each lab report is due TWO WEEKS 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.

COURSE DROP DEADLINE. To receive an automatic "W", students must drop or withdraw from this class by the July 13, 2018 drop date listed in the academic schedule. The College of Science will not allow any course drops after this date, with no exceptions short of complete withdrawal from the University.

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 the Office of Student Conduct and Conflict Resolution (OSCCR) website at <http://sa.utep.edu/osccr/> for details.

DISABILITIES. If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, by email to cass@utep.edu, or go to Union Building East, Room 106. For additional information, please visit

the CASS website at <http://www.utep.edu/CASS>. CASS' Staff are the only individuals who can validate and if need be, authorize accommodations for students with disabilities.

HARASSMENT. Please be aware that harassment of any type is unacceptable in the classroom. No jokes or comments of sexual or racist nature will be tolerated. The student who uses harassment will be referred to the Office of Student Conduct and Conflict Resolution (OSCCR) for disciplinary action.

TITLE IX. Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination on the basis of sex in education programs or activities operated by recipients of Federal financial assistance. Sexual harassment of students, which includes acts of sexual violence, is a form of sex discrimination prohibited by Title IX. Sexual violence refers to physical sexual acts perpetrated against a person's will or where a person is incapable of giving consent due to the victim's use of drugs or alcohol. An individual also may be unable to give consent due to an intellectual or other disability. A number of different acts fall into the category of sexual violence, including rape, sexual assault, sexual battery, sexual coercion, stalking, and relationship violence. All such acts of sexual violence are forms of sexual harassment covered under Title IX. In accordance with Title IX of the Education Amendments of 1972, UTEP does not discriminate on the basis of sex in the operation of its educational programs and activities. This commitment to non-discrimination applies to both employment in and admission to such programs and activities. Inquiries regarding Title IX should be referred to the University's **Title IX Coordinator(s), whose contact information is provided on the University's website at <http://admin.utep.edu/Default.aspx?tabid=68750>.**

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, with 20 points possible for each, for a total of 200 points possible (20% of your grade).

2. HOMEWORK. A total of 10 homework assignments will be given with 20 points possible for each, for a total of 200 points possible (20% of your grade). 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 referral to the Office of Student Conduct and Conflict Resolution.

3. **LAB PARTICIPATION.** The laboratory section is a required part of the course. You will be graded on your attendance in lab (100 points possible) and the effort you make as a part of your lab group (150 points possible) for a total of 250 points (25% of your grade).
4. **LAB REPORTS.** Lab Reports must be turned in TWO WEEKS after each lab session. There will be 10 lab reports worth a possible 25 points each, for a total of 250 points (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 23, the exact date depends on the section in which you're enrolled). The lab final is worth 100 points and constitutes 10% of your lab grade. The final 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 (10 assignments/25 pts each)	= 25%
Final Exam	100 points	= 10%
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Total	1000 points	100%

LABORATORY SCHEDULE

The Lab Manual is available on BlackBoard. Background reading is found in the indicated chapters of your textbook (Murray *et al.*, 8th Ed.).

Lab	Date	TOPICS	Reading
--	T 06/12	LAB & BIO SAFETY – REQUIRED	Lab Manual
--	R 06/14	NO LAB	-----
1	T 06/19	Basic microbiological techniques	Lab Manual
2	R 06/21	<i>Staphylococcus</i>	Ch. 18; Lab Manual
3	T 06/26	<i>Streptococcus</i> and <i>Enterococcus</i>	Ch. 19; Lab Manual
4	R 06/28	<i>Diphtheroids</i>	Ch. 21; Lab Manual
5	T 07/03	<i>Acid-fast bacteria</i>	Ch. 22; Lab Manual
6	R 07/05	<i>Enterobacteriaceae</i>	Ch. 25; Lab Manual
7	T 07/10	<i>Pseudomonas</i>	Ch. 27; Lab Manual
8	R 07/12	<i>Campylobacter</i>	Ch. 28; Lab Manual
9	T 07/17	<i>Anaerobic bacteria</i>	Ch. 31; Lab Manual
10	R 07/19	<i>Spirochetes</i>	Ch. 32, Ch. 34; Lab Manual
--	T 07/24	Lab 10 follow-up	Lab Manual
--	R 07/26	Lab final	-----
--	T 07/31	Lab 10 report due	-----
--	R 08/02	NO LAB	-----