

# MEDICAL MICROBIOLOGY

**BIOL4350.501**

**WF; 5:30 PM - 6:45 PM**

**CB1 1.102**

**Instructor** Ruben D. Ramirez, M.D., Ph.D.

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**Office Hours** Monday & Wednesday, 1:00pm - 3:00pm

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## Course Pre-Requisite, Co-Requisite, and/or Other Restrictions:

Pre-requisite: Classical Molecular Genetics (BIOL3301) or General Microbiology (BIOL3V20).

## Required Textbook:

Medical Microbiology, seventh edition, by Patrick R. Murray, PhD, Ken S. Rosenthal, PhD and Michael A. Pfaller, MD (ISBN: 978-0-323-08692-9).

**Two copies of the lecture textbook (Murray's) are on reserve in the Library. Request these reserved books in Circulation Desk by referring to call numbers #13498 and #13499. They are set for 2-hour check out.**

## Description:

Course objectives: Medical Microbiology, BIOL 4350, will familiarize students with the disease and health relationship between microorganisms and humans. The goals of the course is to have students understand, especially from a molecular point of view, the process by which microorganisms can cause disease, virulence factors they possess, portals of entry and the consequences, host response to disease conditions, the signs and symptoms of a disease, chemical means by which diseases can be treated, methods used for identification of pathogenic organisms, and current information on pathogens and infectious diseases. Thus, this course will focus on why the biologic properties of organisms are important to disease in humans, and will examine etiology, epidemiology, host defenses, identification, diagnosis, prevention, and control for each microbe. Bacterial will comprise a large percentage of the pathogens studied and some viruses will also be included. There may be a short introduction to fungal pathogens.

## Student Learning Outcomes:

1. Categorize emerging vs. established diseases, describe molecular approaches to diseases diagnoses and explain the first and second lines of defense against diseases by the human body.
2. Explain how we combat diseases via vaccination and use of antibiotics as well the recurring problems of antibiotic resistance.
3. Describe the features, virulence factors, characteristics of the causative organism, symptoms and progression, resistance to antibiotics and other specific, especially molecular, reasons which contribute to the success of an organism as a human pathogen with regard to airborne, water and food borne, sexually transmitted, and vector and animal/insect borne diseases.

## Grading Policy:

1. Grades for lecture will be calculated as follows:
 

a. Lecture Exams (4)	90% (22.5% each exam score)	}	= 100%: Final Overall Grade
b. Quizzes	10%		
c. In-Class Assignments      Extra Points in exams			

2. Grading scale:

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A+	100-96	B+	87-85	C+	77-75	D+	67-65
A	95-92	B	84-82	C	74-72	D	64-62
A-	91-88	B-	81-78	C-	71-68	D-	61-58
						F	57 and below

3. Final grade will be rounded to the nearest integer, e.g., a final grade of 87.5 will round up to 88.00, thus letter grade "A-"; while a final grade of 87.49 will round down to 87.00, thus letter grade "B+". No points or fraction of a point (regardless how small) will be awarded to increase to the next letter grade up (**No Exceptions**).
4. Grades are determined based only on performance. Grades are not based on need, effort, or attendance.
5. I do not curve grades (do not ask, beg, cry or plead).

## Lecture Examinations:

Exam I - F, 9/16 at CB1 1.102 (Chapters 2, 12-14)

Exam II - W, 10/12 at CB1 1.102 (Chapters 8-9, 11 & Epidemiology)

Exam III - W, 11/09 at CB1 1.102 (Chapters 3, 17-21, 23, 25, & 36)

Exam IV - W, 12/07 at CB1 1.102 (Chapters 26-29, 32, 39, 41-43)

**\* Potential date for a Makeup Exam due to bad weather or other unexpected event is pending until the Office of the Registrar decides the date/time/classroom for final exam.**

## Course Policy:

Components of the course that will be used to calculate your final overall grade are:

1. Exams,
2. Quizzes, and
3. In-Class Assignments

1. Exams:

- a. Four (4) exams will be given during the semester. There will be no final exam.
- b. The test classroom and times for all four **lecture exams** will be **CB1 1.102, starting at 5:30pm**.
- c. **Chapter Review sessions** will be conducted by a TA. **The dates/times/room for these sessions are posted in page 6 of this syllabus**. Review sessions might consist on reviewing topics by lecturing and/or asking questions to students. So, it is recommended to come prepare to the review sessions. Review sessions will be just reviewing material... not

lecturing again. And, material covered in review sessions is not prepared from the exams either.

- d. The average of four lecture exams will count 90% of final overall grade (each lecture exam is 22.5% of final overall grade). No lecture exam will be dropped.
- e. The structure of the exams will be **multiple choice, true/false, and matching questions**. There will be **80 questions** and the time allowed to complete the exam will be **1 hour**. You will need a Scantron (ParSCORE, SCORE SHEET, Form No. F-1712-PAR-L) for all exams.
- f. **Bonus Points:** Bonus points (maximum 6 points) will be made available during all lecture exams. No bonus/extra points will be awarded to the final overall grade.
- g. Everything in the textbook is fair game for exams, regardless whether or not it is presented in class. You are responsible to use all of the information contained in the entire chapters to prepare for exams (regardless it is presented or not in class).
- h. For exam purposes only, when there are conflicts between the information contained in textbook (or any other outside source) and the material presented in class, the material presented by the professor in class will rule over what is written in textbook/outside source.
- i. Do not miss exams! (If exams are missed you must be able to verify your reason for missing)
- j. **Make-up lecture exams:** **Do not assume you are eligible to a makeup exam. It is up to the instructor to decide if a student is eligible for a make-up exam. Appropriate documentation must be supplied before any makeup exam is granted (please discuss with instructor what is considered an appropriate documentation).**

If there are circumstances that warrant a makeup, the instructor will determine the criteria for such an exam at the appropriate time. **However, be aware that the structure of makeup exams will be different than that specify in #1e above.**

The only Legitimate Reasons to make-up missed lecture exams are as follows: death of an immediate family member, bona fide medical emergencies, and military orders. Proper documentation must be presented in writing before a make-up is granted – **no exceptions**, and before the date of the regular exam.

**NOTE 1.- Make up exams will not be granted for other reasons, such as, trips to weddings, graduation, vacations, visits, etc. Please, do not purchase tickets for trips that would be during exam dates. If you must go to this trip or if it costs excessive amount of money to change trip tickets, reservations, etc., consider dropping the course from the fall 2016 semester. Please, do not ask for "other" ways.**

- k. **Late to Exam:** Exams are scheduled to begin at the same time as lecture (5:30pm). However, I usually take around 10-15 minutes to give a speech about different issues regarding the exam and to shuffle around the students in the room. So, no one has to arrive after I have done all of the above. Yet, someone might arrive late. Keep in mind that arriving after the exam has actually begun is very disruptive to your classmates. Be polite to your classmates and arrive on time.

**For those who arrive after the exam has begun:** It is the student responsibility to allow plenty time to arrive to the school to take exams, in case some awkward event happens, i.e., traffic jams, car accidents, etc. Therefore, neither one of these events will justify a student arriving late to an exam. For those who still arrive late to an exam, the following will be the penalties will apply:

1) if one (1) student finishes the exam, turns it in, and leaves the classroom before you arrive, you will not be allowed to take the exam, your score for the particular exam will be **zero (0)**, and there will be no makeup exam (**No EXCEPTIONS**).

2) if a student arrives after the exam has begun (and assuming no one has finished the exam and/or turned it in), then the student that arrived late will be given whatever amount of time is left to finish the exam (i.e., 1 hour is the normal time allowed to complete the exam, but if student arrives 15 minutes after the exam has started, then the student will be given only the remaining 45 minutes – which is the amount of time left – to complete the exam).

- l. Graded exams will not be reviewed in class. Exams will be kept on file in the instructor's office and will be available for review for 1 week (if student wants to review after this period of time, contact professor within this week to make appointment), starting the next day after the exam grades are posted in blackboard. The student is responsible for scheduling time to review. All issues regarding exam questions and grades must be resolved within this week. After this week, grades will be considered final.

2. **Quizzes:**

- a. Quizzes are taken in [eLearning](#).
- b. There will be a **maximum** of 10 quizzes posted in [eLearning](#). **Quiz schedule, periods to take the quiz, and the expiration dates (quizzes will disappear from [eLearning](#) after the expiration date) are found in page 6 of this syllabus.**
- c. Read the instructions prior to taking the quiz.
- d. Quizzes will be taken in [eLearning](#). You will have 1 week (168 hours) to take the quiz (due date /time will be shown in [eLearning](#)). Thus, do not procrastinate, because there will be no make-up for missing quizzes (**absolutely no exceptions**).
- e. A missed quiz will receive a zero (0).
- f. Quizzes are timed.
- g. Only **two attempts** to take quizzes are allowed (you will get the highest score out of the two attempts).
- h. The **lowest two (2) quizzes** will be **dropped**.
- i. The average of all quizzes minus the lowest two scores will count 10% of final overall grade.

3. **In-Class Assignments:**

- a. There **might** be **unannounced** in-class assignments (not all exams will have in-class assignment).
- b. In-class assignments may be comprised of either group or individual exercises, which may include case studies, review crossword puzzles, review worksheets, and perhaps other activities.
- c. Points (not to exceed 5 points per exam) earned in these assignments will be added only to the pertaining exams (not to the final overall grade).

**NOTE 2.- You will need a UTD photo ID to get into lecture exams. If you do not have an UTD photo ID presently, please make arrangements to get one before the first exam (photo ID on Driver Licenses/Cards/Badges are not considered substitute of UTD photo ID – we need your UTD number next to your photo in the same document, not just your photo). No exam or grade will be given to students without UTD photo ID (no exceptions). We are aware of the expense to attend college, but having an UTD Comet ID is a requirement set by the university for all UTD students.**

**NOTE 3.- The professor has the right to change the syllabus at any point during the semester.**

In keeping with the spirit of the Privacy Act, grades and/or grade information will not be given to anyone other than the student and will not be discussed over the phone.

[UT Dallas Syllabus Policies and Procedures:](#)

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

## LECTURE SCHEDULE:

WEEK	DAY	TOPIC	REQUIRED READING
1	8/24	Course Introduction and Overview	
	8/26	Bacterial Classification, Structure, and Replication	Chapter 12
2	8/31	Bacterial Classification, Structure, and Replication	Chapter 12
	9/02	Bacterial Metabolism and Genetics	Chapter 13
3	9/07	Bacterial Metabolism and Genetics	Chapter 13
	9/09	Commensal and Pathogenic Microbial Flora in Humans	Chapter 2
4	9/14	Mechanisms of Bacterial Pathogenesis (and Transmission)	Chapter 14
	9/16	<b>Exam I</b>	<b>Chps 2, 12-14</b>
5	9/21	Epidemiology	Class Notes
	9/23	Innate Host Responses (and Interferon in pages 86-89)	Chapter 8
6	9/28	Innate Host Responses (and Interferon in pages 86-89)	Chapter 8
	9/30	Antigen-Specific Immune Responses	Chapters 9
7	10/05	Antigen-Specific Immune Responses	Chapters 9
	10/07	Antimicrobial Vaccines	Chapter 11
8	10/12	<b>Exam II</b>	<b>Chps 8-9, 11 &amp; Epid.</b>
	10/14	Sterilization, Disinfection, and Antisepsis	Chapter 3
9	10/19	Antibacterial Agents	Chapter 17
	10/21	Pathogenic Gram Positive Bacteria: Staphylococcus	Chapter 18
10	10/26	Streptococcus	Chapters 19
	10/28	Streptococcus, Enterococcus	Chapters 19, 20
11	11/02	Bacillus, Corynebacterium	Chapters 21, 23
	11/04	Mycobacterium, Clostridium	Chapter 25, 36
12	11/09	<b>Exam III</b>	<b>Chps 3, 17-21, 23, 25, &amp; 36</b>
	11/11	Pathogenic Gram Negative Bacteria: Neisseria	Chapter 26
13	11/16	Enterobacteriaceae	Chapter 27
	11/18	Bordetella, Rickettsias/Coxiella	Chapters 32, 41, 42
14	11/23	***11/21 – 11/23 FALL BREAK***	<b>NO CLASS</b>
	11/25	***11/24 – 11/26 THANKSGIVING HOLIDAYS***	
15	11/30	Vibrio & Campylobacter/Helicobacter	Chapters 28, 29
	12/02	Spirochetes, Chlamydia/Chlamydothila	Chapter 39 & 43
16	12/07	<b>Exam IV</b>	<b>Chps 26-29, 32, 39, 41-43</b>
	12/09	***END OF SEMESTER***	<b>NO CLASS</b>

NOTE 4- These descriptions and timelines are subject to change at the discretion of the Professor.

\*\*\*THURSDAY, 10/27 LAST DAY TO WITHDRAW\*\*\*

## QUIZZES IN eLEARNING

#	Chapter	Posted Period	Expiration
1	12	08/31, 7:00pm – 09/07, 11:59pm	09/07, 11:59:00pm
2	13	09/07, 7:00pm – 09/14, 11:59pm	09/14, 11:59:00pm
3	02/14	09/14, 7:00pm – 09/21, 11:59pm	09/21, 11:59:00pm
4	08	09/28, 7:00pm – 10/05, 11:59pm	10/05, 11:59:00pm
5	09	10/05, 7:00pm – 10/12, 11:59pm	10/12, 11:59:00pm
6	11/17	10/19, 7:00pm – 10/26, 11:59pm	10/26, 11:59:00pm
7	Gram +	11/04, 7:00pm – 11/11, 11:59pm	11/11, 11:59:00pm
8	Gram +	11/04, 7:00pm – 11/11, 11:59pm	11/11, 11:59:00pm
9	Gram -	12/02, 7:00pm – 12/09, 11:59pm	12/09, 11:59:00pm
10	Gram -	12/02, 7:00pm – 12/09, 11:59pm	12/09, 11:59:00pm

## BIOL4350 Lecture Exams

	Day	Date	Time	Room
Lecture Exam I	Friday	09/16/16	5:30pm - 6:45pm	CB1 1.102
Lecture Exam II	Wednesday	10/12/16	5:30pm - 6:45pm	CB1 1.102
Lecture Exam III	Wednesday	11/09/16	5:30pm - 6:45pm	CB1 1.102
Lecture Exam IV	Wednesday	12/07/16	5:30pm - 6:45pm	CB1 1.102

## Chapter Review Sessions for BIOL4350 Lecture Exams

	Day	Date	Time	Room
Review for Exam I	Saturday	09/10/16	2:00pm - 4:00pm	Pending
Review for Exam II	Saturday	10/08/16	2:00pm - 4:00pm	Pending
Review for Exam III	Saturday	11/05/16	2:00pm - 4:00pm	Pending
Review for Exam IV	Saturday	12/03/16	2:00pm - 4:00pm	Pending

NOTE 5.- The professor has the right to change these dates/times of these activities at any point during the semester. If any major changes are made, I will update promptly in Announcements in eLearning.