

Medical Microbiology (MBIO 4300) Syllabus, Fall 2018

Lecture: 1:00 - 1:50 PM, M-W-F

Lab: 2:00 – 4:50 PM, M

Room: Naraghi Hall, 322 (Lec), 331 (Lab)

Instructor: Dr. Choong-Min Kang

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Office hours: 12:00 PM - 1:00 PM, T & R
Other hours may be scheduled on an individual basis.

Course Description: This course provides learning opportunities in the basic principles of medical microbiology and infectious disease. It covers mechanisms of infectious disease transmission, principles of aseptic practice, and the role of the human body's normal microflora. The biology of bacterial, viral, fungal, and parasitic pathogens and the diseases they cause are covered. Relevant clinical examples are provided. The course provides the conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body. It also provides opportunities to develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in the diagnosis of infectious diseases.

Course Credits: This is a 4-credit course

Course Prerequisites: Students are required to have completed MBIO 3010/3032 or equivalent. Those who managed to enroll in this course without satisfying this prerequisite will probably not succeed in this course and for this reason will be required to drop it. Students who have questions about these prerequisites should see the instructor.

Reference for the class: No textbook is required but you may buy

Medical Microbiology, 5th edition, 2012, Mims *et al.*

Every effort will be made to provide the lecture slides on Blackboard a day or more before class. However, not all the slides from each lecture will be provided on Blackboard and some slides may only be shown in class.

Exams & Grades: A total of 750 points are possible for the course. Each exam will follow a similar format, although the final exam will be twice longer. You will be required to answer multiple choice, short answer, and short essay-type questions. The final exam will be cumulative.

Grading summary:

5 regular Exams (120 pts/exam)	600 points
Group presentation	50 points
Written lab exam	50 points
Lab report	50 points

Total points possible

750 points

Missed exams due to illness or extenuating family circumstances will require formal written documentation. Make-up exams may be offered on a case-by-case basis.

Exam corrections: When each exam is returned, you will have **ONE WEEK** to correct errors in grading or challenge a question on the exam. Corrections and inquiries about specific exam questions must occur in person during office hours.

Group presentations: Students will be grouped into 8 groups and each group will choose an infectious disease or any current issues related to microbial infections. Examples of the topics are,

Drug-resistant TB
Influenza virus outbreaks
Co-infection of TB and HIV
Chloroquine-resistant malaria
E. coli 0157:H7
Zika virus
Ebola virus
Salmonellosis...

Students must consider following questions when they present their study.

1. What is the cause of the infection or problem?
2. What is the mechanism that the infectious agent use when it harms us?
3. What are the pathologies/symptoms of the disease?
4. What kinds of treatment, if any, are available? How does the treatment work? What can we do in the future?

Group presentations will be held during the lab session. Each group will be given 15-20 min plus 5 min of discussion. Pre-presentation practice can be arranged by appointments with the instructor.

Final Course Grade: The final grade for this course will be derived from the total points earned divided by the total number of points possible for the course. This numerical value will be converted to a percentage.

The course grade will be derived from the following scale:

A = 90 - 100%
B+ = 85 - 89%
B = 80 - 84%
C+ = 75 - 79%
C = 70 - 74%
D+ = 65 - 69%
D = 60 - 64%
F = 0 - 59%

Lecture Policy: Every effort will be made to begin and end lectures on time. Please try to be in your seats when class starts and do not leave class prematurely.

Students who insist on talking during class will be asked to leave if they continue to disturb the lecture. Questions and other dialog with the instructor are, of course, encouraged.

Cheating Policy:

Any individuals caught cheating will automatically receive a grade of "F" for the course.

You must arrive on time for the exam. Students who arrive after the first student has finished with the exam and left the room will not be allowed to take the exam.

Students will not be allowed to leave the room during an exam. Once a student has left the room, he or she will not be allowed to return.

Absolutely no talking among students will be tolerated during the exam.

Course Outline: The lecture topics listed below are tentative and subject to change.

Week	Date	Topic
1	22-Aug	Introduction to Medical Microbiology
	24-Aug	Introduction to Medical Microbiology
2	27-Aug	The host-parasite relationship
	29-Aug	The host-parasite relationship
	31-Aug	The host-parasite relationship
3	3-Sep	Labor Day - no class
	5-Sep	Mechanisms of pathogenicity
	7-Sep	Mechanisms of pathogenicity
4	10-Sep	Mechanisms of pathogenicity
	12-Sep	Mechanisms of pathogenicity
	14-Sep	Exam 1
5	17-Sep	Gram-positive cocci pathogens
	19-Sep	Gram-positive cocci pathogens
	21-Sep	Gram-positive cocci pathogens
6	24-Sep	Gram-positive rods pathogens
	26-Sep	Gram-positive rods pathogens
	28-Sep	Gram-negative cocci pathogens
7	1-Oct	Gram-negative cocci pathogens
	3-Oct	Gastrointestinal Gram-negative rods
	5-Oct	Exam 2
8	8-Oct	Gastrointestinal Gram-negative rods
	10-Oct	Non-Instructional Day - No class
	12-Oct	Gastrointestinal Gram-negative rods
9	15-Oct	Gastrointestinal Gram-negative rods
	17-Oct	Clostridia and other anaerobic rods
	19-Oct	Spirochetes
10	22-Oct	Spirochetes
	24-Oct	Mycoplasma and Chlamydiae
	26-Oct	Mycoplasma and Chlamydiae
11	29-Oct	Exam 3
	31-Oct	Mycobacteria
	2-Nov	Mycobacteria
12	5-Nov	Mycobacteria
	7-Nov	Noneveloped DNA viruses
	9-Nov	Noneveloped DNA viruses
13	12-Nov	Veteran's Day - no class
	14-Nov	Noneveloped DNA viruses
	16-Nov	Noneveloped DNA viruses
14	19-Nov	Enveloped DNA viruses
	21-Nov	Exam 4
	23-Nov	Thanksgiving
15	26-Nov	Enveloped DNA viruses
	28-Nov	Enveloped DNA viruses
	30-Nov	Retoviruses
16	3-Dec	Retoviruses
	5-Dec	Retoviruses
	7-Dec	Retoviruses
17	10-Dec	Retoviruses
18	17-Dec	Exam 5 (11:15 AM)

Laboratory:

Gain hands-on experience with basic methods of culturing, identifying, and handling of pathogenic bacteria. Many experiments will require previous skills you learned during the pre-req Bacteriology class. The tentative lab schedule is shown.

This is tentative schedule and subject to change

Week	Date	Topic
1	8/27	Introduction, Lab safety, and Check-in
2	9/3	Labor Day - no class
3	9/10	Sterilization techniques & preparing culture media
4	9/17	Microbial flora of the Mouth: Determination of susceptibility to Dental caries
5	9/24	Normal microbial flora of the throat and skin
6	10/1	Identification of Human Staphylococcal pathogens
7	10/8	Identification of Human Streptococcal pathogens
8	10/15	Identification of <i>Streptococcus pneumoniae</i>
9	10/22	Identification of Enterics
10	10/29	Isolation of your GI tract bacteria
11	11/5	Identification of your GI tract bacteria
12	11/12	Identification of your GI tract bacteria
13	11/19	Identification of your GI tract bacteria
14	11/26	Identification of your GI tract bacteria
15	12/3	Group presentations
16	12/10	Lab final exam