

PHARMACEUTICAL MICROBIOLOGY (30:158:420) – Fall 2015

REQUIRED TEXTBOOK

Talaro, K.P. & Chess, B. "Foundations in Microbiology" 9th ed.
 McGraw-Hill Publishers, 2015. ISBN 978-0-07-352260-9
 (8th edition is also fine) Bring your **iClicker** (required, see below)

LECTURE

Tuesday 8:40 a.m. – 10:00 a.m., **Hill 114**
Friday 8:40 a.m. – 10:00 a.m., **ARC 103**
Recitation (When Announced)
 Wednesday 10:35 a.m. – 11:30 a.m., Pharmacy 111

FACULTY

L. Cartegni, Ph.D., Lab for Cancer Research, Rm. 252, 848-445-8018
 P. Furmanski, Ph.D., Lab for Cancer Research, Rm. 215, 848-445-7244
 *F. Liu, Ph.D., CABM, Rm. 103, 848-445-9783
 R. Zhou, Ph.D., Lab for Cancer Research, Rm. 217, 848-445-7246
 * Course Coordinator Email: fangliu@cabm.rutgers.edu

Date	Lecturer	Lecture	Topic
9/1	Tues	Liu	1 Introduction and Methods for Studying Microorganisms (Chapters 1, 3)
9/4	Fri	Furmanski	2 Prokaryotic and Eukaryotic Cell Structures and Gram Stain (Chapters 4,5)
9/8 – Monday schedule (No Class)			
9/11	Fri	Furmanski	3 Microbe-Human Interactions: Infection and Disease (Chapter 13)
9/15	Tues	Furmanski	4 Introduction to Host Defenses & Innate Immunities (Chapter 14)
9/18	Fri	Furmanski	5 Adaptive Specific Immunity & Immunization (Chapter 15)
9/22	Tues	Furmanski	6 Immunization and Disorders in Immunity (Chapters 16)
9/25	Fri	Furmanski	7 Disorders of Immunity & autoimmune Diseases (Chapter 16)
9/29	Tues	Furmanski	8 Identifying Pathogens and Immune Methods of Diagnosis (Chapter 17)
10/2	Fri	Liu	9 Microbial Nutrition and Growth, Control of Growth (Chapter 7, 11)
10/6	Tues	Liu	10 Microbial Genetics (Chapter 9)
10/9	Fri		EXAM 1 (36.2% of grade) - Lectures 1-10, 8:40 a.m. – 10:00 a.m., ARC 103
10/13	Tues	Liu	11 Antibiotics: Principles of Antibiotic Mechanisms (Chapter 12)
10/16	Fri	Liu	12 Antibiotics: Inhibition of Cell Wall Biosynthesis (Chapter 12)
10/20	Tues	Liu	13 Antibiotics: Inhibition of Protein and Nucleic Acid Synthesis (Chapter 12)
10/23	Fri	Cartegni	14 Medical Bacteriology: Cocci of Medical Importance (Chapter 18)
10/27	Tues	Cartegni	15 Medical Bacteriology: Cocci of Medical Importance (Chapter 18) cont.
10/30	Fri	Cartegni	16 Medical Bacteriology: Gram + Bacilli (Chapter 19)
11/3	Tues	Cartegni	17 Medical Bacteriology: Gram-Negative Bacilli (Chapter 20)
11/6	Fri	Cartegni	18 Medical Bacteriology: Spirochetes, etc. (Chapter 21)
11/10	Tues	Zhou	19 Parasitology I (Chapter 23)
11/13	Fri		EXAM 2 (28.9% of grade) - Lectures 11-18, 8:40 a.m. – 10:00 a.m., ARC 103
11/17	Tues	Zhou	20 Parasitology II (Chapter 23)
11/20	Fri	Zhou	21 Principles of Virology (Chapter 6)
11/24	Tues	Zhou	22 DNA Viruses (Chapter 24)
11/25	Wed	Zhou	23 RNA Viruses and Cancer (Chapter 25)

(11/25 is designated as Friday class)

THANKSGIVING RECESS – November 26-29, 2015

12/1	Tues	Zhou	24 HIV and AIDS/Antiviral Agents (Chapter 25)
12/4	Fri	Liu	25 Fungal Diseases and Antifungal Agents (Chapter 22)
12/8	Tues	Liu	26 Prions, Mad Cow Disease and Jacob Creutzfeldt Disease (Chapter 25)

FINAL EXAM (28.9% + 4% of grade) – Lectures 19-26, To be announced

A Diseases and Organisms exam (to be given during the final exam) will count for 4% of the final grade and attendance will count for 2% of the final grade. Attendance is monitored by iClicker. **Please see the attached Syllabus Part II on credit for attendance/iClicker.**

Syllabus, Handouts, Exam Grades and other important information will be posted on this web site:

<https://sakai.rutgers.edu/portal> ← Register Your iClicker on Sakai (click on the iClicker tool, enter the 8 character remote ID, and activate). **Please note: This course does not use iClicker GO.**

Pharmaceutical Microbiology Syllabus Part II (30:158:420)

Fall Semester, Second Professional Year, 3 credits

Lectures: Tuesdays in Hill 114, 8:40 – 10:00 a.m.; and Fridays in ARC 103, 8:40 – 10:00 a.m.

Recitation (When Announced): Wednesdays 10:35 – 11:30 a.m.; Pharmacy 111

Instructor/Course Coordinator: Professor Fang Liu (848-445-9783; fangliu@cabm.rutgers.edu)
CABM and Department of Chemical Biology
Ernest Mario School of Pharmacy, Rutgers University

Faculty Lecturers: Professor Luca Cartegni (848-445-8018; luca.cartegni@pharmacy.rutgers.edu)
Professor Philip Furmanski (848-445-7244; furmansk@rci.rutgers.edu)
Professor Renping Zhou (848-445-7246; rzhou@rci.rutgers.edu)

Prerequisites: The student is expected to have successfully completed the course work of the first professional year before taking this course.

Introduction and Course Description: Microbiology refers to the study of organisms that are too small to be seen with the naked eye. Microbiology is broader than one might think and includes the study of bacteria, fungi, protozoa, algae, parasites, helminths, and viruses. This course focuses on those organisms that are capable of causing disease as well as the study of our immune system and the mechanisms it uses to defend against pathological microorganisms. Also included are the mechanisms of pharmacological agents such as antibiotics, which are used to control infectious microorganisms.

Course Objectives: The student should gain a basic knowledge of the major infectious diseases in humans and the organism/s that are responsible for their cause and be able to answer the following questions. How do you differentiate between strict pathogens and opportunistic pathogens? What makes some people more susceptible to certain infections? What is the utility of the Gram stain? Why some bacteria are considered beneficial. How does genetic background influence the incidence and severity of malaria? What is the difference between innate and acquired immunity, or the difference between artificially and naturally acquired immunity? Why is it contraindicated to prescribe broad-spectrum antibiotics for every infection? What is the mechanism for formation of antibody specificity and diversity? These are only a few of the questions that the student should be able to answer by the end of the course.

Lectures will be posted on Sakai before the classes. It is important that students print and review the lectures to be better prepared for the classes. The iClicker brand personal response system will be required for this class.

Textbook: “Foundations in Microbiology” 9th edition, K.P. Talaro and B. Chess, McGraw-Hill Publishers, 2015. The 8th edition of the textbook is also fine.

Grading: There are two exams and a final exam. Each exam is counted as a percentage of your final score (Exam 1 = 36.2%, Exam 2 = 28.9%, Final Exam = 28.9%). All three exams consist of multiple-choice questions, and the final exam is not cumulative except for one section which counts for 4% of the final score. This cumulative section consists of a list of diseases and the type of organism causing the disease, which is given the first day of class. The iClicker is used in every lecture to engage students and evaluate class comprehension. Class attendance is monitored by iClicker response and contributes to 2% of the final score. Grades are distributed using the following scale: 100-90 = A; 89-85 = B+; 84-80 = B; 79-75 = C+; 74-70 = C; 69-60 = D; 59 or less = F.

Please note: This course does not use iClicker GO. You will need to have an iClicker Classroom Response System remote.

Credit for Attendance/iClicker: If a student is unable to attend a class due to sickness (or having a compelling reason) and wants to get attendance credit, the student should submit a Rutgers Student Report of Absence. Rutgers will send the Report of Absence to Dr. Fang Liu (the course coordinator). Dr. Liu will decide whether to give credit for attendance. Cheating on iClicker will not be tolerated. If a student does not attend a class and asks another student to do iClicker during the class, the final grade for both students will be downgraded.

Course Policies and Expectations: The students are expected to follow the University Academic Integrity Policy. Students are strongly encouraged to attend the lectures. Class participation is also strongly encouraged. Personal laptops are permitted for note taking only. Cell phones are not permitted in class unless they are turned off. Make-up exams will be given at the discretion of the course coordinator.

Communications: Students are encouraged to communicate with the course coordinator (or relevant Professor) by e-mail or in person. Recitations are usually given once a week for the lecturer to answer questions from the students. Questions may also be submitted by e-mail before the recitation.

Academic Integrity Policy Statement: Students are required to be familiar with the university's Policy on Academic Integrity (see <http://ctaar.rutgers.edu/integrity/policy.html>). Violation of academic integrity is a separable offense under the University Code of Student Conduct. Violations of academic integrity occurring during exams will be either level three or four violations. The recommended sanction for level three violations is suspension from the university for one or more terms with a notation of "academic disciplinary suspension" placed on the student's transcript for the period of suspension and a failing grade in the course. The recommended sanction for level four violations is expulsion from the university and a permanent notation on the student's transcript. Any student who is aware of academic misconduct by another student is obligated to notify a faculty member; failure to do so is also a violation of the Policy on Academic Integrity. Any violations of academic integrity relating to this course will be handled by the student disciplinary process as outlined in the University Code of Student Conduct.

Examination Policy

- Any absence from an exam must be approved by the course coordinator either verbally or in writing prior to the exam time and must be for a valid, documented reason. Leaving a phone message or e-mail, without a response from the course coordinator, does not constitute approval for the absence. Make-up examinations may consist of different questions, using a different question format.
- Students are expected to arrive on time for examinations. Students will not be allowed admittance to an exam after any other student has completed the exam and left the exam room. This will be considered an unexcused absence.
- Students must leave coats, book bags, and other belongings at the front or back of the examination room. The only items allowed on the desk are those that are essential to completion of the exam. Other than the examination itself, papers of any kind are not allowed on the desk.
- Students must be prepared to present picture identification (e.g., Rutgers student ID) at the time examinations are completed.
- A student may be moved to a different seat at any time during the exam at the discretion of the proctors.
- Students who want to keep track of the time during an exam should wear a watch. Exam proctors will also provide periodic updates on the time remaining especially as the time to end the exam draws near. Cellular phones and personal digital assistants (PDAs) are not acceptable timepieces and will not be allowed on the desk.
- Programmable calculators or PDAs may not be used during an exam. The exam proctors reserve the right to inspect and remove any calculator that they feel may give a student an unfair advantage.
- Students wearing baseball caps or similar hats with lids must turn the hat around so that the lid does not cover the eyes.
- For multiple-choice questions, students must not write their answers in big block letters in the margin of the exam.
- Students must refrain from talking from the time they enter the examination room until they have left the room AND are out of hearing range. Talking about the exam outside of the room is unacceptable at any time.