

MCB5252
SUMMER 2022
MICROBIOLOGY, IMMUNOLOGY, AND BASIS of
IMMUNOTHERAPEUTICS
Department of Microbiology and Cell Sciences

Dr. Karim Asghari, 1046 Microbiology Bldg.
Office Hours by Appointment Only

Email: Asghari@ufl.edu

Tel: 352-214-2469 cell

Twitter: @MicrobesNews Microbes in The News

Sess.	Date	TOPIC
1.	5/09	Prokaryotes, Eukaryotes, and Acellular Structures
2.	5/10	Cell Biology, Bacterial Cell Structure and Function
3.	5/11	Biofilm Formation, Quorum Sensing, Cell-to-Cell Communications
4.	5/12	Pathogenicity and Infectious Diseases, Mechanism of Pathogenesis
5.	5/13	Virulence Factors, Exotoxins, and Endotoxins
6.	5/16	Modes of Disease Transmission, Vector-Borne Diseases
7.	5/17	Public Health Microbiology, Epidemiology, Nosocomial Infections
8.	5/18	Immune Defense Mechanism; Innate vs. Acquired Immunity
EXAM ONE		Friday-Monday May 20-23, 2022, (Sessions 1-7)
9.	5/19	Cells of the Immune System, Complement Proteins, Elements of Innate
10.	5/20	MHC, Antigen Presentation, Immunoglobulins, Antigen-Antibody Interactions
11.	5/23	Active/Passive Immunity, Types of Acquired Immunity, AMI vs. CMI
12.	5/24	Immune Response to Infectious Diseases, Immunization, Vaccines
13.	5/25	Serology, Immunological Testing for Identification of Infectious Diseases
14.	5/26	Hypersensitivity, Autoimmunity, Immune Deficiency/Disorder, and Allergy
15.	5/27	Major Groups of Bacterial Pathogens, Virulence Factors
Exam TWO		Friday-Monday May 27-30, 2022, (Sessions 8-14)
16.	5/30	Streptococcal and Staphylococcal Infections
17.	5/31	Enterobacteriaceae, Clostridial Diseases
18.	6/01	Bacterial Meningitis
19.	6/02	Bacterial Pneumonia, Tuberculosis
20.	6/03	Sexually Transmitted Infections (STI) Caused by Bacteria
21.	6/06	Neisseria and Chlamydia Infections
22.	6/07	Antimicrobial Drugs, Antibiotics and Mechanism of Antibiotic Resistance
EXAM THREE		Friday-Monday June 3-6, 2022, (Sessions 15-21)
23.	6/08	Virology, Mechanism of Viral Pathogenicity
24.	6/09	Selected Viral Diseases, HIV and Hepatitis
25.	6/10	Viral Infections and Cancer, Herpes Infections
26.	6/13	Fungal, Parasitic, Emerging Infectious Diseases
27.	6/14	Immuno-Oncology, Immunotherapeutic Drugs in Cancer Treatment
EXAM FOUR		Tuesday-Friday June 14-17, 2022, (Sessions 21-27)

NOTE: See Canvas for required reading assignments

Textbook: Medical Microbiology by P. R. Murray et al 9th edition (eBook, 2020, recommended). The e-textbook serves as a reference that provides reading materials which helps students prepare for the lectures and provides supplemental materials for the lectures.

Course Objectives: This course will provide an understanding of microbial structure and function with regards to their role in pathogenesis and infection. Principles of pathogenesis and infection will be discussed in depth. The course will examine the mechanism of microbial diseases, modes of entry, circumventing host defense system, and transmission. The role of immune system in defending the host against infection, and what happens when it breaks down will be examined. General therapeutic principles and mechanisms of bacterial resistance to anti-microbial drugs will be covered. The discussion regarding anti-microbial agents will include class and mode of action of anti-microbial agents. The relationship between structure and function and its role in rise of antibiotic-resistant strains will be discussed. A discussion regarding the use of Immunotherapeutic drugs for treating human diseases is also included. At the end of the term students should have a good understanding of the infectious diseases, their causative agents, the immune response to infectious diseases, available treatments, and the preventive measures against them. Students will also have an in-depth understanding of serological techniques and their role in identification of infectious diseases.

WEBSITE: The class is on E-learning (Canvas). The class syllabus, lecture presentations, study guides, and other materials will be posted on E-Learning throughout the semester. Details and clarifications about class policy will be posted online as announcements or emails on a regular basis. Students should check their emails and announcements on Canvas on a daily basis.

Attendance: This course is fully online. Attendance is not required. Lectures are pre-recorded and will be posted online on a regular basis.

EXAMS: Four scheduled exams are given via ProctorU. Students take the exams on Canvas via ProctorU Test Management System using their own computers. Exams are given during the dates stated in the syllabus. You must schedule your exams during the hours stated in ProctorU. You need to register with the ProctorU Test Management System at once, and make reservations for all four exams in advance, (At least two weeks prior to opening date for each exam. Each exam contains 40, all multiple choice questions, and you will have 90 minutes to complete the exam

It is the Students responsibility to prepare for their exams: by choosing a location that is acceptable to ProctorU, and by Updating their computers software in order to be in compliance with ProctorU technical requirements. You must contact ProctorU several days in advance to make sure that your exam location and your computer meet the ProctorU standards. Missing a scheduled exam due to technical difficulties is not considered an excused absence. Please note that SCRATCH PAPERS OR ANY OTHER RESOURCES ARE NOT ALLOWED DURING THE EXAM SESSION.

Exam materials come from **lectures presentations, lecture notes, and assigned readings.** *In some cases, information presented in class may be in contradiction with information from other sources, especially internet-posted materials. In these cases, exam questions will be based only on the information available in the textbook, lecture notes, or materials presented during the lecture presentations, and exams will be graded accordingly.* Practice exams/answers will be posted online to familiarize students with. Students should use these exams as real assessments of learning rather than study guides.

Extra Credit Online Quizzes: Online quizzes are provided for students to gain extra credit points towards their grade in class. Points from these quizzes are added to your total scores for your four exams. More details are available on Canvas under "FILES". Performance in quizzes can only help you. There is no penalty for not taking the quizzes. EACH QUIZ REMAINS OPEN AT LEAST FOR SIX (6) DAYS.

SUBMITTING THESE QUIZZES ARE CONSIDERED TIMELY CLASS PARTICIPATIONS, AND ABSOLUTELY NO MAKEUPS ARE ALLOWED.

Quizzes will no longer be available after the due date, and no late submission is possible. See Canvas for due dates for these quizzes.

CASE STUDY PROJECT: Each student will be assigned with an infectious disease case study project. Students will use their knowledge gained throughout the semester to diagnose infectious disease cases. Details TBA.

GRADING/TESTS: The final class grade is based on accumulated points

There are four (4) regularly scheduled non-cumulative exams (320 points, 80 points per each). Also included is the case study project, which is worth 80 points. The course is based on total of 400 points. A written Makeup exam is allowed for a missed exam due to an **excused** absence. Makeup exam contains short answer questions, fill-in-the blank questions, and multiple-choice questions.

Grading scale (Total accumulated points including points from exams, quizzes, and points from case study project:

A	360 – 400 points
A-	356 – 359.9 points
B+	348 – 355.9 points
B	320 – 347.9 points
B-	316 – 319.9 points
C+	308 – 315.9 points
C	280 – 307.9 points
C-	275 – 279.9 points
D	240 – 274.9 points
E	000 – 239.9 points

ACADEMIC HONESTY: As a result of completing the registration form at the University of Florida, I assume that every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

STUDENTS WITH DISABILITIES: Students requesting classroom accommodations should register with the Dean of Students Office. The office will provide documentation to the student, who can then bring the necessary material to the instructor when requesting accommodation. Students who take exams at the DRC must present documentation about their accommodations and register with DRC during the first two weeks of classes.

UNIVERSITY SUPPORT SERVICES: Resources are available on campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources include:

- University Counseling Center, 301 Peabody Hall, 352-392-1575, personal and career counseling.
- Student Mental Health, Student Health Care Center, 352-392-1171, personal counseling.
- Sexual Assault Recovery Services, 352-392-1161.
- Student Health Care Center, 352-392-1161.
- Career Resource Center, Reitz Union, 352-392-1601, career development assistance and counseling.

Useful Links:

- **Center for Disease Control and Prevention:** CDC: <http://www.CDC.gov>
- **National Institute of Health:** <http://www.hih.gov>
- **National Institute of Allergy and Infectious Disease:** <https://www.niaid.nih.gov>
- **US Food and Drug Administration:** FDA: <http://www.FDA.gov>
- **US Environmental Protection Agency:** EPA <http://www.EPA.gov>
- **Microbiology and Cell Science:** MCS: <http://microcell.ufl.edu>
- **College of Agriculture and Life Sciences:** CALS: <http://www.ifas.ufl.edu>
- **University of Florida Libraries:** UF Libraries: <http://www.uflib.ufl.edu>
- **University of Florida:** UF: <http://www.ufl.edu>

End Note: I genuinely care about your success in this course. Please reach out to me via email, phone calls, text messages. Your well-being during the semester is paramount to everything else. Please take care of your health while going through these stressful times in your professional life. Let me know if I can be of any assistance to you.