Host Pathogens Course

I. COURSE DESCRIPTION

The Host Pathogens Course will provide students with an introduction to the field of medical microbiology. During the course students will be introduced to some of the major clinically-relevant bacterial, parasitic, fungal and viral pathogens known to be responsible for infecting humans and causing disease. Students will learn key aspects of the structure, physiology, genetics, general biology, and life cycles of these microorganisms that are essential to understanding their roles as successful human pathogens. They will learn how specific laboratory tests can be used to distinguish between different pathogenic species, and how distinct epidemiological characteristics that are specific to each particular pathogen can influence infectivity and clinical manifestations of disease. They will study the pathogen-specific factors that influence the ability of microorganisms to gain access to the body, avoid host and cellular responses, and promote the pathophysiological mechanisms that ultimately cause disease. Finally, through a thorough and complete understanding of the essential biology of each class and species of pathogen, students will gain an appreciation for how treatment strategies can be successfully utilized to target specific organismal vulnerabilities in order to effectively treat and prevent infections. By the end of the course students will have gained a solid grounding in medical microbiology and will be able to identify and discuss the key features of the major human pathogens that enable them to successfully invade and survive within their human hosts to cause disease.

II. COURSE ORGANIZATION

The course will run in the second half of the spring semester and is designed into 3 distinct content blocks. The first block will focus on general aspects of bacterial cell structure, physiology, and molecular biology relevant to pathogenesis. The second block will provide an introduction to the major species of bacterial, fungal and parasitic pathogens known to cause human disease. The final block will focus on the biology of the major human viral pathogens.

Lectures have all been prerecorded using Panopto lecture capture software and will be delivered asynchronously for students to view at their own convenience. All lectures will be accompanied by a list of learning objectives and copies of the lecture slides. As indicated on the schedule in Lumen and Sakai, lecture content will be supplemented with relevant small group and large group discussion experiences.

Knowledge gained during this course will be applied during your M2 year, where the involvement of specific organisms in the pathophysiology of select diseases will be discussed during the relevant organ block in the Mechanism of Human Disease course, and drugs used to combat infections with specific microorganisms will be presented in the Pharmacology and Therapeutics course.

III. EXAM FORMAT & GRADING

Each of the three individual content blocks will conclude with an exam. Please note that exams will not be testing content on a cumulative basis, each exam will only assess content that was presented in that particular block.

Exams will assess knowledge using the multichoice USMLE step1-like single best answer format. The number of questions on each exam will vary and will be directly proportional to the number of lectures delivered during the block. All exams will be delivered on campus by the school's exam administration system. The total time available to complete each exam will vary based upon the total number of questions- the average time allotted to answer each question will be 1 min 45 sec and the total exam time will be rounded up to the nearest 15 mins.

Your final course grade will be based upon the total percentage correct of your answers from all of the questions asked on each of the four block exams. Grading will be on a Pass/Fail basis. A passing grade will represent an aggregate score greater than or equal to 70%. Students receiving a mean score of less than 70% will receive a failing grade.

Please note, that while certain treatment strategies maybe discussed in some lectures regarding specific microorganisms, this is primarily to point out either specific vulnerabilities of the pathogen under discussion or molecular mechanisms that the organism has specifically employed to avoid sensitivity to specific pharmacological agents (e.g. antibiotic resistance). While questions on the molecular basis of drug resistance will be fair game, you will not be tested on the actual pharmacology of specific antimicrobial agents- that will occur next year in the Pharmacology and Therapeutics course.

IV. MISSED EXAM POLICY

If circumstances arise that may prevent you from taking a scheduled examination (e.g. serious illness) you should immediately contact the Office of Student Affairs, so that a timely adjudication can be made. Students who are forced to miss exams for **legitimate** reasons, as ascertained by the Assistant/Senior Associate Dean of Student Affairs, will be given the opportunity to take a make-up exam on an individual basis.

V. REMEDIATION POLICY

Students who fail to achieve the minimum score required for a passing grade in the course may be allowed the opportunity to take a make-up remediation exam. The purpose of the remediation exam is for the student to demonstrate competence of the material presented in the course. The composition of the exam will be decided by the course director and will consist of representative questions reflecting material that was presented throughout the semester. The make-up exam will be a rigorous, yet fair, assessment to ensure that the student has achieved sufficient mastery of the course content to be allowed to continue to the next academic level. Remediation exams will be administered at the end of the academic year and will be scheduled by the Office of Student Affairs and the Academic Center for Excellence in consultation with the Course Director. All students requiring remediation should meet with the Course Director well in advance of the scheduled date of the exam to discuss both the exact format of the exam and their proposed study approach. Those students achieving a score of **greater or equal to 70%** on the remediation exam will have their F grade converted to a P*. Students who fail to successfully achieve the minimum passing score will be required either to repeat the course in its entirety, or alternatively, may be subject to automatic administrative action by the School, as outlined in the academic policy manual.

Please note that students with a final overall cumulative course score of <60% may be denied the opportunity to remediate their failure by an end-of-year exam and may instead be required to repeat the course. The decision to allow such students the opportunity to take a remediation exam

will be made by the Student Promotions Committee following a recommendation provided by the Course Director.

VI. PROFESSIONALISM

Personal responsibility and professionalism are two key areas in the development of a physician. Professionalism is a separate category on the required evaluations for the American College of Graduate Medical Education. It is expected that professionalism will be extended in all aspects of your conduct in this course. This includes appropriate and professional interactions with the course directors, lecturers, educational coordinators and other students, as well as will maintaining personal integrity and honesty during the examination process. Any serious lack in professional conduct will be reported to the Dean.

VII. TEXTBOOK

Medical Microbiology, 9th Edition, 2021
Editors: Murray, Rosenthal, & Pfaller
Publisher: Elsevier

- Online access available through the library
- https://hsl.luc.edu/coursetexts-ssom
  - Look under Host Pathogens at the bottom of the page

VIII. COMMUNICATION

Students will receive information related to any changes in the course schedule from the Course Director and/or the Course Coordinator by direct emails to the entire class. Consequently, students should check their Loyola email accounts daily. Please note that all communications with the Course Directors, Course Coordinator or Course Faculty should be via the students personal luc.edu email account, as emails sent from other email servers (i.e. gmail, yahoo, hotmail) might not be received by the intended recipient due to Loyola spam filters.

IX. COURSE COORDINATOR

The Host Pathogens course will be supported by Jessica Bumbaris, the Host Pathogens Course coordinator.

Jessica Bumbaris, Medical Education Coordinator
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X. COURSE DIRECTORS

Interim co-course director
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