

## **Host Pathogens Course: Overall Course Goals and Objectives**

*At the end of the course students will be able to:*

### **MEDICAL KNOWLEDGE**

1. List the clinically significant species of the major bacterial, parasitic, fungal and viral pathogens known to infect humans and classify them within their appropriate Taxonomic Class [SSOM 1.2]
2. Describe how specific staining procedures and laboratory tests can be used to identify and distinguish between distinct types of human pathogens [SSOM 1.2]
3. Compare and contrast the unique cellular, structural and molecular features of bacteria, parasites, fungi and viruses and how each contribute towards the ability to infect the human host and cause disease [SSOM 1.2]
4. Compare and contrast the differences between the genomes, genetic regulatory mechanisms, and growth requirements of bacteria, parasites, fungi and viruses and how each can uniquely contribute towards virulence, pathogenesis and resistance to both host immune responses and pharmacological therapy [SSOM 1.2; SSOM 1.3]
5. Describe the major modes of transmission, routes of entry and methods of dissemination of the major classes of human pathogens [SSOM 1.2]
6. Describe the significant epidemiology that is associated with each of the major species of human pathogens that influence infection and development of disease [SSOM 1.2]
7. Describe the major diseases and clinical manifestations that are associated with infection of the principal bacterial, parasitic, fungal and viral pathogens known to infect humans [SSOM 1.2]
8. Describe the major risk factors that are associated with infection and disease caused by each of the major species of human pathogen [SSOM 1.2]
9. Describe the mechanism of action of the major virulence factors associated with the principal bacterial, parasitic, fungal and viral pathogens known to infect humans and how these factors can influence the infectivity of each pathogen and its subsequent clinical manifestation and disease course [SSOM 1.2]
10. Identify major pathogen-produced toxins, their mechanisms of action and how they contribute towards pathogenesis [SSOM 1.2]
11. Describe specific mechanisms by which human pathogens avoid host immune responses [SSOM 1.2]
12. Describe how a thorough and complete understanding of the essential biology of each class and species of pathogen, can be leveraged to develop treatment strategies that can be successfully utilized to target specific organismal vulnerabilities in order to effectively treat and prevent infections. [SSOM 1.2; SSOM 1.3]

13. Describe specific mechanisms by which pathogens are able to develop resistance to pharmacological therapies including antibiotics and other antimicrobial drugs. [SSOM1.2; SSOM 1.3]
14. Describe the principles behind the development of pathogen-specific vaccines, the different types of vaccines, their limitations, and the mechanisms underlying their effectiveness in preventing infection [SSOM1.2; SSOM 1.3]

### **INTERPERSONAL AND COMMUNICATION SKILLS**

15. Demonstrate the ability to effectively communicate and work collaboratively together with peers in the small group setting [SSOM 3.3; 3.6]
16. Contribute to the education of peers by actively engaging in small group sessions and other required group work within the course. [SSOM 3.6]

### **PRACTICE-BASED LEARNING AND IMPROVEMENT**

17. Critically evaluate one's performance in the course to identify strengths and personal limitations in either medical knowledge or study methods; develop learning goals to address any deficiencies and actively seek out assistance from appropriate sources to successfully remediate these deficiencies. [SSOM 4.1; SSOM 4.2; SSOM 4.3; SSOM 8.2]

### **PROFESSIONALISM**

18. Demonstrate professional behavior by completing all course requirements, including course evaluations, in a timely manner [SSOM 5.2]
19. Demonstrate professionalism by behaving in a professional, courteous and respectful manner when engaged in course activities or interacting with course faculty and staff. [SSOM 5.1]
20. Demonstrate responsibility and accountability by attending and being punctual at all required course activities such as small groups, team-based learning exercises and exams. [SSOM 5.2]
21. Demonstrate professional behavior by requesting any excused absence from required course activities well ahead of the scheduled date. [SSOM 5.2]
22. Demonstrate professional behavior by responding to direct communication from the Course Director in a timely fashion, particularly in circumstances when a face- to face meeting is requested to discuss issues related to academic performance [SSOM 5.2]
23. Demonstrate professional and ethical behavior by honestly completing course examinations without attempting to seek an advantage by unfair means; and by reporting any unethical behavior of peers to the course administration. [SSOM 5.2; SSOM 5.6]