

BI 234 : MICROBIOLOGY

Transcript title

Microbiology

Credits

4

Grading mode

Standard letter grades

Total contact hours

60

Lecture hours

30

Lab hours

30

Prerequisites

WR 065 or WR 121Z or minimum placement Wr/Comm Level 7 and (BI 101 or BI 221Z or BI 231).

Course Description

Learn the characteristics and disease-causing features of microorganisms, especially the bacteria and viruses that cause serious infectious diseases in humans. Covers defense mechanisms against infections and disease, and the development of immunity against future infections. The mechanisms of action of certain classes of anti-microbial drugs are discussed. Also covers some of the historically-common human infections and diseases. Designed especially for students in nursing, pre-pharmacy and other pre-professional health programs.

Course learning outcomes

1. Demonstrate skills using current lab techniques to safely and appropriately identify pathogens and apply knowledge to pathogen-caused illness.
2. Analyze and interpret lab results to identify microbes, infections, and/or selected human responses to microbial exposure.
3. Apply principles of microbiology to disease processes.
4. Link pathogens and disease causing entities to disease processes and control.
5. Recognize effects of microbiome on human host.
6. Determine effective treatments for microbial and infectious disease states.
7. Apply evidence-based concepts to microbial and infectious disease prevention.

Content outline

1. History and major discoveries in microbiology
2. The diversity of the microbiome including types of pathogenic and disease-causing entities
3. Human-microbe interactions (beneficial, neutral, detrimental)

4. Features of specific microbes (and disease causing entities) that cause pathogenicity and allow for identification
5. Microbial control, including disinfection, antibiotic use, and selection for anti-microbial resistance
6. Basic principles of infection, disease transmission, and risk factors
7. Disease prevention techniques including vaccines and immunization
8. Major features of selected microbial diseases and strategies for decreasing morbidity and mortality
9. Current microbiological and molecular laboratory techniques, including microscopy, aseptic technique, culturing, identification, and microbial control
10. Selected lab tests used to identify pathogens / microbes, diagnose illness, and interpret immune response to microbial exposure

Required materials

Required course pack and/or textbook.

General education/Related instruction lists

- Science Lab