

MICR 432: Human Virology I: Host Virus Relationships

This course will explore the mechanistic and evolutionary relationship between viruses and their hosts with an emphasis on human viruses. We will discuss basic mechanisms of viral replication as well as the host defenses to counteract viruses such as adaptive and innate immunity. We will also talk about the development of vaccines and antivirals in a historical context and explore the mechanistic details of various vaccine platforms and antivirals. Other topics discussed include the discussion on the viruses in our genome (endogenous viruses) and their evolution and the tools to study viral evolution.

Learning Objectives

- Outline the steps of the replication cycle for each viral genome type
- Explain viral evolutionary mechanisms and their contribution to the emergence and re-emergence of human viral diseases
- Distinguish between the roles of adaptive and innate immune systems during viral infections
- Compare and contrast different vaccine development strategies
- Discuss the mechanism of action of various antivirals targeting different phases of the viral replication cycle
- Illustrate the replication mechanisms of transposable elements and endogenous retroviruses
- Convey detailed concepts of a chosen virology topic to other people

Credits: 2

Class Type: Graduate Course

Prerequisites:

College degree; knowledge of biology or consent of the instructor.

Program: Immunology and Microbiology

Availability: Spring 2022

Session: Session A