

**Educational Objectives**

1. Course coverage will focus almost entirely on viruses that infect humans and can cause serious diseases highlighting the mechanisms of viral pathogenesis, infection and virus-host interactions, at cellular and molecular level. Special emphasis will be laid on the modern diagnostic methods and recent advances in the application of molecular virology to the development of recombinant vaccines and other means to combat viral diseases.

**Course Outcomes**

2. At the end of this course, students will be able to identify & classify viruses of clinical importance, describe their properties & general replication, mechanisms of infection and spread of viruses giving a detailed account of some medically important viruses having good knowledge of the laboratory diagnosis of viral infections with reference to the prevention, control management and eradication of viral diseases

3. **Course Contents**

- a. Clinical Virology
- b. Explanation of related terms such as endemic, pandemic, epidemics, prions, viroids, viraemia etc.
- c. Important pandemics in history
- d. Viruses and their Clinical Epidemiology
- e. Patterns of infection
- f. Host-Viral Interactions
- g. Viral spread & cell tropism
- h. Cultivation and assays of viruses
- i. Antiviral vaccines and chemotherapy

**Viral diseases**

- a. Respiratory Infections
  - (1) Common Cold

- (2) Bronchitis
- (3) Viral Pneumonia
- b. Central Nervous System Infections
  - (1) Viral Meningitis
  - (2) Viral Encephalitis
- c. Gastro-intestinal Syndromes
- d. Viral Hepatitis
- e. Skin Infections
  - (1) Warts
  - (2) Measles
  - (3) Chicken pox
  - (4) Small pox
- f. Eye Infections
  - (1) Conjunctivitis
  - (2) Retinitis
- g. Viral Myocarditis
- h. Viral Hemorrhagic Fevers
  - (1) Dengue Fever
  - (2) Congo Fever
  - (3) Ebola Fever
  - (4) Zika Fever
  - (5) Yellow fever
- i. Viral Induced Cancers
  - (1) Liver cancer
  - (2) Cervical Cancer
  - (3) Skin Cancers
  - (4) Lymphatic Cancers
- j. Viral Immune Disorders
- k. Sub-Viral Agents
  - l. Prions
  - m. Viroids

*NOTE: All the mentioned viral diseases will be discussed in terms of their clinical epidemiology, pathophysiology, clinical manifestations, diagnostics, treatment and management.*

### **Recommended Books**

1. Jawetz Medical Microbiology
2. Clinical Virology by Douglas D. Richman
3. Fundamentals of Molecular Virology by Nicholas H. Acheson
4. Kaplan Medical Virology Video Lectures
5. Sketchy-medical Virology Mnemonic Videos.