

## **Module 611 Course Content**

### **Molecular Biology of Viruses**

- Introduction on the molecular biology of plant, animal and bacterial cells.
- Virus Genomes Organization and Functions
- Regulation of Viral Replication and Gene Expression
- Ribosomal Frameshift Signals in Viral Genomes
- Transcription, translation and replication of different viruses
- Host-Virus Interactions
- Molecular Virology and Pathogenicity
- Gene expression in vitro and in vivo-laboratory applications
- Genetic maps-interactions with host-activities
- Virus strategies to evade host immune response
- Vaccination

### **References**

- Principles of Molecular Virology, 6th Edition

## **Module 611 Course Content**

### **Advanced Virology**

- Immunity system
- Immunity to viruses
- Innate immune defences against viruses
- Adaptive immune responses
- Virus strategies to evade host immune response
- Pathological consequences of immune responses
- Vaccination
- Transformation and cancer
- Antiviral drugs

### **References**

- Principles of Molecular Virology, 6th Edition

## **Module 611 Course Content**

### **Technology and new Advances in Virology**

- Studies on viruses infecting tissue cultures and protoplast methods for detection of viral infections
- diagnosis using molecular probes
- recombinant DNA technology
- gene description and mapping techniques on genetic engineering and the epidemics.

### **References**

- Principles of Molecular Virology, 6th Edition
- Practical Plant Virology