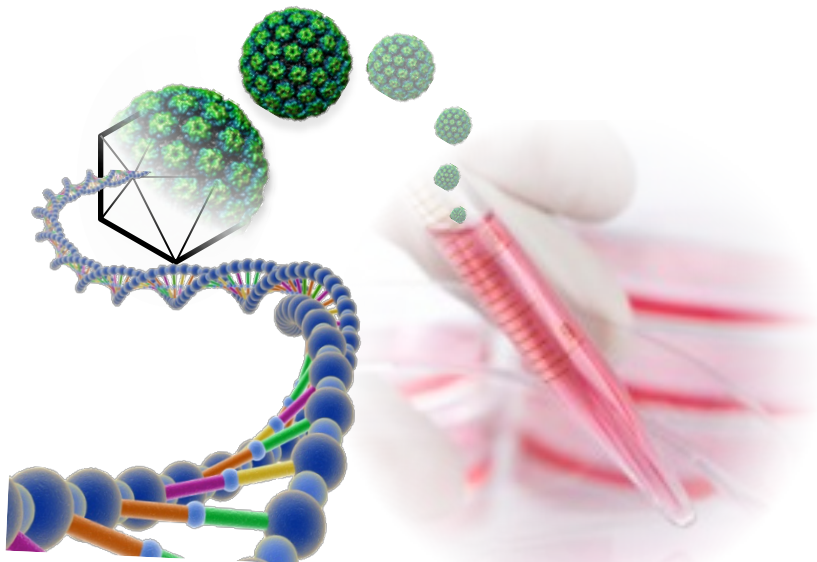




Overview:

- Introduction to molecular mechanisms of viral replication and pathogenicity
- Methods in detection and characterization of viral infections
- Engineering viruses for biotechnology purposes
- Development of viral reagents for pharmaceutical and biomedical products



- Lecture Topics:
1. The variety of viruses (taxonomic diversity)
 2. Molecular biology of viral replication
 3. Viral pathogenesis and disease
 4. Working with viruses: Biosafety
 5. Vaccines and antiviral pharmaceuticals
 6. Virus engineering and gene therapeutics
 7. The art of detection: Viromics

- Lab Topics:
- | | |
|---|---------|
| 1. Rate of infection and MOI - Bacteriophage | 1 week |
| 2. Virus infection of tissue cultures | 1 week |
| 3. Cytopathic effect, virus replication and gene expression – Ranavirus | 3 weeks |
| 4. Cell transduction and exogenous gene expression – Baculovirus | 2 weeks |