**MOLECULAR VIROLOGY CREDIT HOURS 2+1**

**LEARNING OUTCOMES :**

Students will able to know about the molecular basis for structure, complexity and expression of viral genomes

**COURSE CONTENTS:**

The structure and complexity of virus genomes, Molecular genetics. virus mutants, Genetic and non-genetic interactions between viruses, single and double stranded DNA/ RNA viruses, Segmented and multipartite virus genomes, Reverse transcription and transposition, Evolution and epidemiology, Expression of genetic information, Control of prokaryote gene expression, Control of expression in bacteriophage l , Control of eukaryote gene expression, Genome coding strategies, Transcriptional control of expression, Post-transcriptional control of expression, Satellites and viroids, Prions, recombinant viruses.

**PRACTICALS:**

1. Cell Culture Methods.
2. Life cycles of specific retroviruses,
3. Serological/Immunological methods.
4. Ultrastructural studies
5. Recombinant retroviral methods,
6. PCR techniques virus genome detection

**RECOMMENDED BOOKS:**

1. Cann, A. 2015. Principles of molecular virology. USA: Elsevier Academic Press
2. Flint, S. J., Racaniello, V. R., Rall, G. F., Skalka, A. M., & Enquist, L. W. 2015. Principles of virology. ASM Press USA.
3. Kessler, H. H. 2014. Molecular diagnostics of infectious diseases. (Molecular diagnostics of infectious diseases.) Berlin [u.a: de Gruyter.
4. Klasse, P. J. 2015. The molecular basis of viral infection. Amsterdam : Elsevier.
5. Uyeda, I., & Masuta, C. 2014. Plant virology protocols: New approaches to detect viruses and host responses. New York: Humana Press.