## VIROLOGY

| Semester | Subject code | Category | Lecture | | Theory | | Practical | | Credits |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total hrs | Hrs/ week | Total hrs | Hrs/ week | Total hrs | Hrs/ week | |
| II | 21CPMB2A | Core-IV | 60 | 4 | 60 | 4 | 0 | 0 | 3 |

**COURSE OBJECTIVES**

To enable the students to understand the Viral diseases of human beings and plants.

**COURSE OUTCOMES**

On the successful completion of the course, students will be able to understand the virus that cause infections to animals and plants and how it should be prevent and control by using vaccines and antiviral agents.

| CO Number | CO Statement | Knowledge Level K1 – K4) |
|---|---|---|
| **CO1** | To expertise how the viruses are classified and about the sub viral particles | **K2** |
| **CO2** | To categorize theviruses infecting microorganisms and insects | **K2** |
| **CO3** | To categorize the various plant viruses thatinfects plants and its mode of transmission. | **K2** |
| **CO4** | To compare the pathogenesis of animal DNA viruses and how it infects human. | **K4** |
| **CO5** | To expertise the emerging viral infections and about the oncogenic viruses. | **K2** |

**MAPPING WITH PROGRAMME OUTCOMES:**

| COS | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|---|---|---|---|---|---|---|
| **CO1** | S | M | S | M | S | S |
| **CO2** | S | M | S | S | S | M |
| **CO3** | S | S | M | M | S | M |
| **CO4** | S | S | S | M | S | S |
| **CO5** | S | M | S | S | S | S |

**S- Strong; M- Medium; L- Low**

**UNIT- I: General properties of viruses** **12 Hours**

History of virology; classification of viruses based on their hosts, nucleic acids and structures. Viroids, prions and virusoids. Viral replication and cultivation. General methods of diagnosis and serology for viruses. Viral vaccines, interferons and anti viral drugs.

**UNIT-II: Viruses infecting microorganisms and insects** **12 Hours**

Structure, composition and life cycle of viruses infecting cyanobacteria, algae, fungi, bacteria (Bacteriophages - ΦX174, M13, Mu, T4, Lambda, p1) and insects.

**UNIT- III: Plant viruses** **12 Hours**

Plant viruses –General characteristics- Morphology – replication- RNA as its initiators of infection –TMV, CMV; Transmission of plant viruses; Common viral diseases of crop plants – paddy, cotton, tomato and sugarcane, Prevention of plant diseases.

**UNIT – IV: Animal viruses part I** **12 Hours**

Animal viruses – Life cycle, pathogenicity, diagnosis, prophylaxis and prognosis of DNA viruses –Parvo, Herpes - HSV, CMV, Varicella zoster, EBV, Adeno and Hepatitis.

**UNIT –V: Animal viruses part II** **12 Hours**

Animal viruses – Life cycle, pathogenicity, diagnosis, prevention and treatment of RNA viruses; picorno, orthomyxo (H1NI), paramyxo – mumps, measles and rubella and other arbo viruses – chikungunya virus, yellow fever, dengue. Rhabdo, Rota, HIV. Oncogenic viruses – Human papova virus, Leucosis sarcoma and HTLV, Nido and Filovirus.

**TEACHING METHODOLOGY:**

- Lectures
- Power point presentation
- Charts
- Models
- Group discussion
- Group assignments
- Seminars

**TEXT BOOKS:**

| S.No | Authors | Title | Publishers | Year Of Publication |
|---|---|---|---|---|
| 1. | David Greenwood, Richard C. B., | "Medical Microbiology." | ELBS with Churchill Livingstone | 1992 |
| 2. | Jawetz, E., J. L. Melnic and E. A. Adelberg. | Review of Medical Microbiology, | Lange Medical Publishers, New York. | 2013. |

| | | | | |
|---|---|---|---|---|
| 3. | Ananthanarayanan R. and Jayaram Panicker C.K. | "Text book of Microbiology". | Orient Longman | 2017 |

**REFERENCE BOOKS:**

| S.No | Authors | Title | Publishers | Year Of Publication |
|---|---|---|---|---|
| 1. | BalowS. A., Hauser. W.J, Ohauhi. M.,and Turano.A | Laboratory diagnosis of infectious diseases. Principles and Practice (Vol 1) | Springer – Vertag, New York | 1998 |
| 2. | Morag C & Timbury M C | Medical Virology | Churchill Livingston, London | 1994 |
| 3. | Calender R | Bacteriophages I, II, III | Plenum Press | 1998 |

**WEB SOURCES:**

http://web.uct.aqc.za/depts/mmj/jmoodie/welcome1.html

http://vm.cfsan.fda.gov/~mow/intro.html

http://medicine.wustl.edu/virology/

http://www.virilogy.net/garryfavwebaids.html

**SYLLABUS DESIGNER:**

- Mrs. R.Sangeetha Assistant Professor
- Dr. A.Vidhya HOD & Assistant Professor