



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Science

Department of Life Science

Generic Elective (GE) Under Graduate Courses

SEMESTER VI

COURSE CODE	Category	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTUG601	GE	Microbes and Diseases	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment shall be based following components: Quiz / Assignment / Project/ Participation in Class, given that no component shall exceed more than 10 marks.**

Course Objectives

1. To describe factors important for virulence of each microbial pathogen.
2. To describe the mechanisms of microbial infections.
3. To describe viral and fungal disorders.
4. To describe the mechanisms vaccine and antibiotics action.
5. To describe microbial resistance to antibiotics.

Course Outcomes

After successful completion of this course, the students are expected to:

1. Aware of the pollution leading to various microbial diseases.
2. Water and air-borne diseases and their transmission.
3. Know about the role of immune cells and their functional mechanisms.
4. Phenomena associated with infectious diseases.
5. Get a clear vision about various aspects of infectious diseases and their treatment.

Unit – 1 – Pathogenic Microorganisms

Introduction to pathogenic microbes and their related disorders, Common microbial diseases of human beings [Name of the disease, causative pathogen, parts affected]

Unit – 2 – Microbial Disease

List of diseases of various organ systems and their causative agents, Respiratory Diseases: Streptococcus pyogenes, Haemophilus influenzae, Mycobacterium tuberculosis, Gastrointestinal Diseases: Escherichia coli, Salmonella typhi, Vibrio cholerae, Bacillus anthracis, Clostridium tetani.



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Unit – 3 – Viral Diseases

List of diseases of various organ systems and their causative agents. The following diseases in detail with Symptoms, mode of transmission, prophylaxis and control Polio, Hepatitis, Rabies, Dengue, AIDS, Influenza.

Unit – 4 – Protozoan & Fungal Diseases

List of diseases of various organ systems and their causative agents. The following diseases in detail with Symptoms, mode of transmission, prophylaxis and Malaria. Symptoms and prevention of cutaneous mycoses: Tinea pedis (Athlete's foot), Systemic mycoses: Histoplasmosis and Opportunistic mycoses: Candidiasis.

Unit – 5 - Vaccines & Antibiotics

DNA vaccines, recombinant vaccines, bacterial vaccines, viral vaccines, role of WHO in immunization programs, commonly used antibiotics and their related disorders.

Suggested Reading (Bibliography):

1. Tortora GJ, Funke BR and Case CL. Microbiology: An Introduction. Pearson Education
2. Madigan MT, Martinko JM, Dunlap PV and Clark DP. Brock Biology of Microorganisms. Pearson International Edition
3. Wiley JM, Sherwood LM and Woolverton CJ. Prescott's Microbiology. McGrawHill International
4. Atlas RM. Principles of Microbiology. WM.T.Brown Publishers.
5. Pelczar MJ, Chan ECS and Krieg NR. Microbiology. McGraw Hill Book Company