B.Sc. Biotechnology: Semester-V BST 505:Medical Microbiology	
Teaching Scheme Lectures: 3 hrs/Week Tutorials: 1 hr/Week Credits: 4	**Examination Scheme** Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Prerequisite: - BST-Microbiology, BST503 Genomics and Proteomics, BST504

Course Objectives:

1 To give the basic knowledge of microbiology and diversity of microbes.

2. To give complete knowledge of various types of microbes involved in pathogenesis.

3. To explain the antibiotic resistant and sensitivity of pathogenic microbes.

4. To explain the importance of antibiotics and mechanisms of inhibitions.

Course Outcomes:

After completing the course, students will be able to:

CO1: This course provides learning opportunities in the basic principles of medical microbiology and infectious disease.

CO2: It covers mechanisms of infectious disease transmission, principles of aseptic practice, and the role of the human body's normal microflora

CO3: The course provides the conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body.

CO4: It also provides opportunities to develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in the diagnosis of infectious diseases.

CO5: To understand the importance of pathogenic bacteria in human disease with respect to infections of the respiratory tract, gastrointestinal tract, urinary tract, skin and soft tissue.

CO6: Helps to understand the use of lab animals in medical field.

CO7: Recall the relationship of this infection to symptoms, relapse and the accompanying pathology.

CO8: Explain the methods of microorganism's control, e.g. chemotherapy & vaccines. Solve problems in the context of this understanding.

Detailed Syllabus:

UNIT-1 General topics on Medical Microbiology
General topics on Medical Microbiology: History and development, Koch's postulates, classification of medically important bacteria. Infection: source, modes of transmission, portal of entry into the susceptible host and prevention

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UNIT-2 Bacterial pathogenicity
Bacterial pathogenicity, identification of bacteria: staining methods, culture methods, biochemical tests and other recent methods. Sterilization and disinfection. Normal microbial flora, antimicrobial agents, drug resistance and drug sensitivity test
UNIT-3 Systematic Microbiology
Systematic Microbiology: Diseases caused by Gram positive and Gram Negative bacteria, pneumonia, gonorrhea, Tuberculosis, UTI, Overview of Medical Mycology, Important Fungal Diseases – Superficial, and Overview of Medical Virology, Important Viral Diseases– Herpesvirus, Poliovirus

Text and Reference Books

1. Greenwood D (2007). Medical Microbiology. I.K. International.

2. Murray PR, Pfaller MA, Tenover FC and Yolken RH (2007). Clinical Microbiology. ASM Press.

3. Talaro KP and Talaro A. (2006). Foundations in Microbiology. McGraw-Hill College Dimensi.

4. Willey J, Sherwood L. and Woolverton C (2007). Prescott/Harley/Klein's Microbiology, McGraw Hill.

5. Atlas RM (1997). Principles of Microbiology. McGraw Hill.

6. Nester E.W, Anderson DG and Nester MT (2006). Microbiology. A Human Perspective. McGraw Hill.

7. Harvey, R.A., Champe, P.C. and Fisher, B.D. 2007. Lippincott's Illustrated Reviews : Microbiology.

Lippincott Williams and Wilkins, New Delhi/New York.

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