

MICROBIOLOGY

Course Description

This course is designed to help students gain knowledge and understanding of the characteristics and activities of micro-organisms, how they react under different conditions and how they cause different disorders and diseases. Knowledge of these principles will enable student to understand and adopt practices associated with preventive and promotive health care.

General Objectives

Upon completion of the course, the students shall be able to:

1. Describe the classifications and characteristics of micro-organisms
2. List the common disease producing micro-organisms
3. Explain the activities of micro-organism in relation to the environment and the human body.
4. Enumerate the basic principles of control and destruction of micro-organisms.
5. Apply the principles of microbiology in nursing practice.

Total Hours – 30

Unit. No.	Learning Objectives	Content	Hr.	Teaching learning activities	Assessment methods
I	Describe evolution of microbiology and its relevance in nursing.	Introduction a) History of bacteriology and microbiology. b) Scope of microbiology in Nursing	3	Lecture cum discussions.	Objective type Short answers
II	Classify the different types of micro organism. Describe the normal flora and the common diseases caused by pathogens Explain the methods to study microbes	Micro Organisms a) Classification, characteristics, (Structure, size, method and rate of reproduction) b) Normal flora of the body. c) Pathogenesis & common diseases. d) Methods for study of microbes, culture & isolation of microbes.	8	Lecture cum discussions. Explain using slides, films, videos, exhibits, models Staining and fixation of slides.	Short answer Objective type Essay type
III	Describe the sources of infection and growth of microbes. Explain the transmission of infection and the principles in collecting specimens	Infection and its transmission a) Sources and types of infection, nosocomial infection. b) Factors affecting growth of microbes. c) Cycle of transmission of infection portals of entry, exit, modes of transfer. d) Reaction of body to infection, mechanism of resistance. e) Collection of specimens.	4	Lecture Demonstrations Specimens Explain using charts	Short answer Objective type Essay type

IV	Describe various types of immunity, hypersensitivity autoimmunity and immunizing agents	Immunity a) Types of immunity – innate and acquired. b) Immunization schedule. Immunoprophylaxis (vaccines, sera etc.) c) Hypersensitivity and autoimmunity. d) Principles and uses of serological tests	5	Lecture cum discussions. Demonstration Exhibits	Short answer Objective type Essay type
V	Describe the various methods of control and destruction of microbes	Control and destruction of Microbes a) Principles and methods of microbial control -Sterilization -Disinfection -Chemotherapy and antibiotics -Pasteurization b) Medical and surgical asepsis c) Bio-safety and waste management	5	Lecture, Demonstration Videos Visit to the CSSD	Short answer Objective type Essay type
VI.	Demonstrate skill in handling & care of microscopes Identify common microbes under the microscope	Practical Microbiology a) Microscope – Parts, uses, handling and care of microscope b) Observation of staining procedure, preparation and examination of slides and smears c) Identification of common microbes under the microscope for morphology of different microbes.	5	Lecture, Demonstrations Specimens Slides	