

**Industrial Biotechnology Training
Medical Microbiology (Specialized)
Session 2021 - 2022**

Module Content
Introductory Lecture
Introduction to Good Laboratory Practices and Instrumentation
Handling of Specimens and Biomedical Waste Disposal
Introduction to Normal Flora of Human Body
Culture Media <ul style="list-style-type: none">• Types of Culture Media• Preparation of Culture Media
Isolation of Pathogenic Bacteria from Clinical Samples <ul style="list-style-type: none">• Serial Dilution Method• Spread Plate Method• Pour Plate Method• Streak Plate Method
Morphological Characterization of Microorganisms <ul style="list-style-type: none">• Colony Characterization• Colony Forming Unit (CFU) Count
Microscopic Characterization of Microorganisms <ul style="list-style-type: none">• Differential Staining<ul style="list-style-type: none">○ Gram's Staining○ Acid Fast Bacilli (AFB) Staining○ Endospore Staining• Negative Staining<ul style="list-style-type: none">○ Capsule Staining
Biochemical Characterization for Bacterial Identification <ul style="list-style-type: none">• IMViC Test• Urease Test• Triple Sugar Iron (TSI) Test• Oxidase Test• Catalase Test• Coagulase Test

Isolation and Identification of Fungi
Antibiotic Susceptibility Tests <ul style="list-style-type: none">• Disc Diffusion Test• Broth Dilution Test• E-Test
Enumeration of Bacteria: Growth Kinetic Study
Automation in Medical Microbiology (Demonstration Only) <ul style="list-style-type: none">• VITEK• BACTEC MGIT 320 (TB Culture)• BACTEC MGIT 9050 (Blood Culture)• Alifex (Urine Analysis – For Early Detection)
Presentation, Report Submission and Viva-Voce