

Medical Microbiology (7 days)

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">o Gram's Stainingo Acid Fast Bacilli (AFB) Staining• Endospore Staining• Negative Staining<ul style="list-style-type: none">o Capsule Staining
Biochemical Characterization for Bacterial Identification <ul style="list-style-type: none">• IMViC Test• Oxidase Test• Catalase Test
Isolation and Identification of Fungi
Antibiotic Susceptibility Tests <ul style="list-style-type: none">• Disc Diffusion Test
Enumeration of Bacteria: Growth Kinetic Study

Presentation, Report Submission and Viva-Voce

Medical Microbiology (15 days)

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">o Gram's Stainingo Acid Fast Bacilli (AFB) Staining• Endospore Staining• Negative Staining• Capsule Staining
Biochemical Characterization for Bacterial Identification <ul style="list-style-type: none">• IMViC Test• Oxidase Test• Catalase Test
Isolation and Identification of Fungi
Antibiotic Susceptibility Tests <ul style="list-style-type: none">• Disc Diffusion Test

Enumeration of Bacteria: Growth Kinetic Study
Presentation, Report Submission and Viva-Voce

Medical Microbiology (30 days)

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

- Disc Diffusion Test
- Broth Dilution Test
- E-Test

Enumeration of Bacteria: Growth Kinetic Study

Automation in Medical Microbiology (Demonstration Only)

- VITEK
- BACTEC MGIT 320 (TB Culture)
- BACTEC MGIT 9050 (Blood Culture)
- Alifex (Urine Analysis – For Early Detection)

Presentation, Report Submission and Viva-Voce