

# Microbiology

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## Program

### Part 1

Introduction to microorganisms

#### *General Bacteriology*

Morphology, structure and function of the bacterial cell

Bacterial growth, cultivation mediums, and biochemistry assays for bacterial identification

The bacterial spore

Bacterial genetics and metabolism

Pathogenicity mechanisms and toxins

#### *General Virology*

Morphology, structure and replication of viruses

Classification of viruses

Oncogenic viruses

Prions

Viral isolation, cultivation and titration

Viral genetics

### Part 2

Microbe-host interactions

Control measures

Chemotherapy against microorganisms

Diagnostic methods

Vaccines

#### *Special Bacteriology*

Spirochetaceae (Treponema, Borrelia), Leptospiraceae (Leptospira),

Spirillaceae (Campylobacter), Pseudomonadaceae (Pseudomonas),

Legionellaceae (Legionella), Neisseriaceae (Neisseria, Moraxella),

Brucella, Bordetella, Francisella, Enterobacteriaceae (Escherichia,

Shigella, Salmonella, Proteus, Klebsiella, Yersinia), Vibrionaceae

(Vibrio), Pasteurellaceae (Pasteurella, Haemophilus), Rickettsiaceae

(Rickettsia), Chlamydiaceae (Chlamydia), Micrococcaceae

(Staphylococcus), Streptococcaceae (Streptococcus),

Bacillaceae (Bacillus e Clostridium), Listeria, Corynebacterium,

Actinomycetaceae, Mycobacteriaceae (M. Tuberculosis, M.

leprae, M. Atipici), Nocardiaceae (Nocardia), Mycoplasmataceae

(Mycoplasma, Ureoplasma), Streptomycetaceae (Streptomices).

#### *Special Virology*

DNA viruses: Adenoviridae, Papillomaviridae, Herpesviridae, Poxviridae,  
Parvoviridae.

RNA viruses: Orthomyxoviridae, Paramyxoviridae, Picornaviridae,

Reoviridae, Rhabdoviridae, Togaviridae, Coronaviridae, Arenaviridae,  
Flaviviridae, Filoviridae, Bunyaviridae.

DNA or RNA viruses using reverse transcriptase : Epadnaviridae, Retroviridae.

*Mycology*

Introduction to mycology

Mycosis of medical interest

*Parasitology*

Introduction to parasitology

Parasites of medical interest

**Book of choice:**

Sherris Medical Microbiology, Fifth Edition, Ed. McGraw-Hill