

*Transfer
Mailed 05.15.98*

MEDICAL MICROBIOLOGY & INFECTIOUS DISEASES (MI) 1330

MI 1330 is an introductory course in microbiology designed specifically for students of nursing. It is a one semester course (3 hours per week) consisting of 35-37 hours of lecture and 10-12 hours of videos, discussions and reviews.

After an introduction to microbiology, the course covers firstly some basic characteristics of bacteria and bacterial growth, concentrating on those aspects important in contributing to disease. Then, the body's mechanisms for dealing with bacteria, and preventing or overcoming infectious diseases are covered (including immunity and immunization), as well as various modes of spread of infection.

The course then deals systematically with the major groups of bacteria which cause human infection, with emphasis on those of importance in developed countries. The progression of information on microorganisms is interspersed with clinical vignettes which approach infections from the disease point of view rather than the organism's point of view. These are given once the various important organisms causing the specific disease have been dealt with.

Five lectures are then given on virological diseases of importance, and this section is followed by lectures on fungal and protozoal diseases.

Control of microorganisms by disinfection, sterilization and hygiene, particularly in the hospital environment, is then presented, and the various methods used to prevent nosocomial infections with emphasis on the infectious patient, surgical procedures and the compromised patient are given.

The use and mechanism of action of a variety of drugs and antibiotics will also be discussed.

Examinations will consist of multiple-choice questions, with the following weighting:

quizzes (2)	10%
mid-term exam	40%
final exam	50%

TEXTBOOK: Introduction to Microbiology for the Health Sciences, 1989 by Jensen, M.M. and Wright, D.N. (Prentice-Hall Canada Inc.)

MI 1330 LECTURE OUTLINE

<u>Hours</u>	<u>Topic</u>
6	Introduction of microbiology microbiology and nursing microbial structure microbial metabolism pathogenicity factors normal body flora transmission of disease body's defence mechanisms
1	Staphylococcus species pathogenicity (haemolysis) superficial infections systematic infections treatment drug resistance hospital infection control
1	Streptococcus species pathogenicity (haemolysis) virulence factors infections treatment hospital infection control
1	Endocarditis - clinical aspects
1	Enterobacteria -Escherichia coli -Salmonella -Klebsiella -Proteus -Yersinia
1	Non-fermentative Gram - ve bacteria Pseudomonas species nosocomial infections burns cystic fibrosis treatment drug resistance infection control

<u>Hours</u>	<u>Topic</u>
2	Other Gram - ve bacteria Legionella Haemophilus Neisseria Bordatella
1	Pneumonia - clinical aspects
1	Meningitis - clinical aspects
3	Vaccination and chemotherapeutic agents vaccination schedule penecillins aminoglycosides tetracyclines chloramphenicol erythromycin lincomycin/clindamycin rifampin cephalosporins others
1	Anaerobic bacteria Clostridium species tetanus botulism gangrene treatment immunization Bacteroides species
2	Sexually Transmitted Diseases Chlamydia Gonorrhea Syphilis A.I.D.S.
1	Urinary Tract Infections - clinical aspects

<u>Hours</u>	<u>Topic</u>
1	Gram +ve bacteria Diphtheria Actinomyces Bacillus cereus Anthrax
1	Mycobacterium species tuberculosis leprosy
1	Cellulitis - clinical aspects
5	Viruses properties of viruses immune response influenza respiratory syncytial virus measles herpes hepatitis H.I.V. Chemotherapy
1	Fungi major types of disease Tinea Sporotrichosis Candidiasis Coccidioidomycosis Histoplasmosis
2	Protozoa Giardiasis Trichomoniasis Toxoplasmosis Cryptosporidium Pneumcystis

<u>Hours</u>	<u>Topic</u>
1	Helminths Trichinella Ascaris Enterobius
1	Sterilization and disinfection physical control chemical control
1	Nosocomial infections and control

MI 1330 LABORATORY SCHEDULE

1. Safety
Microscopic observation of microorganisms: stained preparations
wet mounts and motility

Demonstrations - bacterial structure
blood cells
phagocytosis

2. Preparation and staining: simple stain (methylene blue)
differential stain (Gram's stain)
Culture of bacteria: streak plate
spread plate
mixed cultures
Demonstrations - differential and selective media
anaerobic culture

3. Microbes in the environment: culture samples from: mouth and skin
air
laboratory
personal items

Susceptibility to antibiotics

4. Sexually Transmitted Diseases (demonstrations)
Chlamydia
Neisseria gonorrhoea
Treponema pallidum
Ureaplasma
Candida albicans
Trichomonas vaginalis