

Name of the module: Clinical Microbiology and Mycology**Number of module: 471-8-2009&471-8-2019****BGU Credits:** 6**ECTS credits:****Academic year:** 2**Semester:** 1+2**Hours of instruction:** 4 hours/week frontal lecture, 19 hour/year laboratory tutorial**Location of instruction:** Lectures and Tutorials in rooms in the Deichmann Building of the Medical Faculty as scheduled.**Language of instruction:** Instruction is in Hebrew and English. Reading and Guidelines in Hebrew and English. Student submitted material in Hebrew and English.**Cycle:** MD students**Position:** Basic course. A passing mark is obligatory for students in the MD program.**Field of Education:** Microbiology and mycology**Responsible department:** Shraga Segal Department of Microbiology, Immunology and Genetics**General prerequisites:** Cell Biology**Grading scale:** Percentage, with 65% passing mark.**Course Description:** A combination of frontal lectures and laboratory tutorials sessions that teach the fundamentals of Microbiology , mycology and clinical microbiology in theory and practice.**Aims of the module:** The purpose of the module is to expose the students to the world of microbiology and infectious disease.**Objectives of the module:** each student will: 1. Study the basic principles of bacterial growth, metabolism and genetics 2. Study the properties of various groups of pathogens (bacteria and fungi) that cause diseases in human and animals. 3. Study the various mechanisms by which bacteria and fungi cause diseases.**Learning outcomes of the module:** On successful completion of the course, the student should be able to:

1. Recount the basic principles of microbiology, including classification and taxonomy, microbial physiology and genetics, control of microorganisms through the use of physical and chemical agents, antibiotics, host-parasite relationships, and epidemiological concepts. Bacterial and fungal infectious organisms are all represented in this series.
2. Discuss the ways in which bacteria and fungi cause disease in human and animals, antibiotic treatment, the problem of antibiotic resistance and the mechanism that are involved in this resistance.
3. Perform basic laboratory assays for the identification of a pathogen in a given disease.
4. **Attendance regulation:** Laboratory training and laboratory assignments are mandatory.

Teaching arrangement and method of instruction: An integrated set of frontal lectures in a classroom setting, laboratory training and laboratory assignments should be submitted by the students.

Lecturers and coordinators: Prof. Esther Priel

Lecturers: Prof. Y. Mizrachi-Nebenzhal,

Prof. P. Zagupsky, Dr. Y. Moran-Gilad

Lab. Coordinator: Prof. Y. Mizrachi-

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Office hours: On an ad hoc basis,

Sundays to Thursday, 9:00 am to 5:00

pm.

Module evaluation: Organized yearly feedback from students at end of semester. Periodic review by academic committee.

Confirmation: the syllabus was confirmed by the faculty academic advisory committee to be valid on 2012

Last update: 2015

Assessment:

1. Final exam, 80%
2. Lab. Exam + Lab. assignments 20%

100%

Work and assignments: Students are briefed on the course work, including laboratory assignments, at the beginning of the year.

Time required for individual work: Reading, lab-related work, and material review is estimated requiring 3 to 4 hours/week.

The time spent (hours) on each of the topics (frontal lectures only), in the order shown, is as follows:

Teaching unit: Topics (hrs)

Semester I

1. Introduction- Bacterial taxonomy, Bacterial morphology and cell wall structure (2)
2. Bacterial metabolism, growth and nutrition(2)
3. Bacterial genetics (2)
4. Antibacterial agents (2)
5. Antibiotic resistance (2)
6. Staphylococcus (4)
7. Meningococcus, gonococcus (2)
8. Haemophilus, Bordetella (2)
9. Molecular epidemiology (2)
10. Pneumococcus (2)
11. Streptococcus (4)
12. Listeria (2)
13. Mycology (8)
14. Infections in immunodeficiency patients

Semester II

1. Enterobacteriaceae, vibriaceae, campylobacter, helicobacter (6)
2. Spirochaetaceae (Borrelia, Leptospira) (2)
3. Non-fermentative gram (-) bacteria (2)
4. Mycoplasma (2)
5. Legionella (2)
6. Brucella (2)
7. Rickettsia (2)
8. Anaerobic gram (+) bacilli (4)
9. Diagnostic methods in infectious diseases (4)
10. Host-parasite relationship (2)
11. Pathogen and bioterror (anthrax, tularemia) (2)
12. Chlamydia (2)
13. Mycobacterium (4)
14. Case reports discussion (4)

Laboratory training: The laboratory program is constructed around two experimental challenges; 1. Methods for isolation of bacteria from clinical specimen 2. Methods for the identification of the infectious agent (Staphylococcus, streptococcus, enterobacteriaceae, mycoplasma).

Reading: 1. Medical microbiology, Murray et al, fourth edition

2. Manual of Clinical Microbiology, Murray et al, Sixth edition

*** All learning material will be available to the students on the module's website (high-learn)/ library/ electronic documents available to BGU students.**





