

Microbiology Course Specifications
3rd year of M.B.B.Ch. Program
2017-2018

University: Aswan

Faculty: Medicine

Department: Medical Microbiology and Immunology

1- basic course information

- **Course title:** Medical Microbiology and Immunology
- **Code:** Amed012
- **Academic year / Level:** Third year
- **Programme(s) on which the course is given:** M.B.B.Ch. program
- **Department offering the course:** Department of Medical Microbiology and Immunology

Lecture: 90 hours

Tutorial/Practical: 60 hours

Total: 150 hours

External evaluator: Ahmed Sadik Ahmed, Professor of Medical Microbiology and Immunology, Faculty of Medicine, Assiut University.

Khaled Mohamed Hassaneen Professor of Medical Microbiology and Immunology, Faculty of Medicine, Assiut University.

Date of last revision: 7-2017

2- Overall aims

- 1 Understand the basic features of general bacteriology, virology and mycology.
- 2 Provide an appropriate background covering the immune system, its protective functions and its role in the patho-

Prof.Dr:Nady Kamal Aziz

Professor /chairman

OR:asw_uni@yahoo.com

of Quality Insurance Mobil: 01143518336 - 01210002575

Accreditation Center of Aswan University work phone: 0973482232 FAX: 0973482232

EMIL:Nadykamal@yahoo.com

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physiology of infectious and non-infectious diseases.

- 3 Know the common infections and diseases of medical importance, their microbial causes, as well as laboratory diagnosis, treatment, prevention and control of such diseases.
- 4 Practice the principles of sterilization and infection control

3- Intended learning outcomes (ILOs)

A- Knowledge and understanding

By the end of the course, students should be able to:

- A1- Describe bacterial, viral and fungal morphology and know their physiology and genetics
- A2- Identify the host parasite relationship and microbial pathogens
- A3- Describe the physiology of the immune system, its beneficial role, as well as its detrimental role in hypersensitivity, autoimmunity and transplant rejection
- A4- Describe the morphology, culture, antigenic structure and virulence factors of microorganisms of medical importance
- A5- Mention the most important infectious clinical conditions and outline the diagnosis, treatment, prevention and control of the most likely organisms causing such diseases.
- A6- Describe the most important methods of decontamination and principles of infection control.
- A7- Describe the basics of antimicrobial uses and resistance
- A8- Mention the impact of molecular technology in microbiology and immunology

B- Intellectual skills

By the end of the course, students should be able to:

- B1- Comprehend microbiological, immunological and molecular reports
- B2- Correlate according to evidence the causal relationship of microbes and diseases
- B3- Predict the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage
- B4- Categorize a microorganism as a bacterium, virus or fungus according to standard taxonomy

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B5- Analyze the results of microbiological, serological and molecular tests.

B6- Develop a systematic approach for laboratory diagnosis of common infectious clinical conditions and recommend the most appropriate and cost-effective tool leading to the identification of the causative organism.

C- Professional and practical skills

By the end of the course, students should be able to:

- C1- Carry out examination of medically important bacteria based on microscopic examination of stained preparations.
- C2- Perform a Gram stain and a Ziehl-Neelsen stain and identify micro- organisms according to morphology and characteristics, stained preparations.
- C3- Examine culture media and biochemical tests commonly used for bacterial identification and distinguish positive and negative results.
- C4- Perform hand wash and control of steam sterilization.

D- General skills

By the end of the course, students should be able to:

- D1- Display the facts using printable sheets in the field of bacteriology and immunology
- D2- Complete a full scientific reports in the field of bacteriology and immunology.
- D3- Communicate in groups and team in laboratory experiments
- D4- Follow the computer-based tools and internet to extract Information and knowledge

4- Course contents

Topic	No. of Hours	Lecture	Practical/Tutorial
General Bacteriology	30	18	12
Immunology	17	13	4
Systemic Bacteriology	64	34	30
General Virology	6	4	2
Systemic Virology	12	10	2
General Mycology	8	4	4
Systemic Mycology	3	3	-
Applied Microbiology	10	4	6
Total	150	90	60

5- Teaching and learning Methods:

1. Lectures
2. Small group discussion sessions in laboratory
3. Practical classes
4. Micro assignment and reports on up-date infection problems.
- 5- Quiz to solve case studies
5. Office hours (Tutorial)
6. Special classes outside the teaching schedule
- 8- Case studies.

Facilities required for teaching and learning:

- 1- Laminar flow
- 2- Lap Top
- 3- Microscope (oil immersion)
- 4- Laboratories instruments (Incubator – Hot air oven - autoclave)

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5-E- Learning.

6- Teaching and learning Methods for students with learning difficulties:

1. Lectures
2. Small group discussion sessions in laboratory
3. Practical classes **using powerpoint facility**
4. Micro assignment and reports on up-date infection problems. 5- Quiz to solve case studies
5. Office hours (Tutorial)
6. *Special classes outside the teaching schedule*
- 7.

7- Student assessment

A- Methods

1. Written Examination for assessment of knowledge and understanding and Intellectual skills (a1-a8, b1-b6)
2. Oral Examination for assessment of knowledge and understanding outcomes, intellectual skills, and general skills (a1-a8, b1-b6, d1-d4)
3. Practical Examination for assessment of practical skills (c1-c4) and intellectual skills (b1-b6)
4. Quiz to assess intellectual skills (b1-b6)
5. Micro-report to assess general skills (d1-d4) 6- Case studies (A1-A8, B1-B6, C1-C4, D1-D4)

B- Assessment schedule

- **Assessment 1:** Mid-term exam by the end of the 1st term
- **Assessment 2:** Course assignment (Microreports and quiz)
- **Assessment 3:** Final practical examination by the end of the year
- **Assessment 4:** Final written examination by the end of the year
- **Assessment 5;** Final oral examination by the end of the year
- **Assessment 6** - attendance criteria (student portfolio)& assignments

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C- Distribution of marks

Assessment 1 and 2	20%
Final written exam	50 %
Final Oral exam	15 %
Final Practical exam	15 %
Total	100%

8- List of references:

- 1- Course notes: Department theoretical books and practical manual (Lectures and practical)
- 2- Essential books: Medical Microbiology by E.Jawetz 2008.
- 3- Recommended books: Text Book Of Microbiology, by R. Ananthanarayan, CK.J Paniker 6th (2004)
- 4- Periodicals and web sites of Microbiology and Immunology, <http://www.med-ed-online.org/>, Midline Pubmed & Google.

Course coordinator: Proff. Ahmed Sadik Ahmed
Head of Department: Dr. Mohamed Mostafa Amin

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