COURSE SPECIFICATION

Medical Microbiology & Immunology

Faculty of Medicine– Mansoura University

Administrative information

(1) Programme offering the course:	Postgraduate Master degree of Medical Parasitology
(2) Department offering the programme:	Medical Parasitology Department
(3) Department responsible for teaching the course:	Medical microbiology & immunology
(4) Part of the programme:	first part
(5) Date of approval by the Department's council	**9-5-2016**
(6) Date of last approval of programme specification by Faculty council	9-8-2016
(7) Course title:	microbiology
(8) Course code:	**(PAR 507)**
(9) Total teaching hours:	45 hours lectures 30 hours practical
(10) Credit hours	3 lectures 1 practical

(A) Professional information

1-Course Aims: the broad aim of the course is to:

(1) Enable the student to understand the commonly known pathogenic organisms (Bacteria, Fungi, Viruses) through study the microbial characters.

(2) Teach the student the basic elements of immune response.

(3) Enable the student to know the advances in microbial genetics.

(4) Enable the student to practice available techniques for diagnosis of microbial infections and immunological techniques.

2-Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding: the course enables graduates to:

A1. Recognize the general Morphology and structure of bacteria, viruses and fungi.

A2. Recognize Bacterial physiology and growth.

A3. Recognize the host microbe relationship and microbial pathogenesis.

A4. Culture character, antigenic structure and virulence factors of microorganisms of medical importance.

A5. Describe general methods for identification of bacteria, viruses and fungi.

A6. Describe the most important methods of decontamination and principles of infection control.

A7. Explain innate immunity, complement.

A8. Discuss acquired immunity (humoral and cell mediated).

A9. Recognize the role of immune system in the patho-physiology of infectious and non- infectious diseases.

A10. Explain tumor immunology.

A11 Explain hypersensitivity, autoimmunity.

A12. Discuss transplantation immunology.

A13. Describe important antigen-antibody reactions.

A14. Explain Immunodeficiency.

A15. Recognize the microbial causes, laboratory diagnosis, treatment, prevention and control of common infections and diseases of medical importance.

A16. Explain microbial genetics, advance in the field and the impact of molecular technology in microbiology and immunology.

B- Intellectual skills

The Postgraduate Degree provides opportunities for candidates to achieve and demonstrate the following intellectual qualities:

B1. Interpret results of microbiological, serological and molecular tests.

B2. Formulate a systematic approach for laboratory diagnosis of common infectious clinical conditions.

B3. Select the most appropriate tool to the identification of the causative organism.

B4. Evaluate according to evidence the causal relationship of microbes and diseases.

C- Professional/practical skills

The Postgraduate Degree provides opportunities for candidates to demonstrate the following professional/practical skills:

C1. Identify medically important bacteria based on microscopic examination of stained preparations.

C2. Prepare a Gram and a Ziehl-Neelsen stained films and identify, according to morphology and characteristics, stained preparations.

C3. Conduct serological tests commonly used for bacterial identification and distinguish positive and negative results.

C4. Perform hand wash and identify different physical and chemical methods of sterilization.

D– Communication & Transferable skills

The Postgraduate Degree provides the opportunity to demonstrate the following transferable skills:

D1. Establish a concise scientific activity according to standard scientific thinking and integrity.

- Review literature on a research topic.
- Retrieve recent data from web sites
- Manage time efficiently.

D2. Work productively in a team.

- Communicate effectively and respectively with colleagues, supervisors and staff members

D3. Able to react positively with health care professionals, the national campaigns and health authorities which are conducted to infection control practice.

(3) Curriculum structure and content:

Subjects	Lectures/week	Clinical	Laboratory/week
Medical Microbiology& Immunology **<u>1- General microbiology:</u>** -Introduction to microbial causes of human disease. -classification and pathogenicity of microbes **<u>2- Microbial genetics:</u>** -basic microbial genetics. -molecular techniques in diagnosis of microbial diseases. **<u>3- Immunology:</u>** -Basic immunology. -Clinical immunology. **<u>4-clinical bacteriology:</u>** -Arthropod-born diseases - Milk-born diseases - Water-born diseases - Urinary tract infection - Gastro-enteritis -Food poisoning -Zoonotic diseases. -Nosocomial infection & infection control **<u>5- Virology:</u>** -General virology **<u>6- Mycology:</u>** -General mycology	(3 hours) 5 hours 5 hours 10 hours 20 hours 3 hours 2hours		

Practical skills (30 hours)

Skill	Objective	Teaching hours
Examination of microsc slides	Identification of medically important bacteria *Staphylococcus, Streptococci,*, gram-negative bacilli, *Candida albicans*	7 hours
Stained film preparatio 1- Gram stain. 2- Ziehl Nelseen stain.	**Identification of organism according to morphology and characteristics of stained preparations.**	**8hours**
slide agglutination, tube agglutination, single radial rimmunodiffusion, double diffusion (Elek's test), toxin-antitoxin neutralization,	Interpretation of positive negative results	5hours
Performance of possibl methods of sterilizatior	Infection control	5hours
Case studies and microbiological test results	Analysis and commenting	5hours

(4) Teaching methods:

4.1: Lectures

4.2: Power point presentation

4.3: : Seminar one hour duration done every 4 weeks about the recent advances in this field

4.4 lab classes

(5) Assessment methods:

Written exam for assessment of knowledge and intellectual ILOs

MCQ for assessment of knowledge and intellectual ILOs

Oral for assessment of knowledge, intellectual and transferable ILOs

OSPE for assessment of knowledge, intellectual, practical and transferable ILOs

Percentage of each Assessment to the total mark:

Other assessment without marks: seminars as described above included in the log book.

Assessment tool:

Tools	Marks	Percentage of the total mark
Written exam	72	60%
MCQ	18	
Structured Oral exam	30	20%
OSPE Practical exam	30	20%
Total	150	

(6) References of the course:

Jewtez: Principles of Microbiology.

Course coordinator: Dr. Manar Sobh Azab

Head of the department: Dr. **Hala Ahmed El Nahas**

Date: /6/2016