Course specification
2018- 2019
Faculty of Pharmacy
Mansoura University

Fourth level

Course specification of Microbiology and Immunology

University: Mansoura
Faculty : Pharmacy
Department : Microbiology and Immunology
Course title: Medical Microbiology and Immunology

Program on which the course is given	B. Pharm
Academic Level	Fourth Level, First semester
Date of course specification approval	12/9/2018

1- Basic Information : Course data :

Course title:	Medical Microbiology and Immunology	**Code:** PM413	
Specialization:	Medical		
Prerequisite:			
Teaching Hours:	**Lecture:** 2	**Practical:**1	
Number of units: (credit hours)	3		

2- Course Aims:

On completion of the course, the student will be able to describe the common microbial pathogens and the mechanisms of pathogenesis, describe the clinical manifestation of disease and diagnose disease based on clinical laboratory data, describe the epidemiology of infectious diseases and control measures and discuss the treatment of disease.

Intended learning outcomes (ILOs):

a- Knowledge and understanding

a1	Recognize the different sources of infection
a2	Discuss the principles of medical microbiology and immunology
a3	Define the principles of body function in health and diseases states
a4	Explain the etiology and clinical features of different diseases.
a5	Illustrate the laboratory diagnosis of different diseases and their therapeutic approaches.

b- Intellectual skills

b1	Formulate a systemic approach for the laboratory diagnosis of common clinical conditions

b2	Design a systemic approach for identification of causative agents and organisms
b3	Apply the pharmacotherapeutic principles in the proper selection and use of drugs in various disease conditions.

c- Professional and practical skills

c1	Utilize different measures to monitor and control of microbial infections.
c2	Apply laboratory tests for diagnosis of various diseases

d- General and transferable skills

d1	Work effectively in team
d2	Communicate effectively in a scientific language.

3- Contents:-

Week No	Topics	No. of hours	Lecture (hr.)	Practical
1.	Introduction to Immunology	2	2 hr	
2.	Innate and adaptive immunity	2	2	
3.	Immunoglobulins functions and properties and antigen elimination	2	2	
4.	Serological tests and deleterious effect of immunity	2	2	
5.	Pathogenesis of bacterial infection and virulence factors	2	2	
6	Enteric Gram negative rods, *Pseudomonas aeruginosa* and Helicobacter	2	2	
7	**Week 7 Med-term**			
8	Aerobic and anaerobic Gram positive rods, Mycoplasma and Mycobacteria	2	2	
9	Gram positive and Gram negative cocci	2	2	
10	Haemophilus group- Brucella- Bordetella- Spirochetes, Rickettsia - Coxiella burnetii - Chlamydia	2	2	
11	Fungal diseases and part of viral diseases	2	2	
12	Viral diseases	2	2	
13	Revision and open discussion	2	2	
14	**Week 13 Practical**			
15	**Week 14-18 Final written & oral**			

	Practical topics			
1	Introduction to medical microbiology	2		1
2	Serological tests	2		1
3	Gram negative bacteria: Enterobacteriaceae (*Escherichia coli*)	2		1
4	Gram negative bacteria: Enterobacteriaceae (*K. pneumoniae, E. aerogenes*)	2		1
5	Gram negative bacteria: Enterobacteriaceae (Proteus species)	2		1
6	Gram negative bacteria: *Pseudomonas aeruginosa*	2		1
7	**Mid Term**			
8	Gram positive bacteria: Rods (*Bacillus cereus)*	2		1
9	Gram positive bacteria: Cocci (*Staph. aureus)*	2		1
10	Gram positive bacteria: Cocci, Streptococcus species)	2		1
11	Fungi: Candida albicans	2		1
12	Activity/ Revision/ Open discussion	2		1

4- Teaching and learning Methods:

5.1	**Lectures using white board and data show.**
5.2	**Practical session using laboratory equipment (Microscopes and glass wares)**
5.3	**Research assignments**
5.4	**Case study**

5- Student Assessment:

a- Assessment methods:

1-Written exam	**To assess understanding, intellectual, professional**
2-Practical exam	**To assess professional and practical skills**
3-Oral	**To assess Knowledge, understanding, intellectual skills, general skills and confidence**
5-Case study	**To assess the skills of problem-solving and date presentation**

b- Assessment schedule

Assessment 1	Practical	13 th week
Assessment 3	Mid-term	7th week
Assessment 3	Oral	14th-18th week
Assessment 45	Written	14th-18th week

c- Weighting of assessments

1	Mid-term examination	10 %
2	Final-term examination	50 %
3	Oral examination	15 %
4	Practical examination & Semester work	25 %
Total		100%

6 - List of References

N0.	Reference	type
1	Bacterial Pathogenesis A molecular approach (Wilson , Salyers, whit and winkler 2011)	Book
2	Brooks, G.F.; Carroll, K. C.; Butel, J.S.; Morse, S. A. (2007): Jawetz, Melnick and Adelberg's Medical Microbiology. 24th ed. McGraw-Hill.	Book
3	Levinson, W. Review of Medical Microbiology and Immunology, 9th ed. LANGE REVIEW SERIES (NY: McGraw-Hill, 2006).	Book
4	Lippincott's Illustrated Reviews: Microbiology Third Edition (2013)	Book
5	Lectures notes prepared by staff members	Course notes

7- Matrix of knowledge and skills of the course

No	Course contents	Study Week	ILOS			
			Knowledge & understanding	Intellectual skills	Professional and practical skills	General & transferable skills
1.	Introduction to Immunology	1	a2,a3			d2
2.	Innate and adaptive immunity	1	a2,a3			d2
3.	Immunoglobulins functions and properties and antigen elimination	1	a2,a3			d2
4.	Serological tests and deleterious effect of immunity	1	a5	b1	c1	
5.	Pathogenesis of bacterial infection and virulence factors	1	a1,a4	b2	c2	d2

6.	Enteric Gram negative rods , *Pseudomonas aeruginosa* and Helicobacter	1	a1,a4	b2, b3	c2	d1,d2
7.	Aerobic and anaerobic Gram positive rods, Mycoplasma and Mycobacteria	1	a1,a4	b2, b3	c2	d1,d2
8.	Gram positive and Gram negative cocci	1	a1,a4	b2, b3	c2	d1,d2
9	Haemophilus group- Brucella- Bordetella- Spirochetes, Rickettsia - Coxiella burnetii - Chlamydia	1	a1,a4	b2, b3	c2	d1,d2
10	Fungal diseases and part of viral diseases	1	a1,a4	b2, b3	c2	d1,d2
11	Viral diseases	1	a1,a4	b2, b3	c2	d1,d2

Course Coordinator :	**Professor Dr. Mona Shaaban**
Head of department	**Professor Dr. Rasha M. Fathy Barwa**