Bacteriology and Mycology; Code: PM 502C

A- Basic Information

Programme(s) on which the course is given:	Bachelor of Pharmacy (Pharm D clinical)
Department responsible for offering the course:	Department of Microbiology & Immunology
Department responsible for teaching the course:	Department of Microbiology & Immunology
Academic year:	Level 3 – Fall semester
Course title and code:	Bacteriology and Mycology, PM 502C
Prerequisite:	General Microbiology &Immunology
Credit hours:	Lecture: 2, Practical: 1, Total: 3
Course Coordinator:	Dr. Ahmed Saeed Abouzeid

B- Professional Information

1 - Overall Aim of the Course

The course aims at studying bacteria and fungi causing infections to human beings. Different bacterial categories including Gram positive cocci and bacilli, Gram negative cocci and bacilli, mycobacteria, chlamydiae, rickettsiae, spirochetes, mycoplasma, ureaplasma, bacteroides, superfacial, cutaneous, subcutaneous, systemic and opportunistic fungal pathogens will be covered in the course. Routes of transmission, diseases, clinical manifestation, pathogenesis, diagnosis, treatment, prevention and control for each pathogen will be studied.

2 - Course Learning Outcomes:

Domain 1: Fundamental knowledge:

The students should be able to:

Program key elements	Course learning outcomes
1-1-1-1- Explain the basic knowledge of micro-organisms, infectious/non-infectious diseases, bioinformatics, biotechnology, and epigenetics.	**1-1-1-1-** Demonstrate proper understanding of knowledge of bacterial and fungal infections.
1-1-2-1- Utilize genetic, microbial, and epidemiological terms in pharmacy practice	**1-1-2-1-** Utilize the proper microbiological terms & abbreviations in pharmacy practice.

Domain 2 : Professional and Ethical practice

The student will be able to:

Program key elements	Course learning outcomes
2-2-1-1 Isolate, purify and identify synthetic/natural pharmaceutical substances.	**2-2-1-1 -** Utilize the appropriate methods for purification and identification of various microorganisms.

Domain 3: Pharmaceutical care

The student will be able to:

Program key elements	Course learning outcomes
3-1-2-2- Use the basis of pharmaceutical microbiology to assess suitable method for infection control.	**3-1-2-2-** Apply the principles of pharmaceutical & medical microbiology to select & assess proper methods of infection control.
3-1-3- Detect and control microbial growth & perform lab tests to identify infections.	**3-1-3-** Monitor & control microbial growth & carry out laboratory tests for identification of different infections.
3-1-4-1- Correlate the etiological, epidemiological, pathophysiological, clinical data and lab diagnosis of infections with pharmacotherapeutic approaches	**3-1-4-1-** Relate the etiology, epidemiology, laboratory diagnosis & clinical features of infections & their pharmacotherapeutic approaches.
3-2-5- Explain and advise patients, communities, and healthcare professionals about the safe use of medicines, OTC preparations and devices.	**3-2-5-** Educate & counsel patients, other health care professionals, and communities about the safe use of antibiotics to prevent bacterial and fungal infections.

3- Course Contents

Week	Lectures		Practical	
	Topic	**Credit hrs. (2)**	**Topics**	**Credit hrs. (1)**
1	*Staphylococci - Streptococci*	**2**	Culture media and specimen collection	**1**
2	*Neisseria*	**2**	*Staphylococci*	**1**
3	*Bacillus – Corynebacteria – Listeria*	**2**	*Streptococci*	**1**
4	*Clostridia - Mycobacteria* (T.B and Leprosy)	**2**	*Bacillus – Corynebacteria – Neisseria*	**1**
5	**Midterm Exam**			
6	*Enterobacteriaceae-Pseudomonas-Acinetobacter*	**2**	*Enterobacteriaceae* (part 1)	**1**
7	*Vibrios-Campylobacter-Helicobacter*	**2**	*Enterobacteriaceae* (part 2)	**1**
8	*Brucella – Hemophilic bacteria-Bordetella pertussis*	**2**	*Pseudomonas – Spirochetes-Mycobacteria (T.B)*	**1**
9	*Bacteroides-Yersinia-Legionella-Chlamydia*	**2**	Mycology	**1**
10	*Rickettsiae- Spirochetes*	**2**	Revision Spots	1

11	*Spirochetes (cont.)-Mycoplasma - Ureaplasma,*	**2**	**Practical exam**
12	Medical mycology - Formative assessment	**2**	
	Total credit	**22**	**9**

4- Teaching and Learning Methods:

. 4.1- Lectures (tools: board, projector, data show).
4.2- Practical sessions (reagents, glassware, microscopes)
4.3- Written essays (library, internet).
4.4- E-learning

5- Student Assessment Methods:

Written Midterm exam	To assess	The ability of students to follow-up the course subjects.
Practical exam and assessment of semester work (class activities)	To assess	The ability of students to apply and practice scientific knowledge
Written final exam	To assess	The overall course learning outcomes.
Oral exam	To assess	The ability of students to express their knowledge clearly and in systematic approach.

Assessment Schedule

Assessment 1	Midterm exam	Week 5
Assessment 2	Practical exam	Week 11and 12
Assessment 3	Oral exam	Week 13
Assessment 4	Final written exam	Week 13

Weighting of Assessments

Periodical examination	20
Final-term Examination	75
Oral Examination	15
Practical Examination	40
Other types of assessment	---
Total	**150**

6- List of References

Course notes

- Lecture notes of bacteriology and mycology prepared by instructors.

Essential books (textbooks)

- Topley & Wilson Microbiology and Microbial Infections, 10th edition
- Lippincott's illustrated reviews: Microbiology

Recommended books

- Topley & Wilson Microbiology and Microbial Infections, 10th edition
- Lippincott's illustrated reviews: Microbiology

Periodicals, Web sites, etc

- www.ncbi.com
- pubmed.com
- jmm.sgmjournals.org

7- Facilities Required for Teaching and Learning

Modern libraries, audio-visual tools, chemicals, cooperative assistants, glassware and instruments, lecture halls, data show, internet.

Course members:

Prof. Dr. Nadia Abdel-Halim Hassouna
Dr. Ahmed Saeed Abouzeid
Dr. Amr Shaker

Course Coordinator: Dr. Ahmed Saeed Abouzeid

Head of Department: Assoc.Prof. Dr. Sarrah Ebrahim Saleh Sarra Saleh

Course name	**Bacteriology and Mycology**
Code	**PM 502C**

Course Plan & Matrices

Course Contents		Program Key Elements	Course learning outcomes	Teaching and Learning Methods	Student Assessment Methods
Week # 1	*Staphylococci-Streptococci* P: Culture media and specimen collection	1-1-1-1, 1-1-2-1	1-1-1-1, 1-1-2-1	Lectures Open discussion Practical Training	Periodic Written Oral Practical
Week # 2	*Neisseria* P*: Staphylococci*	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Practical training	Periodic Written Oral Practical
Week # 3	*Bacillus-Corynebacteria-Listeria* P: *Streptococci*	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Open discussion brain storming Assignments, Practical training	Periodic Written Oral Practical
Week # 4	*Mycobacteria* (T.B and Leprosy) -*Clostridia* P:*Bacillus-Corynebacteria-Neisseria*	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Assignments, Practical training	Written Oral Practical
Week #5	Midterm Exam				
Week #6	*Enterobacteriaceae-Pseudomonas-Acinetobacter* P*: Enterobacteriaceae* (part 1)	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Open discussion brain storming, Practical training	Written Oral Practical
Week # 7	*Vibrios-Campylobacter-Helicobacter* P*: Enterobacteriaceae* (part 2)	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	Lectures Assignments, Practical training	Written Oral Practical

Week # 8	*Brucella-Hemophilic bacteria-Bordetella pertussis* P*: Pseudomonas-* TB - *Spirochetes*	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	Lectures Practical training	Written Oral Practical
Week # 9	*Bacteroides-Yersinia-Legionella-Chlamydia,* P: Mycology	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-1-3 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Practical training	Written Oral Practical
Week # 10	*Spirochetes-Rickettsiae* P: Revision spots	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-4-1, 3-2-5	Lectures Practical training	Written Oral Practical
Week # 11	*Spirochetes (cont.)-Mycoplasma-Ureaplasma*	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Assignments	Written Oral
Week # 12	Medical Mycology-Formative assessment	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	1-1-1-1, 2-2-1-1, 3-1-2-2, 3-1-3 3-1-4-1, 3-2-5	Lectures Open discussion	Written Oral

In case of emergency or necessity, the study will be converted into recorded and interactive lectures.

تم الاعتماد في (محضر مجلس قسم الميكروبيولوجيا والمناعة)
جلسة رقم (**11**) بتاريخ **31/8/2023**