Antimicrobial stewardship; Code: PM E07C

A- Basic Information

Programme(s) on which the course is given:	Bachelor of Pharmacy (Pharm D Clinical)
Department responsible for offering the course:	Microbiology and Immunology
Department responsible for teaching the course:	Microbiology and Immunology
Academic year:	Level four- fall semester (Elective) (2022-2023)
Course title and code:	Antimicrobial stewardship, PM E07C
Prerequisite:	Registration
Credit hours:	Lectures: 2, Practical: 0, Total: 2
Course Coordinator:	

B- Professional Information

1 - Overall Aim of the Course

This course will equip pharmacists with knowledge and tools to improve the use of these essential medications in health care practices. By the end of this course, participants should be able to understand core competencies of antimicrobial stewardship and how they can be applied to common clinical scenarios. The course will include the principles of antimicrobial prescribing, antimicrobial resistance, antibiotic allergies, urinary tract infections, community-acquired respiratory tract infections, skin and soft tissue infections, bloodstream infections, antimicrobial surgical prophylaxis, acute pharyngitis in adolescents and adults, acute infectious diarrhea, ventilator-associated pneumonia, acute otitis media.

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 Explain the basic knowledge of infectious diseases.
1.1.2.2 Integrate medical, pharmaceutical and pharmacological terms in pharmacy practice for effective scientific communication	1.1.2.2 Integrate the proper pharmaceutical and medical terms, abbreviations, and symbols in hospital and pharmacy practice for effective scientific communication.
1.1.3.4 Incorporate information from main sciences to assure quality of pharmaceutical materials/products.	1.1.3.4 Integrate knowledge from clinical sciences to prescribe, handle, and assure quality of antimicrobial agents.
1.1.4.1 Illustrate the appropriateness, and effectiveness of drugs and natural products using information from fundamental sciences.	1.1.4.2 Articulate knowledge from fundamental sciences to explain antimicrobial agents' effectiveness and evaluate their appropriateness and safety.

Domain 2: Professional and ethical practice

The students should be able to:

Program key elements	Course Learning Outcomes
2.1.1 Implement the role of all members of the health care professional team based on the professional structure regarding their legal responsibilities & authorities in compliance with pharmaceutical legislations.	2.1.1 Perform responsibilities and authorities in compliance with the legal and professional structure and role of all members of the health care professional team
2.5.2 Restore, clarify & critically assess pharmaceutical information needed in pharmacy profession.	2.5.2 Retrieve, interpret, and critically evaluate microbial and pharmaceutical information needed in pharmacy profession.

Domain 3: Pharmaceutical care

The students should be able to:

Program key elements	Course Learning Outcomes
3.2.1 Understand mechanism of action, therapeutic uses, dosage, contraindications, adverse drug reactions and drug interactions.	3.2.1. Integrate the pharmacological properties of antibiotics including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse reactions and interactions.
3.2.6 Raise clinical awareness of common health risks of drug misuse and abuse.	3.2.6. Maintain public awareness on antimicrobial resistance and the risks of antimicrobial agents' misuse and abuse.

3- Course Contents

Week	Lectures	
	Topic	**Credit hrs. (2)**
1	Antibiotic stewardship programs and teams	**2**
2	Antimicrobial resistance	**2**
3	Antibiotic allergies	**2**
4	Principles of antimicrobial prescribing in urinary tract infections	**2**
5	Principles of antimicrobial prescribing in community-acquired respiratory tract infections	**2**
6	**Midterm exam**	
7	Principles of antimicrobial prescribing in skin and soft tissue infections	**2**
8	Principles of antimicrobial prescribing in bloodstream infections	**2**
9	Principles of antimicrobial prescribing in antimicrobial surgical prophylaxis	**2**
10	Principles of antimicrobial prescribing in acute pharyngitis in adolescents and adults	**2**
11	Principles of antimicrobial prescribing in acute infectious diarrhoea	**2**
12	Principles of antimicrobial prescribing in ventilator-associated pneumonia	**2**

13	Principles of antimicrobial prescribing in acute otitis media. Nosocomial infections and infection control units	**2**
14	**Written exam**	

4- Teaching and Learning Methods:

4.1- Lectures (tools: board, projector).
4.2- Written essays (library, internet).
4.3- Team work

5- Student Assessment Methods:

Written Midterm exam	To assess	The ability of students to follow-up the course subjects.
Written final exam	To assess	The overall outcomes.
Oral exam	To assess	The overall outcomes.

Assessment Schedule

Assessment 1	Periodic exams	Week 6
Assessment 2	Final written exam	Week 14

Weighting of Assessments

Periodical examination	15%
Final-term Examination	85%
Oral Examination	--- %
Practical Examination	--- %
Other types of assessment	--- %
Total	**100 %**

6- List of References

- Antimicrobial Stewardship, 2020, Edited by Matthew Laundy, Mark Gilchrist, and Laura Whitney.
- Antimicrobial stewardship interventions: a practical guide, 2021, WHO

7- Facilities Required for Teaching and Learning

Modern libraries, audiovisual tools, chemicals, cooperative assistants, glassware and instruments

Course Coordinator:

Course members:

Head of Department: Prof. Dr. Khaled Anwar Aboshanab

Khaled Aboshanab

Course name	Antimicrobial stewardship
Code	PM E07C

Course Plan & Matrix

Course Contents		Program key elements	Course learning outcomes	Teaching and learning methods	Student assessment methods
Week # 1	Antibiotic stewardship programs and teams	1.1.2.4 2.1.1	1.1.2.4 2.1.1	Lectures Open discussion	Written Oral
Week # 2	Antimicrobial resistance	1.1.2.4 1.1.3.3 1.1.4.2	1.1.2.4 1.1.3.3 1.1.4.2	Lectures Open discussion	Written Oral
Week # 3	Antibiotic allergies	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 3.2.1 3.2.6	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 3.2.1 3.2.6	Lectures Open discussion brain storming Assignments	Written Oral
Week # 4	Principles of antimicrobial prescribing in urinary tract infections	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures Assignments	Written Oral
Week # 5	Principles of antimicrobial prescribing in community-acquired respiratory tract infections	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures Open discussion brain storming	Written Oral
Week # 6	**Midterm**				
Week # 7	Principles of antimicrobial prescribing in skin and soft tissue infections	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures Open discussion brain storming Assignments, Self-learning	Written Oral
Week # 8	Principles of antimicrobial prescribing in bloodstream infections	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures Assignments	Written Oral

Week # 9	Principles of antimicrobial prescribing in surgical prophylaxis	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures	Written Oral
Week # 10	Principles of antimicrobial prescribing in acute pharyngitis in adolescents and adults	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures	Written Oral
Week # 11	Principles of antimicrobial prescribing in acute infectious diarrhoea	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Lectures Assignments	Written Oral
Week # 12	Principles of antimicrobial prescribing in ventilator-associated pneumonia	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1	Open discussion brain storming Assignments	Written Oral
Week # 13	Principles of antimicrobial prescribing in acute otitis media. Nosocomial infections and infection control units	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1 3.2.6	1.1.1.1 1.1.2.4 1.1.3.3 1.1.4.2 2.1.1 2.5.2 3.2.1 3.2.6	Lectures Assignments	Written Oral

تم الاعتماد فى (محضر مجلس قسم الميكربيولوجيا والمناعة)
جلسة رقم (13) بتاريخ 2021/8/15