

Republic of Yemen

Ministry of Higher Education & Scientific Research

21 September University for Medicals and Applied Sciences



Faculty of Clinical Pharmacy

Program of Clinical Pharmacy & Pharm. D.

Course Specification of Medication Safety and Health Information Technology

Course No. (02.04.276)

2022

I. Course Identification and General Information:

1	Course Title:	Medication Safety and Health Information Technology			
2	Course Code & Number:	02.04.276			
3	Credit hours:	C.H			
		Th.	Seminar	Pr	Tr.
		2	-	-	-
4	Study level/ semester at which this course is offered:	5 th Level / 2 nd Semester			
5	Pre –requisite (if any):	Pharmacy management Community Pharmacy Pharmacology			
6	Co –requisite (if any):	Pharmacotherapy			
7	Program (s) in which the course is offered:	Bachelor of Clinical Pharmacy & Pharm. D.			
8	Language of teaching the course:	English			
9	Study System	Semester based System			
10	Mode of delivery:	Full Time			
11	Location of teaching the course:	Faculty of Clinical Pharmacy			
12	Prepared By:	Prof. Ali Alkaf			
13	Date of Approval	2022			

II. Course Description:

The course is aimed to improve medication safety. In addition to covering basic principles, this course provides a critical insight into various aspects of medication safety. The course will allow students to explore the humanity, the multidisciplinary and legal aspects of a medication error by interacting with healthcare professionals who have been directly involved in an event related to medication safety. Methods for identifying and implementing processes for medication safety improvements via archived cases that were reported within local health systems and other settings will be presented to students.

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III. Course Intended learning outcomes (CILOs)		Referenced PILOs
A. Knowledge and Understanding: Upon successful completion of the course, students will be able to:		
a.1	Define the principles and concepts of medication safety	A3
a.2	Describe the role of informative technology systems in improving medication safety.	A5
B. Intellectual Skills: Upon successful completion of the course, students will be able to:		
b.1	Explain the different pathways of medication error management, including the various parts and people involved	B4, B5
C. Professional and Practical Skills: Upon successful completion of the course, students will be able to:		
c.1	Apply the knowledge and skills gained to prevent, resolve, and report medication errors occurring in the workplace	C4
c.2	Use efficiently informative technology systems in prevent and resolve medication errors	C5
D. Transferable Skills: Upon successful completion of the course, students will be able to:		
d.1	Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.	D1
d.2	Present type of evidence required & tools that ensure patient medication safety and satisfaction	D3

(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1- Define the principles and concepts of medication safety	- lecture - Discussion - Assignment	- Exam - Assignment - Quiz
a2- Describe the role of informative technology systems in improving medication safety.	- lecture - Discussion - Assignment	- Exam - Assignment - Quiz

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1- Explain the different pathways of medication error management	- lecture	- Exam

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including the various parts and people involved	- Discussion	- Assignment
	- Assignment	- Quiz

(C) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1- Apply the knowledge and skills gained to prevent, resolve, and report medication errors occurring in the workplace	- lecture - Discussion - Assignment	- Exam - Assignment - Quiz
c2- Use efficiently information technology systems in prevent and resolve medication errors	- lecture - Discussion - Assignment	- Exam - Assignment - Quiz

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1- Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.	- Seminar - Class discussion	- Seminar Class Discussion
d2- Present type of evidence required & tools that ensure patient medication safety and satisfaction	- Seminar - Lecture interactive	Assignment Exam

IV. Course Content:					
A – Theoretical Aspect:					
Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	Contact hours
1	Introduction	a1	- Define medication safety. - The terminology and main concepts in context of medication safety - Examples of various medication errors	1	2
2	WHO's Third Global Challenge	a1	- Describe WHO'S Third Global Challenge: Medication without Harm and its main recommendations.	1	2
3	The Impact of Culture on	a1, b1, c1, d1,	- Medication Safety culture and the ways to support/encourage Medication Safety	1	

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	Medication Safety	d2	- culture. - Approaches to gaining engagement across units/disciplines in improving medication safety.	2	
4	Designing for Safety Using Human Factors and Ergonomics	a1, b1, b2, c1, c2, d1, d2	- Human factors principles (eg. simplification, redundancy, forcing function). - Examples of environmental design to prevent error and harm. - Examples of human factors contributors to medication errors. - Techniques for reducing error (eg. special labelling, storage, and packaging).	2	4
5	Detecting Medication Errors and Analysing Medication Error Incident Reports	b1, b2, c1, c2, d1, d2	- Methods and data sources to detect medication errors - Strengths and weaknesses of medication event detection method. - Guiding principles for medication event surveillance.	2	4
6	Midterm Exam			1	2
7	Reporting and Learning Systems for Medication Errors	b1, b2, c1, c2, d1, d2	- The way adverse events and other risks/errors take place between hospital/clinic and community pharmacy. - The significance and spectrum of various documents and materials which could be produced by successful reporting/learning system - Role of regulative authority and pharmaceutical industry for medication safety. - The impact of medication errors on the patient and implications on the patient and their family.	1	2
8	Challenges in the Safe Use of Medications	a1, a2, b1, b2, c1, c2, d1, d2	- Risk factors for adverse drug events and medication errors. - The most common types of drug-related problems. - Relationships between drug-related	1	2

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			problems and drug-related morbidity.		
9	Prescribing Errors	a 1, a2, b 1, b2, c1, c2, d1, d2	- Key approaches for addressing prescribing errors. - Health information technology used to address prescribing errors - The disadvantages health information technology and new error types - The benefits and risks of electronic prescribing.	3	6
10	Case Study: Improving Medication Safety at Policy Level	a 1, a2, b 1, b2, c1, c2, d1, d2	- Examples of addressing medication safety issues using development of guidelines and policies at the facility/provider level. - Challenges associated with guidelines and policy implementation. - Strategies to evaluate the effectiveness of these policies.	2	4
11	Final Exam	a1, a2, b1, b2, c1, c2		1	2
Number of Weeks /and Units Per Semester				16	32

B - Practical Aspect: (if any)

Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Nil			

V. Teaching strategies of the course:

- lecture – Discussion
- Assignments
- Seminars
- Feed-back learning
- Group projects

VI. Assessment strategies of the course:

- Exam
- Quiz
- Assignment

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VII. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Describe ISMP's list of high-alert medications	All CILOs	Week 3	5
2	In what situations are staff most likely to contribute to a medication error?	All CILOs	Week 6	5
Total				10

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments	Week 3, 12	10	10%	a 1, a2, b1, b2, c1, c2, d2
2	Quiz 1	Week 6	5	5%	a 1, a2, b1, b2, c1, c2, d2
3	Midterm Exam	Week 7	10	10%	a 1, a2, b1, b2, c1, c2
4	Quiz 2	Week 12	5	5%	a 1, a2, b1, b2, c1, c2, d2
5	Final exam	Week 16	70	70%	a 1, a2, b1, b2, c1, c2
Total			100	100%	

IX. Learning Resources:

- Written in the following order: (Author - Year of publication - Title - Edition - Place of publication - Publisher).

1- Required Textbook(s) (maximum two).

- Michael R. Cohen (2007), Medication Errors, 2nd Edition, ISBN: 1-58212-092-7
- DiPiro et al, 2020. Pharmacotherapy: A Pathophysiological Approach, ed.: Pharmaeconomic Chapter, 11th edition

2- Essential References.

1. Molly Courtenay (2009), Medication Safety (An Essential Guide), 1st edition
2. Henri R. Manasse, Jr. and Kasey K. Thompson(2005), Medication Safety: A Guide for Healthcare Facilities, 1st Edition, ISBN: 978-1-58528-089-6

3- Electronic Materials and Web Sites etc.

- <https://www.ismp.org/guidelines>
- Medication Safety - ASHP Medication Safety – WHO

I. Course Policies: (Based on the Uniform Students' Bylaw (2007))

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1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

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II. - Information about Faculty Member Responsible for the Course:

Name of Faculty Member	Prof. Ali Alkaf	Office Hours					
Location & Telephone No.		SAT	SUN	MON	TUE	WED	THU
E-mail							

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1	Course Title:	Medication Safety and Health Information Technology				
2	Course Code & Number:	02.04.276				
3	Credit hours:	C.H				TOTAL
		Th.	Seminar	Pr	Tr.	
		2	--		--	
4	Study level/ semester at which this course is offered:	5 th Level / 2 nd Semester				
5	Pre –requisite (if any):	Pharmacy management Community Pharmacy Pharmacology				
6	Co –requisite (if any):	Pharmacotherapy I–V				
7	Program (s) in which the course is offered:	Bachelor of Clinical Pharmacy & Pharm. D.				
8	Language of teaching the course:	English				
9	Study System	Semester based System				
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V. Course Intended learning outcomes (CILOs)

Upon completion of this Course, student will be able to:

a.1	Define the principles and concepts of medication safety
a.2	Describe the role of informative technology systems in improving medication safety.
b.1	Explain the different pathways of medication error management, including the various parts and people involved
c.1	Apply the knowledge and skills gained to prevent, resolve, and report medication errors occurring in the workplace
c.2	Use efficiently informative technology systems in prevent and resolve medication errors
d.1	Communicate information to healthcare providers, patients and caregivers in a timely and effective manner.
d.2	Present type of evidence required & tools that ensure patient medication safety and satisfaction

VI. Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Sub Topics List	Week Due	Contact Hours
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2	WHO's Third Global Challenge	- Describe WHO'S Third Global Challenge: Medication without Harm and its main recommendations.	1	2
3	The Impact of Culture on Medication Safety	- Medication Safety culture and the ways to support/encourage Medication Safety culture.	1	

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		- Approaches to gaining engagement across units/disciplines in improving medication safety.		2
4	Designing for Safety Using Human Factors and Ergonomics	- Human factors principles (eg. simplification, redundancy, forcing function). - Examples of environmental design to prevent error and harm. - Examples of human factors contributors to medication errors. - Techniques for reducing error (eg. special labelling, storage, and packaging).	2	4
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		prescribing errors - The disadvantages health information technology and new error types - The benefits and risks of electronic prescribing.		
10	Case Study: Improving Medication Safety at Policy Level	- Examples of addressing medication safety issues using development of guidelines and policies at the facility/provider level. - Challenges associated with guidelines and policy implementation. - Strategies to evaluate the effectiveness of these policies.	2	4
11	Final exam		1	2
Number of Weeks /and Units Per Semester			16	32

B - Practical Aspect: (if any)

Order	Tasks/ Experiments	Week Due	Contact Hours
1	NA		
Number of Weeks /and Units Per Semester		14	28

VII. Teaching strategies of the course:

- Lecture – Discussion
- Assignments
- Seminars
- Feed-back learning
- Group projects

VIII. Assignments:

No	Assignments	Week Due	Mark
1	Assignment 1: Describe ISMP's list of high-alert medications	Week 3	2.5
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Total			10

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