

Republic of Yemen
Ministry of Higher Education & Scientific Research
21 September University for Medicals and Applied Sciences



Faculty of Clinical Pharmacy

Bachelor of Clinical Pharmacy & Pharm. D.

Course Specification of

Pharmacology-II

Course Code. (02.03.237)

2022



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:	Reviewed by:	Head of the Department:	Vice Dean for Quality affairs	Dean of College:
Dr. Hassan Al Mahbashi	Dr. Ali Alyahawi	Dr. ----.....	Dr. Abdulelah Thabet	Dr. Ali Alyahawi



I. General Information:

1.	Course Title:	Pharmacology-II			
2.	Course Code:	02.03.237			
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours
			Lecture	Tutorial/Seminar	Lab Clinical
		3	2		2 --
4.	Level/ Semester at which this Course is offered:	3 rd Level / 1 st Semester			
5.	Pre –Requisite (if any):	Pharmacology 1			
6.	Co –Requisite (if any):	-			
7.	Program (s) in which the Course is Offered:	Bachelor of Clinical Pharmacy & Pharm. D			
8.	Language of Teaching the Course:	English			
9.	Location of Teaching the Course:	Faculty of Clinical Pharmacy			
10.	Prepared by:	Prof. Hassan Al-Mahbashi			
11	Date and Number of Approval by Council:				

II. Course Description:

This course will provide the students with the basic concepts of the drugs working on GIT system, blood hemostasis and cardiovascular system; regarding their mechanism of action, biotransformation, side effects, contraindications and their clinical uses. In addition, this course will introduce the students to drugs used in the treatment several diseases affecting the kidney and the classes of drugs that are available to treatment gut and rheumatic arthritis.



Republic of Yemen
Ministry of Higher Education & Scientific Research
21 SEPTEMBER UMAS
Faculty of Faculty of Clinical Pharmacy
Department of
Unit of Development & Quality assurance

الجمهورية اليمنية
وزارة التعليم العالي والبحث العلمي
جامعة 21 سبتمبر للعلوم الطبية والتطبيقية
كلية الصيدلة السريرية
قسم
وحدة التطوير وضمان الجودة

Prepared by:	Reviewed by:	Head of the Department:	Vice Dean for Quality affairs	Dean of College:
Dr. Hassan Al Mahbashi	Dr. Ali Alyahawi	Dr. ----.....	Dr. Abdulelah Thabet	Dr. Ali Alyahawi



III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs	
A. Knowledge and Understanding:		I, P or M/A	
a1	Identify the major categories of drugs used for the treatment of selected blood disorders, GIT and cardiovascular diseases		A1
a2	Discuss the pathophysiological changes and drugs used in the treatment of rheumatic arthritis and gout.		A5
B. Intellectual Skills:			
b1	illustrate, the mechanism of action of drugs used in the treatment of CVD, GIT, blood and kidney disorders and their adverse effects.		B3
b2	Differentiate between drugs used for treatment of rheumatic arthritis and gout		B5
C. Professional and Practical Skills:			
c1	Investigate drug drug-interaction that effects on the activity and safety of drugs		C4
c2	Summaries the drugs used in the treatment of CVD, GIT, blood and kidney disorders		C4
D. Transferable Skills:			
d1	Using modern information technology to develop one's own capabilities.		D3
d2	Communicate and work in groups and consider ethics.		D1
I= Introduced, P=Practiced or M/A= Mastered/Advanced			

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1 Identify the major categories of drugs used for the treatment of selected blood disorders, GIT and cardiovascular diseases	- Lecture - Instructor – student Interactive - Office hour	- Exam - Assignment - Quiz
a2 Discuss the pathophysiological changes and drugs used in the treatment of rheumatic arthritis and gout.	- Lecture - Instructor – student Interactive - Office hour	- Exam - Assignment - Quiz

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1 illustrate, the mechanism of action of drugs used in the treatment of CVD, GIT, blood and kidney disorders and their adverse effects.	- Lecture - Instructor – student Interactive - Exercises - Solving Problem Methods	- Problem-Solving Exercises. - Assignment - Quiz
b2 Differentiate between drugs used for treatment of rheumatic arthritis and gout	- Lecture - Instructor – student Interactive - Exercises - Solving Problem Methods	- Problem-Solving Exercises. - Assignment - Quiz

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1 Investigate drug drug-interaction that effects on the activity and safety of drugs	- Lecture - Instructor – student Interactive - Self-Learning	- Exam - Assignment - Quiz
c2 Summaries the drugs used in the treatment of CVD ,GIT ,blood and kidney disorders	- Lecture - Instructor – student Interactive - Self-Learning	- Exam - Assignment - Quiz - Practical Reports

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1 Using modern information technology to develop one's own	- Self-Learning - Seminar - Exercises	- Presentation - Assignment - Quiz

	capabilities.		
d2	Communicate and work in groups and consider ethics.	- Seminar - Instructor–student Interactive	Presentation

IV. Course Contents:

A. Theoretical Aspect:

Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	Contact Hours
1	Pharmacology of cardiovascular system	a1, b1, c1, c2	Drugs used in the treatment of - Hypertension - Angina - Congestive heart failure - Arrhythmia - Dyslipidemia	4	8
2	Drugs Affecting Blood And Blood Formation	a1, a2, b1, b2, c1, c2, d1, d2	- Coagulants and antiplatelet drugs - Fibrinolytic and antifibrinolytic drugs Drugs used for treatment of anemia	2	4
3	Midterm exam	a1, a2, b1, b2, c1, c2, d1, d2	7 th	1	2
4	Anti-rheumatoid and Antigout Drugs	a1, a2, b1, b2, c1, c2, d1, d2	- Immunosuppressant - Acute and chronic attack of gout	2	4
5	Pharmacology of Gastrointestinal tract	a1, a2, b1, b2, c1, c2, d1, d2	- Anti acids - Anti peptic ulcer - Anti H. pylori - Antiemetic - Constipation - Diarrhea - Drugs for inflammatory bowel diseases - Anthelmintics - Antiprotozoal	4	8
6	Pharmacology of kidneys	a1, a2, b1, b2, c1, c2, d1, d2	- Treatment of hyper and hypokalemia - Treatment of benign prostatic hyperplasia - Erectile dysfunction	2	4
7	Final exam	a1, a2, b1, b2, c1, c2, d1, d2		1	2



Number of Weeks /and Units Per Semester	16	32
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B. Practical Aspect: s				
NO.	Tasks/ Experiments	Learning Outcomes	Number of Weeks	Contact Hours
1.	Study of the common laboratory animals used in experimental pharmacology and their handling.	b1, b2, c1,c2	1	2
2.	Study of the dosage forms and the routes of administration of drugs in mice/rats.	b1, b2, c1,c2	2	4
3.	Study of the effect of hepatic microsomal enzyme inhibitors and induction on the duration of action of pentobarbitone in mice/rat.	b1, b2, c1,c2	1	2
4.	Study of the effect of neuromuscular blockers and anticholinesterase on the skeletal muscles.	b1, b2, c1,c2	1	2
5.	Midterm exam	b1, b2, c1,c2	1	2
6.	Effect of cholinergic agents on rabbit eye	b1, b2, c1,c2	1	2
7.	Study of agonistic and antagonistic effects of drugs, using isolated rat/mice intestine.	b1, b2, c1,c2	2	4
8.	Record the effect of physostigmine on the concentration response curve of acetylcholine using isolated rectus abdominal muscle preparation of frog.	b1, b2, c1,c2	1	2
9.	To study the Analgesic activity of some drugs on tail flick apparatus in rats.	b1, b2, c1,c2	1	2
10.	To study the anti-inflammatory activity of some drugs in rats.	b1, b2, c1,c2	1	2
11.	Use of computer simulated CDs or Video cassettes for pharmacology practical whenever possible.	b1, b2, c1,c2	1	2
12.	Final exam		1	2
Number of Weeks /and Units Per Semester			14	28

VII. Assignments:				
No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Assignment 1; homework	4 th	2.5	a1, a2, b1, b2, c1, c2, d1, d2
2	Assignment 2: problem solve	9 th	2.5	a1, a2, b1, b2, c1, c2, d1, d2
Total				5

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	4th, 9th	5	5%	a1, a2, b1, b2, c1, c2, d1, d2
2	Quiz 1	6 th	2.5	2.5%	a1, a2, b1, b2, c1, c2, d1, d2
3	Practical Reports	2 nd -13 th	2.5	2.5%	a1, a2, b1, b2, c1, c2, d1
4	Midterm Exam (Theory)	Week 7	15	15%	a1, a2, b1, b2, c1, c2, d1, d2
5	Midterm Exam (Practical)	Week 7	10	10%	a1, a2, b1, b2, c1, c2, d1, d2
6	Final Practical Exam	14 th	15	15%	a1, a2, b1, b2, c1, c2
7	Final Exam (Theory)	Week 16	50	50%	a1, a2, b1, b2, c1, c2, d1, d2
Total			100	100%	

IX. Learning Resources:

1- Required Textbook(s):

1- Required Textbook(s) Lippincott's Illustrated Review of Pharmacology; 7th ed.; Richard A Harvey & Pamela C Champe; Lippincott's Williams & Wilkins; 2018.

2- Essential References.

1 -Basic and clinical pharmacology; 15th edition; Bertram G. Katzung; McGraw Hill Medical Company; 2020.

3- Electronic Materials and Web Sites etc.

1 -<https://pubmed.ncbi.nlm.nih.gov/>



X. Course Policies: (Based on the Uniform Students' By law (2007))

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.

Faculty of Clinical Pharmacy

Bachelor of Clinical Pharmacy & Pharm. D.

Course Plan (Syllabus) of

Pharmacology-II

Course Code. 02.03.237

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:	Dr. Hassan Al Mahbashi	Office Hours					
Location& Telephone No.:							
E-mail:		SAT	SUN	MON	TUE	WED	THU

2022- 2023



II. Course Identification and General Information:

1.	Course Title:	Pharmacology-II				
2.	Course Code:	02.03.237				
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			Lecture	Tutorial /Seminar	Lab	Clinical
		3	2		2	--
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5.	Pre –Requisite (if any):	Pharmacology 1				
6.	Co –Requisite (if any):	-				
7.	Program (s) in which the Course is Offered:	Bachelor of Clinical Pharmacy & Pharm. D				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Clinical Pharmacy				
10.	Prepared by:	Prof. Hassan Al-Mahbashi				
11	Date and Number of Approval by Council:	2022				

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IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

A. Knowledge and Understanding:

a1	Identify the major categories of drugs used for the treatment of selected blood disorders, GIT and cardiovascular diseases
a2	Discuss the pathophysiological changes and drugs used in the treatment of rheumatic arthritis and gout.

B. Intellectual Skills:

b1	illustrate, the mechanism of action of drugs used in the treatment of CVD, GIT, blood and kidney disorders and their adverse effects .
b2	Differentiate between drugs used for treatment of rheumatic arthritis and gout

C. Professional and Practical Skills:

c1	Investigate drug drug-interaction that effects on the activity and safety of drugs
c2	Summaries the drugs used in the treatment of CVD, GIT, blood and kidney disorders

D. Transferable Skills:

d1	Using modern information technology to develop one's own capabilities.
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V. Course Contents:

A. Theoretical Aspect:

Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	Contact Hours
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2	Drugs Affecting Blood And	a1, a2, b1, b2, c1, c2, d1, d2	- Coagulants and antiplatelet drugs - Fibrinolytic and antifibrinolytic	2	4



	Blood Formation		drugs		
			Drugs used for treatment of anemia		
3	Mid term exam	a1, a2, b1, b2, c1, c2, d1, d2	7 th	1	2
4	Anti-rheumatoid and Antigout Drugs	a1, a2, b1, b2, c1, c2, d1, d2	- Immunosuppressant - Acute and chronic attack of gout	2	4
5	Pharmacology of Gastrointestinal tract	a1, a2, b1, b2, c1, c2, d1, d2	- Anti acids - Anti peptic ulcer - Anti H. pylori - Antiemetic - Constipation - Diarrhea - Drugs for inflammatory bowel diseases - Anthelmintics - Antiprotozoal	4	8
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7	Final exam	a1, a2, b1, b2, c1, c2		1	2
Number of Weeks /and Units Per Semester				16	32

B. Practical Aspect: s

NO.	Tasks/ Experiments	Learning Outcomes	Number of Weeks	Contact Hours
13.	Study of the common laboratory animals used in experimental pharmacology and their handling.	b1, b2, c1,c2	1	2
14.	Study of the dosage forms and the routes of administration of drugs in mice/rats.	b1, b2, c1,c2	2	4
15.	Study of the effect of hepatic microsomal enzyme inhibitors and induction on the duration of action of pentobarbitone in mice/rat.	b1, b2, c1,c2	1	2
16.	Study of the effect of neuromuscular blockers and anticholinesterase on the skeletal muscles.	b1, b2, c1,c2	1	2
17.	Midterm exam	b1, b2, c1,c2	1	2
18.	Effect of cholinergic agents on rabbit eye	b1, b2, c1,c2	1	2
19.	Study of agonistic and antagonistic effects of drugs, using isolated rat/mice intestine.	b1, b2, c1,c2	2	4
20.	Record the effect of physostigmine on the concentration	b1, b2, c1,c2	1	2



	response curve of acetylcholine using isolated rectus abdominal muscle preparation of frog.			
21.	To study the Analgesic activity of some drugs on tail flick apparatus in rats.	b1, b2, c1,c2	1	2
22.	To study the anti-inflammatory activity of some drugs in rats.	b1, b2, c1,c2	1	2
23.	Use of computer simulated CDs or Video cassettes for pharmacology practical whenever possible.	b1, b2, c1,c2	1	2
24.	Final exam		1	2
Number of Weeks /and Units Per Semester			14	28

VI. Teaching Strategies of the Course:

- Lecture
- Instructor – student Interactive
- Exercises
- Presentation
- Office hours
- Seminar
- Assignment
- Self-Learning

VII. Assessment Methods of the Course:

خطأ! لم يتم العثور على مصدر المرجع.

- Assignments
- Quiz
- Exam
- Oral Presentation
- Practical Reports

VIII. Assignments:

No.	Assignments	Week Due	Mark
1	Assignment 1; homework	4th	2.5
2	Assignment 2: problem solve	9th	2.5
Total			



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

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