

Course E-Syllabus

1	Course title	Pharmacology 2
2	Course number	1203364
3	Credit hours	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	Pharmacology 1 (1203363)
5	Program title	Pharmacy / Pharm D
6	Program code	Pharmacy / Pharm D
7	Awarding institution	The University of Jordan
8	School	Pharmacy
9	Department	Department of Biopharmaceutics & Clinical Pharmacy
10	Level of course	3 rd year
11	Year of study and semester (s)	First Semester 2021/2022
12	Final Qualification	B.Sc. in pharmacy and BSc PharmD
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Teaching methodology	Blended learning
16	Electronic platform(s)	Microsoft Teams
17	Date of production/revision	5 th of October 2021

18 Course Coordinator:

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19 Other instructors:

Name: *Dr. Ala Issa*
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20 Course Description:

As stated in the approved study plan.

The course provides students with the knowledge of pathophysiology, clinical manifestations, complications, goal of pharmacotherapy, patient education of selected endocrine, malignant and infectious disorders and central nervous system, as well as the knowledge of mechanism of action, pharmacokinetics, clinically significant side effects & drug interactions, contraindications and clinical uses of medications used in the treatment of such disorders

Some of the drugs that will be examined include:

- Drugs for endocrine diseases that affect the thyroid gland, diabetes (type 1 and 2), fertility problems, and osteoporosis
- Drugs for neurological diseases including seizures, anxiety, Parkinson's disease, depression, and psychosis.
- Drugs that act on bacteria, viruses, fungi, and ones used to treat cancer (chemotherapy)

21 Course aims and outcomes:

A- Aims:

The Pharmacology 2 course provides opportunities for students to develop and demonstrate knowledge and understanding of the effects of drugs on selected endocrine, malignant and infectious disorders and central nervous system disease processes, the mechanisms by which drugs produce their therapeutic and toxic effects, and the factors influencing their absorption, distribution and biological actions.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, students will be able to:

Successful completion of the course should lead to the following outcomes:

A. Knowledge and Understanding: Student is expected to:

A.1- Describe the elements of pharmacology, therapeutics, anatomy and physiology as appropriate for various endocrine, malignant and infectious disorders and central nervous system disease

A.2- Identify the major categories of drugs used for the treatment of selected endocrine, malignant and infectious disorders and central nervous system disease

A.3- Describe characteristics of major groups of drugs and selected individual medications in used for various endocrine, malignant and infectious disorders and central nervous system disease in term of the following: mechanism(s) of action; pharmacokinetic properties; therapeutic uses; adverse effects; drug and food interactions.

B. Intellectual Analytical and Cognitive Skills: Student is expected to:

B.1- Demonstrate knowledge of the terminology and special concepts useful in the study of pharmacology and therapeutics for various endocrine, malignant and infectious disorders and central nervous system disease.

B.2- Discuss principles of therapy with major drug groups in relation to drug selection, dosage, route, and use in special populations (e.g., children, older adults, clients with impaired renal or hepatic function).

B.3- Relate drug action at the cellular level to overall pharmacological and toxicological effects.

C. Subject-Specific Skills: Student is expected to:

C.1- Describe the general principles of hormones action, specific functions of each endocrine gland its control relations to other endocrine glands, and the functions and control of the endocrine glands.

C.2- Describe the mechanisms of action, use, and adverse effects of hormones and hormones analogues.

C.3- List the common therapeutic uses of exogenous corticosteroids and clinical considerations to their administration.

C.4- Describe the general principles of postmenopausal hormone replacement therapy

C.5- Describe the characteristics of the major classes of hormonal contraceptive preparations in term of their: mechanism(s) of action; pharmacokinetic properties; therapeutic uses; and adverse effects

C.6- Distinguish between Types 1 and 2 Diabetes Mellitus (DM) with respect to onset, etiology, and pathophysiology.

C.7- Discuss the strategies for controlling blood glucose and how these strategies relate to the mechanisms of actions of the various antidiabetic drugs.

C.8- Describes insulin's role in the management of diabetes mellitus.

C.9- Describe the roles of parathyroid hormone, calcitonin, and vitamin D in regulating calcium metabolism.

C.10- Discuss the prevention and treatment of osteoporosis.

C.11- Know the treatment and rationale for treatment of a number of neurological and psychiatric illnesses.

C.12- Describe the mechanisms involved in the development of drug tolerance and drug dependence.

C.13- Understand the basic principles of chemotherapy in bacterial, viral and fungal infections; in particular an appreciation of new and emerging infectious disease pharmacotherapy.

C.15- Know and understand the antineoplastic agents utilized in the treatment of various cancers, based on their: mechanism of action, mechanism of resistance, pharmacokinetics, adverse effects, contraindications, and drug interactions.

C.16- Explain the rationale for combination chemotherapy to treat various types of cancer.

D. Transferable Key Skills: Student is expected to:

D.1- Apply knowledge of pharmacology to choose the most appropriate regimen for the treatment of various endocrine, malignant and infectious disorders and central nervous system diseases

D.2- Apply knowledge of basic pharmacology of endocrine, CNS, and chemotherapeutic drugs to explain clinical uses and adverse effects of these agents for treatment of common disease states

D.3- Know how to obtain subjects specific information through the visit of libraries to answer questions presented in the class.

D.4- Recognize different resources of pharmacology (books, professional sites and scientific journals) and know how to evaluate the big quantity of information available

D.5- Take responsibility for own work and to exercise substantial autonomy and initiative in a learning environment

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	Introducing the course	Face-to-face simultaneous to Microsoft Teams		<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	1.2	Pancreatic Hormones & Antidiabetic drugs	Face-to-face simultaneous to Microsoft Teams	Quiz, Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	1.3				
2	2.1	Pancreatic Hormones & Antidiabetic drugs	Face-to-face simultaneous to Microsoft Teams	Quiz, Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	2.2	Pancreatic Hormones & Antidiabetic drugs	Face-to-face simultaneous to Microsoft Teams	Quiz, Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	2.3				
3	3.1	Pituitary & Hypothalamic hormones	Microsoft Teams	Quiz, Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	3.2	Pituitary & Hypothalamic hormones	Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	3.3				
4	4.1	Thyroid & Antithyroid drugs	Face-to-face simultaneous to Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	4.2	Thyroid & Antithyroid drugs	Face-to-face simultaneous to Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	4.3				
5	5.1		Face-to-face simultaneous to Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	5.2	Adrenocorticosteroids & Adrenocortical Antagonists	Face-to-face simultaneous to Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	5.3				
6	6.1	Adrenocorticosteroids & Adrenocortical Antagonists	Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	6.2	The Gonadal Hormones & Inhibitors	Microsoft Teams	Exam	<ul style="list-style-type: none"> Basic & Clinical & Pharmacology, 15th edition, 2021
	6.3				

7	7.1	The Gonadal Hormones & Inhibitors	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	7.2	Agents That Affect Bone Mineral Homeostasis	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	7.3				
8	8.1	Sedative & Hypnotic drugs	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	8.2	Sedative & Hypnotic drugs	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	8.3				
9	9.1	Antipsychotic agents & Lithium	Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	9.2	Antipsychotic agents & Lithium	Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	9.3				
10	10.1	Antiseizure Drugs	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	10.2	Antiseizure Drugs	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	10.3				
11	11.1	Antidepressants	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	11.2	Antidepressants	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	11.3				
12	12.1	Pharmacologic management of Parkinsonism and other movement disorders	Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	12.2	Antibacterial Agents	Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	12.3				

13	13.1	Antibacterial Agents	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	13.2	Antibacterial Agents	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	13.3				
14	14.1	Anticancer Agents	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	14.2	Anticancer Agents	Face-to-face simultaneous to Microsoft Teams	Exam	• Basic & Clinical & Pharmacology, 15 th edition, 2021
	14.3				

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam,...etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Quiz	10	1. Pancreatic Hormones & Antidiabetic drugs	Week 3	E-learning
Midterm Exam	30	1. Pancreatic Hormones & Antidiabetic drugs 2. Pituitary & Hypothalamic hormones 3. Thyroid & Antithyroid drugs 4. Adrenocorticosteroids & Adrenocortical Antagonists 5. The Gonadal Hormones & Inhibitors 6. Agents That Affect Bone	TBA	TBA

		Mineral Homeostasis		
Assignment	10	Drug information cards	Week 12	Microsoft forms
Final Exam	50	Whole topics covered	TBA	TBA

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

A computer or smartphone, internet connection, webcam, UJ account to access MS Teams and the UoJ exam platform

25 Course Policies:

A- Attendance policies:

- Attendance to the lectures is expected and mandatory.
- Students who are more than 5-10 minutes late for, or who leave early from class will be counted as absent.
- Students are allowed maximum of 15% of scheduled class hours per term. Any single absence beyond that will be reported to the dean and student will be subjected to the rules and regulations of University of Jordan including course dismissal. For 3 hours credit course the following regulations apply

First warning – with 4 absences

Last warning – with 5 absences

Failing in the subject – with 6 absences

B- Absences from exams and handing in assignments on time:

Makeup exams should not be given unless there is a valid excuse: student's hospitalization or death of a first-degree family member. Arrangements to take an exam at a time different than the one scheduled MUST be made prior to the scheduled exam time.

C- Health and safety procedures:

N/A

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together:

- Failing the subject, he/she cheated at
- Failing the other subjects taken in the same course
- Not allowed to register for the next semester
- The summer semester is not considered as a semester

E- Grading policy: Through exams, assignment, and short quizzes

F- Available university services that support achievement in the course: N/A

26 References:

A- Required book (s), assigned reading and audio-visuals:

- **Main Reference:**

- Basic & Clinical Pharmacology, ed. Bertram G. Katzung, Todd W. Vanderah, 15th edition, 2021. McGraw-Hill Medical. ISBN 978-1-260-45231-0
- Basic & Clinical Pharmacology, ed. Katzung, 14th edition, 2018. McGraw-Hill Medical. ISBN: 978-1-260-28817-9

B- Recommended books, materials, and media:

- Pharmacology: Examination & Board review. Katzung & Trevor, 12th edition, 2019. ISBN 978-1-259-64102-2
- Goodman & Gilman's The Pharmacological Basis of Therapeutics, 13th edition, 2018. ISBN 978-1-25-958473-2
- Access Pharmacy: <http://accesspharmacy.mhmedical.com/>
- UpToDate: www.uptodate.com
- Electronic Library of Medicine – Jordan: <http://www.elm.jo/>
- <https://www.drugs.com/>

27 Additional information:

Course Material and Announcements: Students need to use the e-learning page at the JU website to get all lecture handouts and guidelines which will be uploaded there.

In addition, course related announcements and exam results will be posted on the e-learning page and **it is the responsibility of each student to check the site regularly.**

Username and password to access the course on the e-learning page will be provided to students in the beginning of the semester.

Grievance Policy

According to the general policies applied at the University of Jordan for grievance, when there is a complaint or conflict between a student and an academic/staff member or another student, the following procedures must be followed:

1. The student writes a formal complaint describing the situation of conflict to the Dean of the School or the President of the University.
2. Dean or President will first try to resolve the controversy by meeting/listening to both parties.
3. If agreement was not possible, Dean or president forms an investigation committee which will follow, within a specified timeline, the general policies for relevant circumstances. The following points are considered:
 - a. The committee will meet/talk to both parties and witnesses (if applicable) within two weeks of conflict.
 - b. All meetings and discussions are documented according to the university policies.
 - c. Results/ recommendations will be sent to the Dean or President who is responsible for their implementation

Name of Course Coordinator: **Dr. Sameh Al-Zubiedi** Signature:  Date: **06/10/2021**

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: -----Signature: -----