مركز الاعتماد
وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

The University of Jordan

Accreditation & Quality Assurance Center

Course Syllabus

Course Name:

Advanced Pharmacodynamics

1	Course title	**Advanced pharmacodynamics** **أليات عمل الدواء المتقدم**
2	Course number	**0503717**
3	**Credit hours (theory, practical)**	**3**
	Contact hours (theory, practical)	**0**
4	Prerequisites/corequisites	
5	Program title	**Master of Pharmacology**
6	Program code	
7	Awarding institution	**University of Jordan**
8	Faculty	**Medicine**
9	Department	**Pharmacology**
10	Level of course	**Postgraduate**
11	Year of study and semester (s)	**First Year, second semester**
12	Final Qualification	**Master degree**
13	Other department (s) involved in teaching the course	**NA**
14	Language of Instruction	**English**
15	Date of production/revision	**9/10/2023**

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Dr. Alia Shatanawi

Office number: 310

Office hours: Sunday=Thursday 12-2

Phone number: +962 6 5353666 - 23458

Email addresses: a.shatanawi@ju.edu.jo

17. Other instructors:

Prof. Suheil Zmeili
Prof. Yacoub Irshaid
Prof. Malek Zihlif
Dr. Manar Zraikat

18. Course Description:

Course Description:
Pharmacodynamics deals with the actions of drugs on body cells, tissues, organs and systems.
This course will be concerned with the actions of drugs at the cellular and subcellular levels. This includes actions through receptors and understanding the post-receptor phenomena.

19. Course aims and outcomes:

A- Aims:

i. Acquire information about mechanisms of actions of drugs at the molecular level.
ii. Know the chemical mediators and cellular mechanisms with which drugs act to bring about their pharmacological effects

B- Coarse Goals: Upon completion of this course students should be able to :

1. Explain the basic principles of drug action .
2. Explain the molecular and cellular mechanisms in order to explain the basis of variability in drug response.
3. The students should be able to show their knowledge of the effects of the ANS on various body organs and the type or subtype of the receptor involved.
4. The students should, also, be able to show their knowledge of the various subtypes of cholinergic muscarinic and nicotinic receptors and adreneric receptors, alpha and beta, and the dopaminergic receptors, along with the subsequent second messenger pathway activation. They should be able to provide lists of the drugs that activate, block or modulate the functions of these receptors and to show their understanding of the medical use of these drugs.
5. The students should demonstrate their understanding of the electrical events involved in transmission at fast cholinergic synapses at post synaptic membrane of necotinic receptors and the meaning of endplate potential (epp) in a skeletal muscle fibre, or a fast excitatory postsynaptic potential (fast epsp) at the ganglionic synapse. They should also demonstrate their understanding of depolarizing block at cholinergic necotinic receptors.
6. Understand the role of histamine and prostaglandings in inflammatory reactions.
7. Recognize the functional classification of hormones.
8. Recognize the criteria for a substance to play a role as a mediator.
9. Understand steps in histamine synthesis, storage and release.
10. Describe different types of histamine receptors, their locations and actions mediated through interaction of histamine with such receptors.
11. Understand the pharmacology of drugs inhibiting histamine release.
12. Understand the pharmacology of histamine receptor antagonists.
13. Describe the inflammatory mediators derived from phospholipids, with an outline of their actions and the sites of action of anti-inflammatory drugs.
14. Describe different classes of prostaglandins receptors, their locations and actions mediated by such receptors.
15. Recognize the clinical uses of available synthetic analogs to prostaglandins.
16. Understand the role of leukotrienes in inflammatory reactions and anaphylaxis, their synthesis and actions.
17. Understand the biosynthetic steps of platelet activating factor, lipoxins and resolvins and recognize their role in inflammatory reactions.
18. Recognize the general principles of protein and peptide pharmacology.
19. Describe types of protein and peptide mediators.
20. Describe the biosynthesis and regulation of peptides
21. Recognize different types of post-translational modifications and their clinical significance.
22. Describe different receptors to bradykinin, its actions, its role in inflammation and clinical uses of its antagonists.
23. Understand the role of substance P in inflammatory reactions and clinical uses of its antagonists.
24. Recognize the actions of cytokines and their role in inflammatory reactions t of co-transmission and the transmitters involved known as non-adrenergic non-cholinergic transmition (NANC).

20. Topic Outline and Schedule:

Week/(Dates)	Topic	Chapter (Rang and Dale)
1 (11, 13/10)	How drugs act: general principles	2
2 (18, 20/10)	How drugs act: molecular aspects	3
3 (25, 27/10)	How drugs act: molecular aspects	3
4 (1, 3/11)	Chemical mediators and the autonomic nervous system	13
5 (8, 10/11)	Cholinergic transmission	14
6 (15, 17/11)	Noradrenergic transmission and Cannabinoids	15 , 20
7 (22, 24/11)	How drugs act: cellular aspects – excitation, contraction and secretion	4
8 (29/11, 1/12)	The heart Midterm Exam	22
9 (6, 8/12)	The vascular system	23
10 (13, 15/12)	Cancer pharmacology Cell proliferation, apoptosis, repair and regeneration	6, + See links at the end.
11 (20, 22/12)	Cancer pharmacology Cell proliferation, apoptosis, repair and regeneration	See Links at the end
12 (27, 29/12)	Local hormones 1: histamine and the biologically active lipids	18
13 (3, 5/1/2022)	Local hormones 2: peptides and proteins	19
14 (10, 12/1)	Revision	

25.

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

1. Lectures
2. Seminars
3. Literature review

22. Evaluation Methods and Course Requirements:

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

Midterm Exam 1	40%
Final Exam	60%
Total	100%

23. Course Policies:

A- Make up exams are held for students who did not attend regular exams if they present acceptable reasons to relevant committee.

B- Health and safety procedures: we call the student emergency clinic or civil defense office for emergency cases

C- Students who do misconducts such as cheating, plagiarism, misbehavior are reported to the dean office for an interrogation committee

D- Available university services that support achievement in the course online virtual slides, research paper and books

24. Required equipment:

none

25. References:

References:

1. Rang and Dales Pharmacology
Rang, Dale, Ritter, Flower, and Henderson
Elsevier, Churchill Livingstone
Ninth edition 2020

26. Additional information:

N/A

Name of Course Coordinator: -Dr. Alia Shatanawi Signature: Alia Shatanawi Date: 9/10/2023

Head of curriculum committee/Department: Signature: ----------

Head of Department: Dr. Alia Shatanawi Signature: Alia Shatanawi

Head of curriculum committee/Faculty: ---------- Signature: ----------

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

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Assistant Dean for Quality Assurance
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