The Hashemite University







Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

(Syllabus: General Pharmacology (0111501203

First Semester 2024/2025

COURSE INFORMATION		
Course Name: General Pharmacology	Course Code: 0111501203	
Semester: First 2024/2025	Section: All sections	
Department: Pharmacology, Public Health and Clinical Sk	ills Core Curriculum:	
Faculty: Medicine		
Day(s) and Time(s):	Credit Hours: 3	
Sunday, Tuesday and Thursday:	Prerequisites: None	
Group (1) 9:30 – 10:30 am		
Group (2) 11:30 – 12:30 am		
Classroom: Faculty of Medicine Theater, Rooms (301), (30	2)	
COL	IRSE DESCRIPTION	

This is a general pharmacology module for second year medical students. In this series of lectures, students will be introduced to the fundamental concepts of Pharmacology including pharmacokinetics, pharmacodynamics, drug metabolism, and drug interactions. In addition, the course will introduce students to the pharmacology of the autonomic nervous systems. Students will also be introduced to the major drug classes that are used to treat pain and fever. This course will introduce the pharmacology and clinical use of antibiotic drugs used in the treatment of infectious diseases. Additional lectures will also cover drugs used in chemotherapy and the treatment of cancer. New lectures are added regarding drugs in pregnancy, toxicology, evaluation of new drugs

DELIVERY METHODS

:The course will be delivered through a combination of active learning strategies. These will include

- PowerPoint lectures and active classroom-based discussion
- E-learning resources: Video lectures, e-reading assignments, and practice quizzes through Microsoft Teams

FACULTY INFORMATION

Name	Sherif Ahmed Shaltout
Academic Title:	Assistant Professor

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Office Location:	3045	
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Email Address:	sherif@hu.edu.jo - sh.sh2002@gmail.com	
Office Hours:	Sunday 10.30 – 11.30	
	Tuesday 10.30 – 11.30	
	Thursday 11.30 – 12.30	

REFERENCESAND LEARNINGRESOURCES

Required Textbook:

- Lippincott's Illustrated Reviews: Pharmacology, Richard A. Harvey, Pamela C. Champed, 7th Edition, 2018, Lippincott Williams & Wilkins.

Suggested Additional Resources:

- Goodman and Gilman's: The Pharmacological basis of therapeutics, 13th edition, McGraw-Hill.
- Pharmacology, H.P. Rang, M.M. Dale and Ritter, 8th edition, Churchill Livingstone.
- Elsevier's Integrated Pharmacology, M. Kester, K.E. Varna, S.A. Quraishi and K.D. Karpas, 3rd edition, MOSBY

Useful Web Resources:

- http://www.rxlist.com
- https://www.Uptodate.com/

STUDENT LEARNING OUTCOMES MATRIX*

Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
MD program	A-Biomedical Knowledge: Develop an understanding of: 1- Basic pharmacological concepts	 Topic 1 Pharmacokinetics: Define pharmacology, pharmacokinetics absorption, distribution, biotransformation, excretion, half-life of drug absorption and excretion, volume of distribution, bioavailability, and drug clearance Differentiate between: zero and first order kinetics, microsomal and non-microsomal enzymes Topic 2 Pharmacodynamics: Define pharmacodynamics, agonist, antagonist, partial agonist, effective dose 50, and drug tolerance Differentiate between quantitative dose response and quantal dose response curves Illustrate different factors affecting drug response. Topic 3 Miscellaneous Differentiate between different types of adverse reactions Differentiate between different types of drug interactions Identify proper methods of pharmacological intervention for drug allergy 	 MCQs Exams Self-tests
	2- Different chemotherapeutic agents	 <u>Topic 4 General Chemotherapy</u> Define chemotherapeutics, antibiotics, bacteriostatic, and bactericidal agents Differentiate between different groups and preparations of antibacterial agents Explain the mechanism of action and effects of different antibacterial drugs Enumerate indications, preparations, side effects, contraindications, and main interactions of different antibacterial drugs Illustrate different groups of anticancer drugs, immunomodulators, and antifungal drugs Explain the mechanism of action of different antibacterial anticancer and antifungal drugs 	

3- Different autonomic functions and related drugs 4- Autacoids and related drugs	 Enumerate indications, side effects, and contraindications of different anticancer and antifungal drugs Summarize the precautions, limitations of drugs with narrow safety margin (aminoglycosides, quinolones, immunomodulators, cytotoxic agents) <u>Topic 6 autonomic system and related</u> <u>drugs</u> Define miotic, mydriatic (active, passive), cycloplegic agents Differentiate between autonomic receptors and their actions Illustrate different drugs affecting autonomic nervous system Enumerate indications, side effects, and contraindications of main drugs affecting ANS Identify proper methods of pharmacological intervention for myasthenia gravis and organophosphorus compounds <u>Topic 7 Autacoids and related drugs</u> Define autacoids Illustrate different types of prostaglandins and their physiological role in the body Enumerate preparations, indications, and side effects of PGs analogues Illustrate synthesis, role, and receptors of 	
5- Drugs in pregnancy and lactation 6- Toxicity of drugs 7- Development of new drugs B-Clinical Skills Select the proper drug(s) for the proper common clinical situations C-Critical thinking skills:	 Enumerate preparations, indications, and side effects of antihistaminic drugs Topic 8 advanced subjects Illustrate using of drugs with pregnancy and lactation Illustrate toxic aspects of drugs and general lines of management of toxic patient Illustrate steps required for evaluation of new drugs Select the proper drug(s) in the proper doses for the (main bacterial infections, drugs toxicities, anaphylactic shock) Select properly the drugs suitable for different patient populations (renal, hepatic, pregnancy) Observe, identify and predict health problems based on previous experience and make decisions based on evidence rather than opinion 	 MCQs Exams Self-tests

	Maintain good communication habits, such	
	as active listening and respect.	
	 Improve problem-solving skills. 	
	 Demonstrate knowledge of resources and 	
	tools available to support lifelong learning.	

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section: Student service and care unit Tel: 053903333 ext. 4132/4583/ 5023 Location: Deanship of Students Affairs Email: <u>stydent@hu.edu.jo</u>

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- Use of the work, ideas, images or words of someone else without his/her permission or reference to them.
- Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.
- Misrepresentation of the sources that were used.

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam on the scheduled date without prior permission, and are unable to provide a medical note, will automatically receive a failure grade for this part of the assessment.

• In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with university regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment can be arranged.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting considered. The criteria for grading are listed at the end of the syllabus

Assessment	Grade	Deadline
	Weighting	Assessment

Mid Exam (MCQs)	50%	28 Nov.2024
		10-12.00 am
Final Exam (MCQs)	50%	16 Jan.2025
		10-12.00 am

Description of Exams

Mid and final exams: Test questions will predominately come from material presented in the lectures. The exams will be conducted on campus during the university scheduled exams period. Exam will consist of multiple-choice questions (MCQs)

Self-tests: Will be given for each topic. The answers of self-tests are given at the end of the topic. They will be conducted through Microsoft forms

Make-up exams: Only documented absences will be considered as per HU guidelines. Exam will consist of short essay questions

Grades: are not negotiable and are awarded according to the following criteria:

L etter Grade	Descrip tion	G rade Points
A +	Excellent	4. 00
А		3. 75
A-		3. 50
В +	Very Good	3. 25
В	0000	3. 00
В-		2. 75
C +	Good	2. 50
С		2. 25
C-		2. 00
D +	Pass	1. 75
D	Pass	1. 50
F	Fail	0. 00
I	Incompl ete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION		
"Lecture hours and weeks are approximate and may change as needed"		
Topics	Weeks	Date

<u>Topic 1</u> Pharmacokinetics		
1.1. Introduction & Routes of administration of drugs		6/10/2024
1.2. Absorption	W1	8/10/2024
1.3. Parameters of Absorption-I		10/10/2024
1.4. Distribution		13/10/2024
1.5. Biotransformation and Excretion		15/10/2024
1.6. Parameters of elimination-I	W2	17/10/2024
1.7. Parameters of elimination-II		20/10/2024
<u>Topic 2</u> Pharmacodynamics		
2.1. Mechanism of Drug action-I	W3	22/10/2024
2.2. Mechanism of Drug action-II		24/10/2024
2.3. Drug-response curves		27/10/2024
2.4. Factors affecting Drug-response-I		29/10/2024
2.5. Factors affecting Drug-response-II	W4	31/10/2024
Topic 3 Miscellaneous		
3.1. Adverse reactions		3/11/2024
3.2. Drug interactions	W5	5/11/2024
<u>Topic 4</u> General chemotherapy		
4.1. Principles of Antimicrobial Therapy-I		7/11/2024
4.2. Principles of Antimicrobial Therapy-II		10/11/2024
4.3. Antibacterial: Cell wall inhibitors-I		12/11/2024
4.4. Cell wall inhibitors-II	W6	14/11/2024
4.5. Cell wall inhibitors-III		17/11/2024
4.6. Inhibitors of bacterial protein synthesis-I		19/11/2024
4.7. Inhibitors of bacterial protein synthesis-II	W7	21/11/2024
4.8. Inhibitors of bacterial nucleic acid synthesis: Quinolones		24/11/2024
4.9. Bacterial Folic Acid Antagonists		26/11/2024
	W8	
<u>Topic 5 Special chemotherapy</u>		
5.1. Cancer chemotherapy-I		28/11/2024
Mid Exam (MCQs Exam = 50 mark	cs)	
5.2. Cancer chemotherapy-II		1/12/2024
5.3. Case study-1		3/12/2024
5.4. Antifungal agents-I	W9	5/12/2024
5.5. Antifungal agents-II		8/12/2024
<u>Topic 6</u> <u>Autonomic nervous system</u>		
6.1. Introduction to ANS & neurotransmitters	W10	10/12/2024
6.2. Adrenergic & cholinergic receptors		12/12/2024
6.3. Drugs affecting adrenergic		15/12/2024
6.4. Drugs affecting cholinergic system		17/12/2024
Topic 7 Autacoids & related drugs	W11	
7.1. Prostaglandins & PGs analogues		19/12/2024
7.2. Histamine & Antihistaminic drugs		22/12/2024
Topic 8 Advanced topics		
8.1. Drugs in pregnancy and lactation & Toxicology	W12	24/12/2024

8.2. Drug development & clinical trials		26/12/2024
Case study-2		29/12/2024
Case study-3		31/12/2024
Case study-4	W13	2/1/2025
<u>RIVISION & Discussion</u>		5/1/2025
Revision-1		
Revision-2	W14	7/1/2025
Revision-3		9/1/2025
Final Exam (MCQs Exam = 50 marks)		16/1/2025

ASSESSMENT RUBRICS

- Education will be completely on campus as follows:
- Divide the students into three groups (1, 2)
- Each group is taught on campus on Sundays, Tuesdays, and Thursdays in different hours