(Syllabus: General Pharmacology (0111501203

First Semester 2024/2025

COURSE INFORMATION	
Course Name: General Pharmacology **Semester:** First 2024/2025 **Department:** Pharmacology, Public Health and Clinical Skills **Faculty:** Medicine	**Course Code:** 0111501203 **Section:** All sections **Core Curriculum**:
Day(s) and Time(s): Sunday, Tuesday and Thursday: Group (1) 9:30 – 10:30 am Group (2) 11:30 – 12:30 am **Classroom:** Faculty of Medicine Theater, Rooms (301), (302)	**Credit Hours:** 3 **Prerequisites**: None

COURSE 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**

Office Location:	**3045**
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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
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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	**Topic 4 General Chemotherapy** ● 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 **Topic 5 Special Chemotherapy** ● Illustrate different groups of anticancer drugs, immunomodulators, and antifungal drugs ● Explain the mechanism of action of different anticancer and antifungal 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)	
	3- Different autonomic functions and related drugs	**<u>Topic 6 autonomic system and related 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	
	4- Autacoids and related drugs	**<u>Topic 7 Autacoids and related drugs</u>** ● Define autacoids ● Illustrate different 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 histamine ● Enumerate preparations, indications, and side effects of antihistaminic drugs	
	5- Drugs in pregnancy and lactation 6- Toxicity of drugs 7- Development of new drugs	**<u>Topic 8 advanced subjects</u>** ● 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	
	B-Clinical Skills Select the proper drug(s) for the proper common clinical situations	● 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)	● MCQs Exams ● Self-tests
	C-Critical thinking skills:	● Observe, identify and predict health problems based on previous experience and make decisions based on evidence rather than opinion	

		• 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: stydent@hu.edu.jo

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.**

<u>The instructor has the right to fail the coursework or deduct marks where plagiarism is detected</u>

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 Weighting	Deadline 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:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

Topics	Weeks	Date

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

8.2. Drug development & clinical trials		**26/12/2024**
Case study-2	**W13**	**29/12/2024**
Case study-3		**31/12/2024**
Case study-4		**2/1/2025**
RIVISION & Discussion	**W14**	**5/1/2025**
Revision-1		
Revision-2		**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