

**Syllabus: General Pharmacology (0111501203)****First Semester 2023/2024**

COURSE INFORMATION	
Course Name: General Pharmacology Semester: First 2023/2024 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) 10:30 – 11:30 am Group (2) 12:30 – 1:30 pm Classroom: Faculty of Medicine Theater, Rooms (301), (302), (303)	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: <ul style="list-style-type: none"> • PowerPoint lectures and active classroom-based discussion • E-learning resources: Video lectures, e-reading assignments, and practice quizzes through Microsoft Teams 	

FACULTY INFORMATION		
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REFERENCESAND LEARNINGRESOURCES	
Required Textbook: <ul style="list-style-type: none">- Lippincott's Illustrated Reviews: Pharmacology, Richard A. Harvey, Pamela C. Champe, 7th Edition, 2018, Lippincott Williams & Wilkins. Suggested Additional Resources: <ul style="list-style-type: none">- 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. Vrana, S.A. Quraishi and K.D. Karpa, 3rd edition, MOSBY Useful Web Resources: <ul style="list-style-type: none">- http://www.rxlist.com- https://www.Uptodate.com/	

STUDENT LEARNING OUTCOMES MATRIX*

Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
	1. Knowledge and understanding: By the end of the course, the student will be able to:	1.1. Define pharmacology, pharmacokinetics, pharmacodynamics, agonist, antagonist, partial agonist, effective dose 50, effective concentration 50, drug tolerance, tachyphylaxis, absorption, distribution, biotransformation, excretion, half life of drug absorption and excretion, volume of distribution, bioavailability, drug clearance, mydriatic (active, passive), cycloplegic, mydriatic, chemotherapeutic, antibiotic 1.2. Differentiate between: zero and first order kinetics, microsomal and	<ul style="list-style-type: none"> • Exams • Self-tests

		<p>non microsomal enzymes , quantitative dose response and quantal dose response curves , subminimal , minimal , median , maximal and supra- maximal doses , different groups and preparations of drugs affecting autonomic nervous system ,autacoids, antimicrobial ,antiviral ,anti fungal ,anti protozoal ,anticancer , immunomodulators</p> <p>1.3.Illustrate the effect of sympathomimetics , sympatholytics , parasympathomimetics , parasympatholytics , autacoids , autacoids agonists and antagonists, urinary tract infections , venereal diseases , gram +ve & gram-ve bacteria in different body organs , pseudomembranous colitis & other anaerobes , TB & leprosy , mild , severe , complicated malaria , mild , moderate intestinal and hepatic amoebiasis , prophylactic against meningitis , TB, malaria</p> <p>1.4. Explain the mechanism of action of drugs and drug groups mentioned in 1.3.</p> <p>1.5. Enumerate indications , preparations , side effects , contraindications , main interactions of drugs mentioned in 1.3.</p> <p>1.6. Identify proper methods of pharmacological intervention for drug allergy, myasthenia gravis</p> <p>1.7. Summarize the precautions , limitations of drugs with narrow safety margin (aminoglycosides ,quinolones ,immunomodulators ,cytotoxic agents)</p> <p>1.8. Recognize methods for ameliorating sufferings of critically ill patients and emergency conditions (organophosphorus compound poisoning ,acute glaucoma, anaphylactic shock)</p> <p>1.9 Illustrate using of drugs with pregnancy</p> <p>1.10 Illustrate steps required for evaluation of new drugs</p> <p>1.11 Illustrate toxic aspects of drugs and general lines of management of toxic patient</p>	
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	2. Practical skills: By the end of the course, the student will be able to	2.1. Select the proper drug(s) for the proper common clinical situations in proper dosage (bacterial infections, headache, drugs toxicities, anaphylactic shock)	<ul style="list-style-type: none"> Exams Self-tests
	3. Intellectual skills: By the end of the course, the student will be able to	3.1. Select properly the drugs suitable for different patient populations (renal ,hepatic , paediatric , geriatrics ,pregnancy) 3.2 Calculate accurately drug's dosage, bioavailability, plasma half-life, volume of distribution and therapeutic index 3.3. Document drug adverse reactions.	<ul style="list-style-type: none"> Exams Self-tests
	4. General and transferable skills : By the end of the course, the student will be able to	4.1. Establish life- long self- learning required for continuous professional development. 4.2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice. 4.3. Retrieve, manage, and manipulate information, including electronic means. 4.4. Present information clearly in written, electronic and oral forms.	<ul style="list-style-type: none"> On-line' reading Exams

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:

Tel:

Location:

Email:

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 Weighting	Deadline Assessment
Mid Exam	50%	Nov.2023 10-12.00 am
Final Exam	50%	Jan.2024 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.

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 teams

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"

<u>Topic 1 Pharmacokinetics</u>	<u>Weeks 1/2/3</u>	<u>8 hours</u>
1.1. Introduction& Routes of administration of drugs		
1.2. Absorption		
1.3. Parameters of Absorption-I		
1.4. Distribution		
1.5. Biotransformation and Excretion-I		
1.6. Biotransformation and Excretion-II		
1.7. Parameters of elimination-I		
1.8. Parameters of elimination-II		
<u>Topic 2 Pharmacodynamics</u>	<u>Weeks 3/4/5</u>	<u>5 hours</u>
2.1. Mechanism of Drug action-I		
2.2. Mechanism of Drug action-II		
2.3. Drug-response curves		
2.4. Factors affecting Drug-response-I		
2.5. Factors affecting Drug-response-II		
<u>Topic 3 Miscellaneous</u>	<u>Week 5</u>	<u>3 hours</u>
3.1. Adverse reactions-I		
3.2. Adverse reactions-II		
3.3. Drug interactions		
<u>Topic 4 Autonomic nervous system</u>	<u>Weeks 6/7</u>	<u>4 hours</u>
4.1. Introduction to ANS & neurotransmitters		
4.2. Adrenergic & cholinergic receptors		
4.3. Drugs affecting adrenergic		
4.4. Drugs affecting cholinergic system		
<u>Topic 5 Autacoids & related drugs</u>	<u>Weeks 7/8</u>	<u>4 hours</u>
5.1. Prostaglandins & PGs analogues		
5.2. Paracetamol & NSAIDs-I		
5.3. Paracetamol & NSAIDs-II		
5.4. Histamine & Antihistaminic drugs		
<i>Mid Exam (MCQs Exam = 50 marks)</i>		
<u>Topic 6 General chemotherapy</u>	<u>Weeks 9/10/11</u>	<u>9 hours</u>
6.1. Principles of Antimicrobial Therapy-I		
6.2. Principles of Antimicrobial Therapy-II		
6.3. Antibacterial: Cell wall inhibitors-I		
6.4. Cell wall inhibitors-II		
6.5. Cell wall inhibitors-III		
6.6. Inhibitors of bacterial protein synthesis-I		
6.7. Inhibitors of bacterial protein synthesis-II		
6.8. Inhibitors of bacterial nucleic acid synthesis: Quinolones		
6.9. Bacterial Folic Acid Antagonists		
<u>Topic 7 Special chemotherapy</u>	<u>Weeks 12/13</u>	<u>6 hours</u>
7.1. Antifungal agents-I		
7.2. Antifungal agents-II		
7.3. Antiprotozoals		

7.4. Cancer chemotherapy-I		
7.5. Cancer chemotherapy-II		
7.6. Cancer chemotherapy-III		
N.B. Antiviral drugs will be studied in Microbiology syllabus & Anthelmintics will be studied in GIT module		
<u>Topic 8 Advanced topics</u>	<u>Weeks 14</u>	<u>3 hours</u>
8.1. Drugs in pregnancy and lactation		
8.2. Drug development & clinical trials		
8.3. Toxicology		
	<u>Weeks 15/16</u>	<i>Final Exam (MCQs Exam = 50 marks)</i>

ASSESSMENT RUBRICS

- **Education will be completely on campus as follows:**
 - **Divide the students into three groups (1, 2, 3)**
 - **Each group is taught on campus on Sundays, Tuesdays, and Thursdays in different hours**