



Principle of Pharmacology Block POP-107

Student Guide

Prepared by

**PHARMACOLOGY
DEPARTMENTS**

Revised by

Medical Education Department

Sohag University

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Basic Information about the Block

Program on which the course is given:

Bachelor of Medicine and Surgery (M.B. B.Ch.).

Elements (major or minor) of the program:

Undergraduate

Departments offering the course:

Pharmacology Departments

Academic year/level:

1st year, 2nd semester.

Date of specification approval: 2024-2025

Title: Principle of Pharmacology

Code: POP-107

Credit points: 6

Weeks: 4 weeks

Lectures: 26 hours

Practical: 28 hours

Student learning activities: self-directed learning (SDL) **90 hrs.**

Group discussions (GD) and cases: 28 hrs.+ 8 hrs. formative assessment

Total: 180 hours

Block Map

Block	Points	Weeks	Learning activities		
			Contact hours/points	Formative assessment/feedback	Assignments
Principles of pharmacology POP-107	6	4 weeks	82 hrs 2.7points	0.3 point	3 points

NARS competencies covered by the block

NARS areas covered by the block

The competency areas of the NARS-Medicine competency framework are

- 1- The graduate as a health care provider.
- 2- The graduate as a health promoter.
- 3- The graduate as a professional.
- 4- The graduate as a scholar and scientist.
- 5- The graduate as a member of the health team and a part of the health care system.
- 6- The graduate as a lifelong learner and researcher.

Sub competencies

Competency Area 1: The graduate as a health care provider

- 1.1 Take and record a structured, patient centered history.
- 1.2 Adopt an empathic and holistic approach to the patients and their problems.
- 1.3 Assess the mental state of the patient.
- 1.4 Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive.
- 1.5 Prioritize issues to be addressed in a patient encounter.
- 1.6 Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors.

Competency Area II: The graduate as a health promoter

- 2.1 Identify the basic determinants of health and principles of health improvement.
- 2.2 Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing.
- 2.3 Discuss the role of nutrition and physical activity in health.
- 2.4 Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases.

Competency Area III: The graduate as a professional

- 3.1 Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect.
- 3.2 Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate.
- 3.3 Respect the different cultural beliefs and values in the community they serve.
- 3.4 Treat all patients equally, and avoid stigmatizing any regardless of their social, cultural or ethnic backgrounds, or their disabilities.
- 3.5 Ensure confidentiality and privacy of patients' information.

Competency Area IV :The graduate as a scholar• and scientist

- 4.1 Describe the normal structure of the body and its major organ systems and explain their functions.
- 4.2 Explain the molecular•, biochemical, and cellular mechanisms that are rmpo rt ant in maintaining the body's homeostasis.
- 4.3 Recognize and describe main developmental changes in humans and the effect of growth development and aging on the individual and his family.
- 4.4 Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease.

Competency Area V: The graduate as a member of the health team and part of the health care system

- 5.1 Recognize the important role played by other health care professionals in patients' management.
- 5.2 Respect colleagues and other health care professionals and work cooperatively with them, negotiating overlapping and shared responsibilities and engaging in shared decision-making for effective patient management.
- 5.3 Implement strategies to promote understanding, manage differences, and resolve conflicts in a maimer that supports collaborative work.
- 5.4 Apply leadership skills to enhance team functioning, the learning environment, and/or the health care deliveiy system.

Professional Information Block Aims

Overall Aims

This block aims to provide students with the basic principles of PHARMACOLOGY as basic concepts for understanding pharmacological effects of drugs.

Intended Learning Outcomes of the Block:

A- Knowledge and understanding

Upon completion of the course, students should be able to:

A1- Define pharmacological terms such as:

Pharmacology branches,
Drug, poison,
Pharmacodynamics,
Pharmacokinetics

A2- List the sources of drug,

A3- Mention how to apply basic principles in selected examples of drug use

A4- State the Importance of Pharmacopeias

A5- List types of drug-receptor interactions

A6- Identify receptor-effector coupling & spare receptors.

A7- Describe signaling mechanisms & drug action.

A8- List types of antagonism

A9- List types of receptor regulation and its clinical significance

A10- Describe mechanisms that contribute greatly to variation in responses.

A11- Define adverse drug reaction.

A12- Differentiate between side/ untoward & toxic effects.

A13- List the different types of adverse effects

A14- Define tolerance & describe its types.

A15- Define hypersensitivity and explain its types.

A16- Describe the various systemic adverse effects.

A17- Explain what is meant by the terms drug absorption & distribution.

A18- Explain the drug properties facilitate absorption.

A19- Describe factors affecting the absorption of drugs.

- A20-** Mention protein binding and the effect of concomitant administration of two protein-binding drugs on drug effect.
- A21-** Mention the impact of drug distribution and redistribution on drug action.
- A22-** Explain what is meant by the term drug metabolism.
- A23-** List the major mechanisms responsible for drug metabolism.
- A24-** Describe the major enzyme systems in the body that are responsible for oxidation, reduction and/or hydrolysis of selective pharmacological agents.
- A25-** Describe the basic principles of how drug metabolism alters drug action.
- A26-** Explain how drugs are chemically altered by cytochrome p-450.
- A27-** State the difference between acute and chronic drug treatment with respect to drug metabolism by the liver.
- A28-** Explain how drug-induced enzyme induction and inhibition can alter responses to drugs with examples.
- A29-** Explain the basic principles by which drugs are excreted from the body.
- A30-** Describe different routes of drug elimination with drug examples.
- A31-** Define Pharmacokinetics variables.
- A32-** Define absorption, clearance, volume of distribution, half-life.
- A33-** Define cholinergic and adrenergic transmission.
- A34-** Mention types of cholinergic and adrenergic receptors
- A35-** Define cholinergic agents.
- A36-** Study pharmacological effects of cholinergic agents
- A37-** Mention classification of cholinergic agents
- A38-** List therapeutic uses and identify side effects and contraindications of cholinergic agents.
- A39-** Define anticholinergic agents.
- A40-** List pharmacological effects of anticholinergic agents
- A41-** Mention classification of anticholinergic agents
- A42-** List therapeutic uses and identify side effects and contraindications of anticholinergic agents.
- A43-** Define sympathomimetics.
- A44-** List pharmacological effects of sympathomimetics agents
- A45-** Mention classification of sympathomimetics agents
- A46-** List therapeutic uses and identify side effects and contraindications of sympathomimetics agents.

- A47-** Define sympatholytic.
- A48-** List pharmacological effects of sympatholytic agents
- A49-** Mention classification of sympatholytic agents
- A50-** List therapeutic uses and identify side effects and contraindications of sympatholytic agents.
- A51-** Define Autacoids
- A52-** Mention classification of autacoids
- A53-** List pharmacological effects of autacoids
- A54-** List therapeutic uses and identify side effects and contraindications of autacoids and their antagonists.
- A55-** Describe the mechanisms of action and combination of anti-microbial agents.
- A56-** Mention causes of failure of the use of anti-microbial agents.
- A57-** Outline members and the adverse effects of antimicrobial therapy
- A58-** Outline members and the adverse effects of antiviral - anthelmintics - antiprotozoal
- A59-** List anticancer chemotherapy- immunomodulator and describe their mechanism of action.
- A60-** Mention examples of different anticancer groups
- A61-** - Outline items of prescription
- A62-** - Give examples of prescription.

B- Intellectual skills

B1- Use properly the pharmaceutical and medical terms, abbreviations and symbols in pharmacological practice.

B2- Select the appropriate medication therapy for a given diseases based on its etiology, pathophysiology, patient medical history, possible interactions and age related factors.

C- Practical/ Professional skills

C1-Use properly the pharmaceutical and medical terms, abbreviations and symbols in pharmacological practice.

C2- Select the appropriate medication therapy for a given diseases based on its etiology, pathophysiology, patient medical history, possible interactions and age related factors.

D- General and transferable skills

- D1- Appreciate the importance of lifelong learning and show a strong commitment to it.
- D2- Frame a question, search the literature, collect, analyze, critically appraise and utilize the obtained information to solve a particular clinical problem according to the principles of evidenced based medicine
- D3- To maintain a professional image in manner, dress, speech and interpersonal relationships that is consistent with the medical profession's accepted current standards in the community
- D4- To identify difficult ethical situations and how to properly deal with them
- D5- To express themselves freely and adequately by improving their descriptive capabilities and enhancing their communication skills
- D6- To respect his colleagues and a commitment to cooperate with other

Structure of the block

	Lectures	Practical	Tutorial/SDL Small group discussions Cases	Formative assessment	SDL	Total
Credit hours	26	28	28	8	90	180
Credit Points	0.86	0.92	0.92	0.3	3	6

Learning Methods

- 1- Lectures for knowledge and intellectual skill outcomes.
- 2- Practical sessions to gain practical skills aided with the practical book.
- 3- Self directed learning (SDL) for the topics studied in lectures or related topics; including libraries, E-learning (practical photographs and questions of different topics available online for student's assessments) and consulting professors for gathering information.
- 4- Group discussions (GD).
- 5- Cases.
- 6- Tutorials.

Methods of Student Assessment

1. Formative:

This is used to monitor student's learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

It's given at least once in the form of quizzes that is made available for the students at the E-learning site at the end of the block.

Answers are presented instantly after the attempts and discussed on the students groups or in person with the teaching staff

Questions should be consistent with the level of the final exam. The student's attendance is a condition for entering the summative exams. The electronic or paper achievement file must be used to follow up on the students' evaluation, and its completion is a condition for entering the final exams

2. Summative

It is used to evaluate student's achievements at the end of an instructional unit. The grades tell whether the student achieved the learning goal or not.

The student's performance will be assessed according to the following:

Assessment task	Type of assessment	Proportion of total assessment	
		%	Marks
End block exam	MCQ	20%	18 marks
Portfolio		10%	9 marks
Final written exam	MCQ (50%), short answer questions and modified essay questions	40%	36 marks
Practical		30%	27 marks
Total		100%	90 marks

Block evaluation

- Students' results
- Students' feedback
- Tutors' feedback

Block Contents

Lecture Topics and Their Intended Learning Outcomes

No.	Contact Hours	Week No.	Lectures Titles	ILOs
1.	1h	1 st	Introduction to Pharmacology	(A1-A4), B1
2.	1h	1 st	Drug receptors, signaling mechanisms and drug action	A5-A16
3.	1h	1 st	Receptor Regulation and Variation in Drug Responsiveness	A5-A16
4.	1h	1 st	Adverse drug reaction	A16
5.	1h	1 st	Pharmacokinetics 1 (Absorption & distribution)	A17-A32
6.	1h	1 st	Pharmacokinetics 2 (Metabolism & excretion)	A17-A32

7.	1h	1 st	Pharmacokinetics variables 1	(A45-A46), B4, B6, B7
8.	1h	1 st	Pharmacokinetics variables 2	(A45-A46), B4, B6, B7
9.	1h	2 nd	Introduction to Autonomic Nervous System	(A47-A48)
10.	1h	2 nd	Parasympathetic nervous system (Agonists) 1	(A49-A52), (B4-B7)
11.	1h	2 nd	Parasympathetic nervous system (Agonists) 2	(A49-A52), (B4-B7)
12.	1h	2 nd	Parasympathetic nervous system (Antagonists)	(A53-A56), (B4-B7)
13.	1h	2 nd	Sympathetic nervous system (agonists) 1	(A57-A60), (B4-B7)
14.	1h	2 nd	Sympathetic nervous system (agonists) 2	(A57-A60), (B4-B7)
15.	1h	2 nd	Sympathetic nervous system (antagonists) 1	(A61-A64), (B4-B7)
16	1h	2 nd	Sympathetic nervous system (antagonists) 2	(A61-A64), (B4-B7)

17	1h	3 rd	Autacoids 1	(A65-A68), (B4-B7)
18	1h	3 rd	Autacoids 2	(A65-A68), (B4-B7)
19.	1h	3 rd	Autacoids 3	(A65-A68), (B4-B7)
20.	1h	3 rd	Introduction to Antimicrobial therapy	(A69-A70), (B4-B7)
21	1h	3 rd	Antimicrobial therapy 1	(A71-A72), (B4-B7)
22.	1h	3 rd	Antimicrobial therapy 2	(A71-A72), (B4-B7)
23	1h	3 rd	Commonly used Antiviral – antihelmentics – antiprotozoal1	(A72), (B4-B7)
24	1h	3 rd	Commonly used Antiviral – antihelmentics – antiprotozoal 2	(A72), (B4-B7)
25	1h	4 th	Anticancer &Immunomodulator 1	(A73-A74), (B4-B7)
26	1h	4 th	Anticancer &Immunomodulator 2	(A73-A74), (B4-B7)
	26 hrs		Total	

Practical Topics and Their Intended Learning Outcomes

No.	hrs	wks	Practical Topic	ILOs
1.	2hrs	1 st	<i>Drug dosage forms</i>	B4, B5, C5, C6, D1
2.	2hrs	1 st	<i>Routes of drug administration</i>	B4, B5, C5, C6, D1
3.	2hrs	1 st	<i>Liver microsomal enzyme system</i>	B4, B5,
				C5, C6, D1
4.	2hrs	1 st	<i>Dose-response curve</i>	B4, B5, C5, C6, D1
5.	2 hrs	2 nd	<i>Effect of autonomic drugs on the eye</i>	B4, B7, C5, C6,
				D1
6.	2hrs	2 nd	<i>Glaucoma case</i>	B4, B5, C5, C6, D1
7.	2hrs	2 nd	<i>Agonist-antagonist (computer) Part I</i>	C5, C6, D6
8.	2hrs	2 nd	<i>Agonist-antagonist (computer) Part II</i>	C5, C6, D6
9.	2hrs	3 rd	<i>Cardiolab (computer) Part I</i>	C5, C6, D6
10.	2hrs	3 rd	<i>Cardiolab (computer) Part II</i>	C5, C6, D6
11.	2hrs	3 rd	<i>Organophosphorous poisoning (case)</i>	B4, B5, C5, C6, D1
12.	2hrs	3 rd	<i>Myasthenia gravis (case)</i>	B4, B5, C5, C6, D1

13.	2hrs	4 th	<i>Prescription writing</i>	B4, B5, C5, C6, D1
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14.	2hrs	4 th	<i>Medical samples</i>	B4, B5, C5, C6, D1
		4 th	Revisions and Exam	
	28 hrs		Total	

Self- Directed Learning, Group Discussion and Cases Topics

No.	hrs	Week	Topics	ILOs
1.	2hrs	1 st	<i>Drug dosage forms.</i>	A17, A33, (B4-B7), (D1-D6)
2.	2hrs	1 st	<i>Routes of drug administration.</i>	A17, A33, (B4-B7), (D1-D6)
3.	2hrs	1 st	<i>Drug receptors 1</i>	(A19-A21), B4, B6, B7, (D1-
				D6)

4.	2hrs	1 st	<i>Drug receptors 2</i>	(A19-A21), B4, B6, B7, (D1- D6)
5.	2 hrs	1 st	<i>Variations in drug response</i>	(A22-A24), B4, B6, B7, (D1-D6)
6.	2hrs	1 st	<i>Drugs Affecting Renal Excretory Function</i>	A43, A44, (B4-B7), (D1-D6)
7.	2hrs	2 nd	<i>Drug-Drug interaction</i>	A25, (A33- A44), (B4-B7), (D1-D6)
8.	2hrs	2 nd	<i>Autacoids 1</i>	A25, A33- A44), (B4-B7), (D1-D6)
9.	2hrs	2 nd	<i>Autacoids 2</i>	(A65-A68), (B4-B7), (D1-D6)
10.	2hrs	2 nd	<i>Antimicrobial therapy</i>	(A71-A72), (B4-B7), (D1-D6)
11.	2hrs	3 rd	<i>Antimicrobial therapy (case)</i>	(A71-A72), (B4-B7), (D1-D6)
12.	2hrs	3 rd	<i>Commonly used Antiviral – antihelmentics – antiprotozoal</i>	A72, (B4- B7), (D1- D6)
13.	2hrs	3 rd	<i>Anticancer & Immunomodulator therapy</i>	(A73-A74), (B4-B7), (D1-D6)
14.	2hrs	3 rd	<i>Drug prescription</i>	(A75-A76), (B4-B7), (D1-D6)
		4th	Revisions and Exam	
	28hrs		Total	

Formative assessment

This is used to monitor student's learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

It's given at least once in the form of quizzes that is made available for the students at the E-learning site at the end of the block.

Answers are presented instantly after the attempts and discussed on the students groups or in person with the teaching staff

Questions should be consistent with the level of the final exam. The student's attendance is a condition for entering the summative exams. The electronic or paper achievement file must be used to follow up on the students' evaluation, and its completion is a condition for entering the final exams

Blueprint of the block

No.	List of Topics	ILOs	Contact Hours	Weight	Total marks	End of the block	Final exam 50% MCQ/ 50% مقالی
Lectures							
1.	Introduction to Pharmacology	(A15-A18), B4	1	1%	2	1	1
2.	Pharmacodynamics	(A19-A30), (B4-B7), (D1-D6)	3	6%	8	4	4
3.	Pharmacokinetics	(A31-A46), (B4-B7)	4	8%	10	5	5
4.	Introduction to Autonomic Nervous System	(A47-A48)	1	2%	3	1	2
5.	Parasympathetic nervous system (Agonists and antagonists)	(A49-A56), (B4-B7)	3	6%	7	3	4
6.	Sympathetic nervous system (agonists and antagonists)	(A57-A64), (B4-B7)	4	8%	9	4	5
14.	Autacoids	(A65-A68), (B4-B7)	3	6%	7		7
16.	Antimicrobialtherapy	(A69-A72), (B4-B7)	3	6%	4		4
18.	Commonly used Antiviral – Antihelmentics – Antiprotozoal	(A72), (B4-B7)	2	3%	2		2
20.	Anticancer &Immunomodulator	(A73-A74), (B4-B7)	2	4%	2		2
	Total		26 h	100%	90 marks	20% 18 marks	40% 36 Marks

	List of Topics	ILOs	Contact Hours	Weight	Marks of Final practical exam
Practical					
1.	Pharmacokinetics	B4, B5, C5, C6, D1	6	10%	5
2.	<i>Dose-response curve</i>	B4, B5, C5, C6, D1	2	4%	2
3.	Effect of autonomic drugs on the eye	B4, B7, C5, C6, D1	2	4%	2
4.	Glaucoma case	B4, B5, C5, C6, D1	2	3%	2
8.	Agonist-antagonist (computer)	C5, C6, D6	4	7%	3
9.	Cardiolab (computer)	C5, C6, D6	4	7%	3
10.	Organophosphorous poisoning(case)	B4, B5, C5, C6, D1	2	4%	3
11.	Myasthenia gravis(case)	B4, B5, C5, C6, D1	2	4%	3
12.	Prescription writing	B4, B5, C5, C6, D1	2	3%	1
13.	Medical samples	B4, B5, C5, C6, D1	2	4%	3
14.	Total		28 Hours	100%	27

دور ثاني

Exam	Final(60%)	Practical(40%)	Total
Pop-127	54	36	90
Total	54	36	90

Study Resources

1. Lecture notes

2. Books:

➤ Pharmacology

1. Essential books (Text books): **Basic and Clinical Pharmacology edited by. Bertram G. Katzung , 14th edition 2018**
2. General references, journals, periodicals, newspapers, web sites, which enrich the learning process as:
 - Alta Vista Search <http://www.altavista.com/>
 - Google <http://www.google.com/>
 - Medline - Free from National Library of Medicine (US) <http://www.ncbi.nlm.nih.gov/Pubmed>
 - The references that should be identified in the above items should be written in a standard way (publisher, edition, year, author(s)...etc)

Outlines of the Lectures

Lectures (1): Introduction to Pharmacology

By the end of the lecture the student will be able to :

- Define pharmacological terms such as:
 - Pharmacology branches ,
 - Drug, poison ,
 - Pharmacodynamics
 - Pharmacokinetics,
- List the sources of drug
- Mention how to apply basic principles in selected examples of drug use ,
- State the Importance of Pharmacopeias

Lectures (2): Drug receptors, signaling mechanisms and drug action

By the end of the lecture the student will be able to:

- Understand types of drug-receptor interactions
- Know receptor-effector coupling & spare receptors
- Understand signaling mechanisms & drug action

Lectures (3): Receptor Regulation and Variation in Drug Responsiveness

By the end of the lecture the student will be able to :

- Describe types of antagonism
- Know types of receptor regulation and its clinical significance
- Describe mechanisms contributes greatly to variability in response.

Lectures (4): Adverse drug reaction

By the end of the lecture the student will be able to:

- Define adverse drug reaction
- Differentiate between side/ untoward & toxic effects
- List the different types of adverse effects
- Define tolerance & describe its types
- Define hypersensitivity and explain its types
- Describe the various systemic adverse effects

Lecture (5): Pharmacokinetics (Absorption & distribution)

By the end of the lecture the student will be able to:

- Explain what is meant by the terms drug absorption & distribution .
- Explain the drug properties facilitate absorption .
- Describe factors affecting the absorption of drugs
- Discuss protein binding and the effect of concomitant administration of two protein-binding drugs on drug effect .
- Discuss the impact of drug distribution and redistribution on drug action

Lectures (6): Pharmacokinetics (Metabolism & excretion)

By the end of the lecture the student will be able to:

- Explain what is meant by the term drug metabolism .
- List the major mechanisms responsible for drug metabolism .
- Describe the major enzyme systems in the body that are responsible for oxidation, reduction and/or hydrolysis of selective pharmacological agents .
- Describe the basic principles of how drug metabolism alters drug action .
- Explain how drugs are chemically altered by cytochrome p-450 . .
- Discuss the difference between acute and chronic drug treatment with respect to drug metabolism by the liver .
- Explain how drug-induced enzyme induction and inhibition can alter responses to drugs with examples.
- Explain the basic principles by which drugs are excreted from the body
- Describe different routes of drug elimination with drug examples

Lectures (7): Pharmacokinetic variables

By the end of the lecture the student will be able to:

- Define Pharmacokinetics variables
- Mention significance of volume of distribution and bioavailability

Lecture (8): Pharmacokinetics variables 2

By the end of the lecture the student will be able to:

- Mention significance of clearance, half-life
- Mention therapeutic drug monitoring (TDM) and its significance.

Lectures (9): Introduction to Autonomic Nervous System

By the end of the lecture the student will be able to:

- Define cholinergic and adrenergic transmission.
- Mention types of cholinergic and adrenergic receptors.

Lectures (10): Parasympathetic nervous system (Agonists) 1

By the end of the lecture the student will be able to:

- Define cholinergic agents.
- Study pharmacological effects of cholinergic agents

Lectures (11): Parasympathetic nervous system (Agonists) 2

By the end of the lecture the student will be able to:

- Mention classification of cholinergic agonists
- Study therapeutic uses and identify side effects and contraindications of cholinergic agents

Lecture (12): Parasympathetic nervous system (Antagonists)

By the end of the lecture the student will be able to:

- Define anticholinergic agents
- Study pharmacological effects of anticholinergic agents
- Mention classification of anticholinergic agents
- Study therapeutic uses and identify side effects and contraindications of anticholinergic agents.

Lecture (13): Sympathetic nervous system (agonists) 1

By the end of the lecture the student will be able to:

- Define sympathomimetics.
- Study pharmacological effects of sympathomimetics agents

Lecture (14): Sympathetic nervous system (agonists) 2

By the end of the lecture the student will be able to

- Mention classification of sympathomimetics agents
- Study therapeutic uses and identify side effects and contraindications of sympathomimetics agents

Lecture (15): Sympathetic nervous system (antagonists) 1

By the end of the lecture the student will be able to

- Define sympatholytic.
- Study pharmacological effects of sympatholytic agents

Lecture (16): Sympathetic nervous system (antagonists) 2

By the end of the lecture the student will be able to

- Mention classification of sympatholytic agents
- Study therapeutic uses and identify side effects and contraindications of sympatholytic agents.

Lecture (17): Autacoids 1

By the end of the lecture the student will be able to

- Define autacoids.
- Mention classification of autacoids
- Study therapeutic uses and identify side effects and contraindications of histamine and serotonin and their antagonists.

Lecture (18): Autacoids 2

By the end of the lecture the student will be able to

- Study drugs acting on the Renin-Angiotensin system

Lecture (19): Autacoids 3

By the end of the lecture the student will be able to

- List therapeutic uses and identify side effects and contraindications of Eicosanoids and their antagonists.

Lecture (20): Introduction to Antimicrobial therapy

By the end of the lecture the student will be able to

- Describe the mechanisms of action and combination of anti-microbial agents.
- Mention causes of failure of use of anti-microbial agents.

Lecture (21): Antimicrobial therapy 1

By the end of the lecture the student will be able to

- Outline members and the adverse effects of antimicrobial therapy.

Lecture (22): Antimicrobial therapy 2

By the end of the lecture the student will be able to

- Outline members and the adverse effects of antimicrobial therapy

Lecture (23): Commonly used Antiviral – antihelmentics – antiprotozoal and anti fungal 1

By the end of the lecture the student will be able to

- Outline members and the adverse effects of Antiviral – antihelmentics –antiprotozoal

Lecture (24): Commonly used Antiviral – antihelmentics – antiprotozoal and anti fungal 2

By the end of the lecture the student will be able to

- Outline members and the adverse effects of Antiviral – antihelmentics –antiprotozoal

- Define malignant epithelial tumors

By the end of the lecture the student will be able to

- Define squamous cells carcinoma and describe its gross and microscopic features
- Define Transitional cell carcinoma, enumerate its sites of development, and describe its gross and microscopic features
- Define the term glandular carcinoma and mention its types and describe their pathological picture.

Lecture (25): Anticancer & Immunomodulator 1

By the end of the lecture the student will be able to

- List anticancer chemotherapy- immunomodulator and describe their mechanism of action
- Mention examples of different anticancer groups
- List anticancer chemotherapy- immunomodulator and describe their

By the end of the lecture the student will be able to

mechanism of action

- Mention examples of different anticancer groups

Outlines of Topics for Group Discussion, Self -directed Learning and Cases

Topic (1): Drug dosage forms.

ILOs:
ILOs:

- Define different drug dosages forms
- Classify drug dosages forms
- List Drug Delivery Systems

Topic (2): Routes of drug administration.

ILOs :

- Classify routes of drug administration
- Mention advantages and disadvantages of different routes of drug administration

Topic (3): Drug receptors

ILOs:

- List mechanism of drug effects
- Describe signaling mechanisms & drug action

Topic (4): Drug receptors

ILOs:

- List types of antagonism
- List types of receptor regulation and its clinical significance

Topic (5): Variations in drug response

ILOs:

- Describe mechanisms contribute greatly to variation in responses.
- Identify significance of variation in drug responses

Topic (6): Drugs Affecting Renal Excretory Function

ILOs:

- list different route of drugs excretion
- Mention mechanisms of renal excretion
- Mention examples of drugs affect renal excretion.

Topic (7): Drug Drug interaction

ILOs:

- Mention types of drug drug interaction
- Mention examples of drug drug interaction

Topic (8): Autacoids

ILOs:

- Define Autacoids
- Mention classification of autacoids
- List pharmacological effects of autacoids
- List therapeutic uses and identify side effects and contraindications of autacoids and their antagonists.

Topic (9): Autacoids

ILOs:

- Define Autacoids
- Mention classification of autacoids
- List pharmacological effects of autacoids
- List therapeutic uses and identify side effects and contraindications of autacoids and their antagonists.

Topic (10): Antimicrobial therapy

ILOs:

- Describe the mechanisms of action and combination of anti-microbial agents.
- Outline members and the adverse effects of antimicrobial therapy

Topic (11): Antimicrobial therapy (case)

ILOs:

- Describe the mechanisms of action and combination of anti-microbial agents.
- Outline members and the adverse effects of antimicrobial therapy

Topic (12): Commonly used Antiviral – antihelmentics – antiprotozoal

ILOs:

- Outline members and the adverse effects of antiviral - antihelmentics - antiprotozoal

Topic (13): Anticancer &Immunomodulator

ILOs:

- List of anticancer chemotherapy- immunomodulator and describe their mechanism of action.

Topic (14): Drug prescription

Topic (12): Commonly used Antiviral – antihelmentics – antiprotozoal

IL

- Outline items of prescription**
- Give examples of prescription

Block timetable (Weeks 1-4)

POP-107(Pharma)

يبدأ تدريس البلوك المحاضرات من بداية الترم يوم الاربعاء الموافق 12 فبراير 2025 بنظام البلوكات الممتدة حيث تم تخصيص يوم الاربعاء من كل اسبوع للبلوك وتنتهي يوم 12 مايو 2025.

عدد المحاضرات الفارما 25 محاضرة.

عدد السكاشن 7 سكاشن (ساعتين)

تبدأ السكاشن 12 مايو وتنتهي يوم 20 مايو 2025.

Practical (1) Drug dosage forms (Pharma) GIII الفصل التفاعلية	Practical (1) Drug dosage forms (Pharma) GII الفصل التفاعلية	Practical (1) Drug dosage forms (Pharma) GI الفصل التفاعلية	Lecture 27 (Pharma)	الاثنين 5-12
Practical (2) Routes of drug administration (Pharma) GIV الفصل التفاعلية	Practical (2) Routes of drug administration (Pharma) GI الفصل التفاعلية	Practical (2) Routes of drug administration (Pharma) GII الفصل التفاعلية	Practical (1) Drug dosage forms (Pharma) GIV الفصل التفاعلية	الثلاثاء 5-13
Practical (3) Liver microsomal enzymes and dose response curve_ (Pharma) GIII أكاديمي 1	Practical (3) Liver microsomal enzymes and dose response curve_ (Pharma) GII أكاديمي 1	Practical (3) Liver microsomal enzymes and dose response curve_ (Pharma) GI أكاديمي 1	Practical (2) Routes of drug administration (Pharma) GIII أكاديمي 1	الاربعاء 5-14 POP- 107

Practical (4) - Effect of autonomic drugs on the eye – Glaucoma case (Pharma) GIII الفصل التفاعلية	Practical (4) - Effect of autonomic drugs on the eye – Glaucoma case (Pharma) GI الفصل التفاعلية	Practical (4) - Effect of autonomic drugs on the eye – Glaucoma case (Pharma) GII الفصل التفاعلية	Practical (3) Liver microsomal enzymes and dose response curve_ (Pharma) GIV الفصل التفاعلية	الخميس
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15 th week							
03:04	02:03	01:02	12:01	11:12	10:11	09:10	08:09
Practical (5) Agonist- antagonist and myasthenia gravis case (Pharma) GIV الفصول التفاعلية	Practical (5) Agonist- antagonist and myasthenia gravis case (Pharma) GII الفصول التفاعلية	Practical (5) Agonist- antagonist and myasthenia gravis case (Pharma) GI الفصول التفاعلية	Practical (4) - Effect of autonomic drugs on the eye – Glaucoma case (Pharma) GIV الفصول التفاعلية	السبت 5-17			
Practical (6) Cardiolab and organophosphorus poisoning case (Pharma) GIII معامل مزرعية لور 201	Practical (6) Cardiolab and organophosphorus poisoning case (Pharma) GII معامل مزرعية لور 201	Practical (6) Cardiolab and organophosphorus poisoning case (Pharma) GI أكاديمي 1	Practical (5) Agonist- antagonist and myasthenia gravis case (Pharma) GIII أكاديمي 1	الأحد 5-18			
	Practical (7) Prescription writing and revision (Pharma)	Practical (7) Prescription writing and revision (Pharma)	Practical (6)	الاثنين 5-19			

	GII الفصول التفاعلية	GI الفصول التفاعلية	Cardiolab and organophosphorus poisoning case (Pharma) GIV الفصول التفاعلية	الثلاثاء 5-20
	Practical (7) Prescription writing and revision (Pharma) GIII الفصول التفاعلية	Practical (7) Prescription writing and revision (Pharma) GIV الفصول التفاعلية		