

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE-PILANI, HYDERABAD CAMPUS

SECOND SEMESTER 2023-2024

Course Handout

Date: 09/01/2024

In addition to Part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : PHA F341
Course Title : Pharmacology and Toxicology (Part-2)
Instructor in charge : Onkar Kulkarni
Team of Instructors : Ashutosh Mahale, Lavanya S

Scope & Objective of the Course:

This course will make students understand the pharmacology of important classes of drugs including their mechanism of action, therapeutic uses, side effects, toxic manifestations, indications and contraindications. This course is intended to impart the knowledge regarding the concepts of actions of drugs on various systems of the human body as well as to understand the effect of cellular process like metabolism, elimination and cellular permeability on the fate of the drug molecule inside the human body. The course covers mechanism of action, therapeutic uses, side effects, and contraindications of the drugs, which are commonly employed in therapeutics. The course also intends to make aware the students the recent happenings in the field of molecular Pharmacology, various screening techniques and novel treatments in the field of therapeutics.

Learning Outcomes (course benefits): Students who have undergone the course are expected to

- Understand the molecular pharmacology of drugs used for the treatment of various diseases
- Understand the rationale behind the side effects associated drug molecules
- Explain the rationale behind the observed drug interactions

1) Text book:

1. Tripathi KD, Essentials of Medical Pharmacology, Sixth edition, Jaypee brothers, New Delhi, 2008

Reference Books:

1. Katzung BG, Basic and Clinical Pharmacology, 12th edition, Prentice Hall, London, 2001

2. Goodman & Gilman's The Pharmacological Basis of Therapeutics, by JG Hardman (Editor), 10th edition, McGraw-Hill Publishing Co, 2001.

2) Course Plan:

Lect. No.	Learning Objectives	Topics to be covered	References
1-5	1. To understand the role of small molecular mediators in the progression of inflammation, pain and fever 2. To understand the mechanism of drugs acting as anti-inflammatory, anti-rheumatic, anti-pyretic and analgesic	Non-steroidal anti-inflammatory drugs and anti-pyretic-analgesic, histamine and anti-histaminics	T1-Sec3, R1-Sec6, R2-Sec4
		Anti-gout, anti-rheumatoid drugs	
		Drugs for bronchial asthma, COPD	
6-7	To understand the mechanism of drugs used for the treatment of peptic ulcer	Anti-ulcer drugs	T1-Sec11
8-14	To understand the mechanism, side effects, drug interactions and therapeutic uses of drug molecules targeting cardiovascular system	Anti-angina agents	T1-Sec2, R1-Sec3, R2-Sec3
		Anti-hypertensive and drugs acting on renin angiotensin system, Diuretics	
		Cardiac glycosides and treatment for CHF	

15-18	To understand the mechanism, side effects, drug interactions and therapeutic uses of drug molecules targeting Hyperglycemia and Hyperlipidemia	Anti-diabetic and Hypolipidaemic Drugs	T1-Sec5,10, R1-Sec7, R2-Sec3,5
19-24	To understand the mechanism, side effects, drug interactions and therapeutic uses of drug molecules targeting infectious diseases	Concepts of chemotherapy and Classification of chemotherapeutic drugs	T1-Sec12, R1-Sec8, R2-Sec7
		Sulfonamides, Penicillin derivatives	
		Aminoglycosides, Macrolide glycosides	
		Anti-fungal	
		Anti-viral	
25-26	To understand the mechanism, side effects, drug interactions and therapeutic uses of drug molecules targeting cancer	Anti-cancer drugs	T1-Sec13, R1-Sec8, R2-Sec8

Particulars of Experiments	No of Practical Sessions
<ul style="list-style-type: none"> Understanding the protocol and theory of pharmacological assays using animal simulator software and JOVE demonstration videos 	12

3) Evaluation Scheme:

Pre Mid-term Quiz	15 mins	7 %	Surprise quiz (CB)	
Mid-term Test	90 mins	30 %	As announced in the timetable (50%OB if	16/03 - 4.00 - 5.30PM

			conducted offline/ 100%OB if conducted online or hybrid mode)	
Post Mid-term Quiz	15 mins	8 %	Surprise quiz (CB)	
Compre. Exam.	180 min	40 %	As announced in the timetable (50%OB if conducted offline/ 100%OB if conducted online or hybrid mode)	20/05 AN
Day to day work (Includes marks for Attendance, Lab Record & Viva-voce) and lab compre	-	15 %	Lab Compre dates will be announced in the class (CB if conducted offline/OB if conducted online or hybrid mode)	

5) Mid-Semester Grading: Will be announced after Mid-term test.

6) Make-up: Prior approval or intimation to take a make-up is mandatory. It is solely at the discretion of the instructor-in-charge, depending upon the genuineness of the circumstances, to allow or disallow a student to appear for a make-up evaluation component. No makeup will be granted for Assignments/Quizzes under any circumstances.

7) Grading Procedure:

- Grading will be done by “bunching” procedure. Total marks obtained by the students will be arranged in descending order, ‘bunches’ will be identified and grades awarded accordingly. Fine grading system (A, A-, B, B-....) will be followed.
- It is not mandatory for the instructor-in-charge to award all the grades (A to E); subjective judgment will be used for awarding the grades.
- As specified in Handout – Part I, appended to the timetable, the instructor in-charge reserves the right to award a NC report in case the student does not make himself/ herself available for any of the evaluation component mentioned above.
- Borderline cases during grading will be judged on the basis of regularity to classes and consistency or progress in the performance in evaluation components.

8) Chamber Consultation Hours: To be announced in class.

9) Notices: All the notices pertaining to this course will be displayed only on Dept. of Pharmacy Notice Board.

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor-in-charge

PHAF341