## **Lecture Plan**

Name of the college: Government College of Arts, Science	& Commerce, Sanquelim, Goa				
Name of Faculty: Dr. Dipesh Sakharam Harmalkar	Subject: Pharmaceutical Chemi	stry			
Paper code: CHC-205	Program/Course: S.Y.BSc.	Division:			
Academic year: 2024 - 2025	Semester: IV	Total Lectures: 15			
Credits: 2					
Course Objectives:					
• To understand the terminologies in pharmaceutical cher	mistry.				
<ul> <li>To study the structures of selected drugs.</li> </ul>					
<ul> <li>To understand the IUPAC nomenclature of drugs.</li> </ul>					
• To predict the mechanism of action and SAR analysis of	drugs.				
Expected Course Outcome:					
At the end of the course students will be able to:					
CO1. Explain the terminologies in pharmaceutical chemistry.					
CO2. Write the structures of selected drugs.					
CO3. Write the mechanism of action of drugs.					
CO4. Present structure activity relationship analysis of drugs.					
Learning Outcome:					
At the end of the course students will be able to:					
1. define and explain key terminologies in pharmaceutical chemistry.					
2. demonstrate the ability to draw and identify the chemical structures of selected drugs.					
3. analyze and articulate the mechanisms of action of various drugs.					
4. evaluate and present structure-activity relationship (SAR) analyses to understand drug efficacy and design.					

Month	Lectures From	Lectures To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assig nment	ICT Tools	Referenc e books
Decemb er	09-12-2024	31-12-2024	01	1. Introduction to Pharmaceutical Chemistry: Why the need to study pharmaceutical chemistry? Importance of chemistry in pharmacy. Definitions of Pharmaceutical Chemistry, Pharmacophore, Pharmacognosy, Pharmacokinetics,		Smart board, Power point presentation, Google classroom.	[1-7]
January	01-01-2025	31-01-2025	04	1. Introduction to Pharmaceutical Chemistry: Pharmacophore, Pharmacognosy, Pharmacokinetics, Pharmacodynamics, Pharmacopoiea, Drug. Classifications of drugs based on their uses, definition, giving one example with structure: Anti infective agents: Antibacterial (Sulphaacetamide), Antifungal (Clotrimazole), Antiviral	ISA I: Assignment	Smart board, Power point presentation, Google classroom, Google quiz	[1-7]
Februar Y	01-02-2025	28-02-2025	04	1. Introduction to Pharmaceutical Chemistry: (Sulphaacetamide), Antifungal (Clotrimazole), Antiviral (Amantadine HCl), Anthelmintics (Mebendazole), Antiamoebic (Metronidaz ole), Antimalarial (Chloroquine), Antitubercular (Isoniazid), Antihypertensive (Methyl Dopa), Anticoagulant (Warfarin), Diuretics (Acetazolamide), Analgesic (Paracetamol), NSAIDs (Ibuprofen), Local Anaesthetic (Benzocaine), antibiotics (Chloramphenicol),	ISA II: Written test	Smart board, Power point presentation, Google classroom, Google quiz	[1-7]

	01-03-2025	05-03-2025	01	<b>1. Introduction to Pharmaceutical</b> <b>Chemistry:</b> (Chloramphenicol), C entral nervous depressant (phenobarbital), Anticonvulsant (Phenytoin).	ISA III: Quiz	Smart board, Power point presentation, Google classroom	[1-7]
March	05-03-2025	31-03-2025	03	<b>2. IUPAC names, Synthesis and uses of following drugs:</b> Synthesis of Aspirin, paracetamol, Ibuprofen, Sulphacetamide, Amantadine HCI, Clotrimazole,		Smart board, Power point presentation, Google classroom	[1-7]
April	01-04-2025	11-04-2025	02	<b>2. IUPAC names, Synthesis and uses of following drugs:</b> Amantadine HCl, Clotrimazole, Phenobarbital, Glyceryl trinitrate, Dapsone, metronidazole.		Smart board, Power point presentation, Google classroom	[1-7]

## **References:**

- 1. Patrick, G. L., Introduction to Medicinal Chemistry, 7 th edn., Oxford Readings, University Press, UK, 2023.
- 2. Singh, H. and Kapoor, V.K. Singh, H. and Kapoor, V.K. Medicinal and Pharmaceutical Chemistry, 3rd edn., Vallabh Prakashan, Pitampura, New Delhi, 2012 edn., Vallabh Prakashan, Pitampura, New Delhi, 2012.
- 3. Foye, W.O. Lemke, T.L. William, D.A., Foye, W.O. Lemke, T.L. William, D.A., Principles of Medicinal Chemistry, 7 th edn., B. I. Waverly Pvt. Ltd., New Delhi, 2012. edn.
- 4. Beale, J. H. and Blocks, J. H., Beale, J. H. and Blocks, J. H., Wilson and Gisvold's Textbook of Organic, Medicinal and Pharmaceutical Chemistry, 12th edn., Lippinkott Williams and Wilkins, Philadelphia, USA, 2011.
- 5. Lednicer, D. and Meischer, L.A., Organic Chemistry of Drug Synthesis Vol. I to III. John Wiley & Sons, New Jersey, USA, 2005.
- 6. Sriram, D. and Yogeshwari, P., Medicinal Chemistry 1st edn., Pearson Education, London, 2007.
- 7. Wolff, M. E., Medicinal Chemistry and Drug Discovery, 5th edn., edn. John Wiley & Sons, New Jersey, USA, 1997.

* Assessment Rubrics		
Component	Max Marks	
ISA	10	
Semester End Exam	40	