

St. Xavier's College (Autonomous), Ahmedabad-09

Syllabus of Semester – V of the following departments under Faculty of Science  
Based on Under Graduate Curriculum Framework - 2023 to be implemented  
From the Academic Year 2025-26.

**FACULTY OF SCIENCE**

**DEPARTMENT OF CHEMISTRY**

BSc. (Hons.) Chemistry  
Category – V

**Minor Course – 2: Pharmaceutical Chemistry**

*For Industrial Chemistry Students*

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course Title & Code	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite(s) of the Course (if any)
	Lecture	Tutorial	Practical / Practice		
<b>VICMN551C: Pharmaceutical Chemistry</b>	2	0	2	B.Sc.Sem-4	Basic terms related to pharmacopeia and pharmaceutical drug and its dosage

LEARNING OBJECTIVES (LO)	
LO-1	Define pharmacopeia and its significance in drug standardization. Explain the role of pharmacopeia in ensuring drug quality, purity, and safety.
LO-2	Analyse a given monograph to interpret drug specifications, tests, and standards. Differentiate drugs based on their chemical structure, therapeutic use, and mechanism of action.
LO-3	Explain the significance of drug classification in pharmaceutical sciences. Explain Dosage Forms and Their Importance

COURSE OUTCOMES (CO)	
On Completion of this course, the student will be able to	
CO-1	To learn fundamentals aspects of pharmacopeia and monograph of drugs. And classification of pharmaceutical drugs.
CO-2	To learn about Pharmaceutical dosage Forms.

#### Unit-1 PHARMACOPEIA AND MONOGRAPH AND CLASSIFICATION OF DRUGS (15L)

- (i) Pharmacopeia: Introduction of I.P., U.S.P., and B.P
- (ii) Monograph of drugs: Paracetamol, Trimethoprim, Bisacodyl, Sulphamethoxazole.
- (iii) Classification of pharmaceutical drug :  
Hypnotic and sedatives drug: General; Early hypnotics; Barbiturate derivatives; Non barbiturate compounds  
Antimicrobial drug: Mercurochrome, Isoniazid (INH), PAS  
Vitamins: Introduction and biological activity of Vit-A, Vit- B6, Vit-C

#### Unit-2 PHARMACEUTICAL DOSAGE FORMS (15L)

- Pharmaceutical Formulation
- Routes of administration: Introduction, Types & Usage.
- Pharmaceutical packaging: Introduction, Packaging material, ancillary materials, Packaging machinery, Packaging evaluation.

#### PRACTICALS

1. To estimate purity of Sulphamethoxazole in tablet as powder by Mohr's method.
2. To identify related substance present in Bisacodyl tablet by TLC.
3. To identify related substance present in sulfa drug tablet by TLC.
4. Preparation of paracetamol drug from p-amino phenol.
5. To determine the Sulphated Ash of paracetamol tablet.
6. To carry out assay value of given sample of NH<sub>4</sub>Cl used as mouth wash by Volhard Method.
7. To determine the % of vitamin- C in given sample.
8. To Prepare Aspirin drug from salicylic acid.
9. To carry out assay value of given sample of KMnO<sub>4</sub> used as Germicide and Antiseptic.
10. To determine the percentage of aspirin in the given sample.
11. To determine the % purity of Isoniazid (INH) as antituberculosis drug.
12. To estimate the amount of paracetamol on given sample by Spectrophotometer.

#### Suggestive Reading:

1. Pharmaceutical Chemistry by Ashutoshkar
2. Introduction to Medicinal Chemistry by Graham L. Patrick
3. Indian pharmacopeia/ USP/BP/EP