Course Title– **SEC :** Pharmaceutical Chemistry ***w.e.f. the session 2024-25 and onwards***	
Class: B.Sc. Pt.-III / Semester-V	Course code: BCH-S501
Lecture: 30	Credits: 02
MM: 70	Exam Hrs: 03

NOTE: The question paper shall consist of Two sections (Sec.-A and Sec.-B). Sec.-A shall contain 10 short answer (about 150 words) type questions of SIX marks each and student shall be required to attempt any five questions. Sec.-B shall contain 08 descriptive type questions of TEN marks each and student shall be required to attempt any four questions. Both sections shall have questions from the entire syllabus. The previous year paper/model paper can be used as a guideline and the following syllabus should be strictly followed while setting the question paper.

Course Contents:

Drugs & Pharmaceuticals

Drug discovery, design and development; Synthesis of the representative drugs of the following classes: analgesics agents, antipyretic agents, anti-inflammatory agents (Aspirin, paracetamol, lbuprofen); antibiotics (Chloramphenicol); antibacterial and antifungal agents (Sulphonamides and Sulphamethoxazol); Central Nervous System agents (Phenobarbital, Diazepam),Cardiovascular (Glyceryl trinitrate), antilaprosy (Dapsone).

Fermentation

Aerobic and anaerobic fermentation. Production of (i) Ethyl alcohol and citric acid, (ii) Antibiotics; Penicillin (iii) Lysine, Glutamic acid and Vitamin C.

Practicals

1. Preparation of Aspirin and its analysis.
2. Preparation of magnesium bisilicate (Antacid).

Reference Books:

1. G.L. Patrick: Introduction to *Medicinal Chemistry, Oxford University* Press, UK.
2. Hakishan, V.K. Kapoor: *Medicinal and Pharmaceutical Chemistry,* Vallabh
    a. Prakashan, Pitampura, New Delhi.
3. William O. Foye, Thomas L., Lemke , David A. William: *Principles of Medicinal Chemistry*, B.I. Waverly Pvt. Ltd. New Delhi.

Course Objectives

1. To understand different types of drugs and the concept of design and development of drugs.
2. To be familiar with fermentation, synthesis and analysis of some important drugs and pharmaceuticals.

Course Outcomes (Cos)

After the completion of this course, a student should be able to:

CO:1 Understand concept of design and development of drugs.

CO:2 Explain the various common classes of Drugs like analgesic, antipyretic, antibiotic, antifungal and antilaprotic etc.

CO:3 Have an idea of synthesis of analgesic, antipyretic, antibiotic, CNS agents, antifungal and antilaprotic etc.

CO:4 Understand the fermentation, production of industrially and medicinally important ethanol, citric acid, lysine, glutamic acid and vitamin C etc.

CO:5 Have an idea of application of some common drugs like aspirin, paracetamol, ibuprofen, diazepam, chloramphenicol and dapsone etc.

CO:6 Experiment synthesis of aspirin and its analysis.

Course Outcomes (Cos) / Program Outcomes (Pos)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
CO:1		×		×				×
CO:2	×	×					×	
CO:3		×	×					×
CO:4		×						×
CO:5		×		×				
CO:6			×					×