Books: -

S.No.	Name of Books/ Author/Publisher
1	Voet D. and Voet G., "Biochemistry", Third Edn. John Wiley and Sons,
2	Medical Physics by J.R.Cameron and J.G.Skofronide ().
3	Lehninger Principles of Biochemistry by David . L. Nelson, Micheal . M. Cox, Fourth Edition, Macmillan Worth publishers.

PHARMACEUTICAL SCIENCES

Details of course :-

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Pharmaceutical sciences (BT416)	03	01	00	Nil

Course Objective:

This course aims to provide students with a comprehensive understanding of drug discovery, development, and regulation. It covers the principles of pharmacology, medicinal chemistry, and pharmacokinetics, emphasizing the design, analysis, and clinical application of pharmaceuticals. Students will gain knowledge in drug formulation, delivery systems, and the role of biotechnology in modern medicine, preparing them for careers in research, development, and regulatory affairs in the pharmaceutical industry.

Course Outcome (CO):

1 Infer the classification and nomenclature of organic pharmaceutical compounds and their different types of effects like steric, inductive and mesomeric effect

2 Compare physiochemical properties of drugs in relation to biological, its effect an drug receptor interaction

3 Know the basics of drug metabolism and its various topics like Oxidative Reductive, Hydrolytic and Conjugative

4 Define toxicity, tolerance, dependence, addiction, interaction and reaction of drug with various factors like diseases and food

5 Perfrom survey of various drug classes like Anesthetics, Analgesics, Neurotransmitters CNS depressants, CNS stimulants, Antibiotics and Steroids.

S.No.	Content	Contact Hours

1.	**Introduction to and History of Pharmaceutical Chemistry:** Classification and nomenclature of organic pharmaceutical compounds; Hyperconjugation, steric effects inductive effect and mesomeric effect.	**8**
2.	**Physicochemical Properties in Relation to Biological Action:** Effects of route of administration, Drug-receptor interactions, Steric features of drugs, The drug receptor, Structure-Activity Relationships	**8**
3.	**Drug Metabolism:** Oxidative Reductive, Hydrolytic, Conjugative	**9**
4.	**Drug Toxicity, Tolerance, Dependence, Addiction:** adverse drug reactions; Drug overdose; Drug-induced liver injury, Drug-drug interactions, Drug-disease interactions, Drug-food interactions; Intolerance to multiple drugs; Physical dependence, Psychological dependence, Cross dependence; Drug receptors; Learning, conditioning, and relapse.	**9**
5.	**Survey of Various Drug Classes:** Anesthetics (general, local), Analgesics, Neurotransmitters (adrenergic, cholinergic effects; psychopharmacology), CNS depressants (sedative/hypnotic, major/minor tranquilizers), CNS stimulants, Antibiotics (especially b-lactam), Steroids. Natural Products as Medicinal Compounds	**8**
Total		**42**

Books: -

S.No.	**Name of Books/ Author/Publisher**
1	Medicinal Chemistry: An introduction by G. Thomas. Publisher: John Wiley and Sons Medicinal Chemistry: The Role of Organic Chemistry in Drug
2	Research by C. R. Ganellin and S. M. Roberts. Publisher: Academic Press
3	Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems by H.C. Ansel, L. V Allien, N.G. Popovich. Publisher: Lippincott Williams and Wilkins Publishers.
4	Review of Organic Functional Groups: Introduction toMedicinal Organic Chemistry by TL. Lemke. Publisher: Lippincott Williams & Wilkins, 4th edition