PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY, PANIPAT
DEPARTMENT OF PHARMACY
Course: B.Pharmacy

LESSON PLAN

Faculty Name: Ms. Garima Mittal **Subject: Pharmacology-I**
Class: B. Pharmacy – IVth Sem. **Subject Code: BP-404 T**

Scope:
This course imparts knowledge to understand what drugs do to the living organisms and how their effects can be applied to therapeutics. The subject covers the information about the drugs like, mechanism of action, physiological and biochemical effects (pharmacodynamics) as well as absorption, distribution, metabolism and excretion (pharmacokinetics) along with the adverse effects, clinical uses, interactions, doses, contraindications and routes of administration of different classes of drugs.

Course Objectives:
This course will discuss the following aspects:
1. Basic understanding of pharmacology and its scope with all the terminology
2. ADRs and Drug Discovery of a new drug molecule.
3. Molecular understanding of receptors responsible for particular action of the drug.
4. Classification and mechanism of action of the drugs acting on PNS and CNS.

Course Outcomes:
Upon completion of this course the student should be able to
1. Understand the pharmacological actions of different categories of drugs
2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.
3. Apply the basic pharmacological knowledge in the prevention/treatment of various diseases.
4. Observe the effect of drugs on animals by simulated experiments
5. Appreciate correlation of pharmacology with other bio medical sciences

Number of Lectures: 45 **Each Lect. Time**: 01 hour

Lecture No.	Particular	Remark/Date
UNIT-1:- General Pharmacology (8 hrs.)		
1.	Introduction to Pharmacology- Definition, historical landmarks and scope of pharmacology	
2.	Introduction to Pharmacology- nature and source of drugs, essential drugs concept and routes of drug administration	
3.	Introduction to Pharmacology- Agonists, Antagonists (competitive and non competitive), spare receptors, addiction.	
4.	Introduction to Pharmacology- Tolerance, dependence, Tachyphylaxis, idiosyncrasy, allergy	
5.	Pharmacokinetics-Absorption, Distribution	
6.	Pharmacokinetics-Metabolism, Excretion	
7.	Pharmacokinetics- Enzyme induction, enzyme inhibition	
8.	Pharmacokinetics- kinetics of elimination	
Module -2:- General Pharmacology (12 hrs)		
9.	Pharmacodynamic- Principles & mechanisms of drug action	
10.	Receptor theories and classification of receptors	
11.	Regulation of receptors, drug receptors interaction	
12.	signal transduction mechanisms	
13.	G-protein–coupled receptors	
14.	Ion channel receptor, Transmembrane enzyme linked receptors, Transmembrane JAK-STAT receptor	
15.	Receptors that regulate transcription factors	
16.	Dose Response Relationship, Therapeutic index	
17.	Combined effects of drugs and factors modifying drug action	
18.	Adverse drug reactions	
19.	Drug interactions (pharmacokinetic and pharmacodynamic)	
20.	Drug discovery and clinical evaluation of new drugs	
Module - 3:- Pharmacology of drugs acting on peripheral nervous system (10 hrs)		
21.	Organization and function of ANS	
22.	Neurohumoral, co-transmission & classification of NTs	
23.	Parasympathomimetics	
24.	Parasympatholytics	
25.	Sympathomimetics	
26.	Sympatholytics	
27.	Neuromuscular blocking agents and skeletal muscle relaxants	

28.	Local anesthetic agents	
29.	Drugs used in myasthenia gravis	
30.	Drugs used in glaucoma	
Module- 4:- Pharmacology of drugs acting on central nervous system (8hrs)		
31.	Neurohumoral transmission in the C.N.S.	
32.	Importance of various NTs like with GABA, Glutamate.	
33.	Importance of Glycine, serotonin, dopamine.	
34.	General anesthetics and pre-anesthetics**.**	
35.	Sedatives & Hypnotics	
36.	centrally acting muscle relaxants	
37.	Anti-epileptics	
38.	Alcohols and disulfiram	
Module-5:- Pharmacology of drugs acting on central nervous system (7 hrs)		
39.	Psychopharmacological agents: Antipsychotics	
40.	Antidepressants	
41.	Anti-anxiety agents	
42.	Anti-maniacs and hallucinogens	
43.	CNS stimulants and nootropics	
44.	Drugs used in Parkinson’s disease and Alzheimer’s disease	
45	Drug addiction, drug abuse, tolerance and dependence.	

Teacher in-charge **HOD** **Principal**