Course Curriculum

Course Title: Pharmacology-I		**Course Code:** BPH 224
Credit : 3	**Contact Hours:** 45 hours	**Total Marks:** 100

Rationale:

This subject deals with the concepts regarding pharmacology such as pharmacokinetics and pharmacodynamics of different classes of drugs as well as different types of receptors and pharmacotherapy.

Course Learning Outcomes:

- Describe the basic terms and concepts of pharmacology
- Outline the functions and structure of the pharmacological systems
- Apply the concept and principles of pharmacology to ensure proper use of drugs
- Calculate medication orders based on the given setting

Unit Learning Outcomes	Course Content	Teaching Strategy	Assessment Strategy
➢ Describe different terminology of Pharmacology ➢ Identify the sources of drugs ➢ Identify & recommend preferred routes for the drug administration ➢ Compose the role of genetics in drug action	**General principle:** Sources of drugs, routes of administration and pharmacogenetics.	Lecture Group discussion Case study	Short Answer Essay type Viva-voce Assignment Presentation
➢ Illustrates the factors responsible for ADME ➢ Modulate the factors for better outcome ➢ Categorize different types of metabolism and ways of excretion	**Introduction to pharmacokinetics:** Drug absorption, distribution, metabolism and excretion (ADME), factors modifying drug absorption, distribution, metabolism and excretion.	Lecture Group discussion Brainstorming Case Study	Short Answer Essay type Presentation Assignment

➢ Interpret the ligand-receptor interaction ➢ Identify the key regulatory molecules ➢ Discuss the relationship between drug dose & clinical response	**Introduction to pharmacodynamics:** Basic principles, mechanism of drug absorption, receptor (receptor for physiological regulatory molecules, structural and functional families, receptor as enzyme etc.), agonist, antagonist, potentiation, synergism, drug-receptor interaction, factors modifying drug action, drug tolerance, dependence etc. Basic concept of drug action, receptor, nature of receptor, drug antagonism, the relation between drug dose &clinical response. Signalling mechanism and drug action, ligand-gated channels, G-proteins and second messengers.	Lecture Group discussion Brainstorming	Short Answer Essay type Presentation Assignment
Calculate medication orders based on the analyzed situation	**Drugs for peptic ulcer:** antacid, H2 - receptor blockers, proton pump inhibitor, PG analogue, mucosal- protective agent, anti-Helicobacter pylori.	Lecture Brainstorming Case Study	Short Answer Assignment Viva-voce
➢ Compare & contrast between different types of autacoids ➢ Outline their release patterns ➢ Design drugs to inhibit inflammation	**Autacoids:** Amine, lipid & peptide autacoids.	Lecture Brainstorming Problem-based learning (PBL)	MCQ Essay type Presentation Assignment
➢ Differentiate the narcotic & non-narcotic medications ➢ Identify the drug dependence symptoms	**Analgesic, antipyretic and anti-inflammatory drugs:** Non-narcotic analgesic- salicylates, pyrazolone derivatives, para-aminophenole derivatives, propionic acid derivatives, indomethacin, sulindac, tolmetin, diclofenac; Narcotic analgesic -opium alkaloids,	Lecture Discussion Brainstorming	Short Answer MCQ Presentation Assignment

	morphine antagonist, synthetic & semisynthetic opiate.		
➢ Interpret the role of Sedative & hypnotic drugs ➢ Designate the agents having Sedative & hypnotic effects	**Sedative & hypnotic drugs:** Benzodiazepine & Barbiturates	Lecture Brainstorming Problem-based learning (PBL)	Short Answer Essay type Assignment
➢ Outline the necessity of anaesthetics in a surgical procedure ➢ Illustrate the mechanism of action ➢ Compare & contrast the drugs for a given situation	**Local & General anaesthetic:** History, mechanism of action, properties, pharmacological action of local & general anaesthetics.	Lecture Case Study Brainstorming	Essay type Assignment Presentation Viva-voce
➢ Interpret the mechanism of CNS stimulation ➢ Identify the key regulatory factors of nervous system stimulation ➢ Discuss the relationship between drug dose & clinical response of various CNS stimulant drugs	**CNS stimulant drugs:** Strychnine, xanthine & methylxanthine, amphetamine, nicotine.	Lecture Brainstorming Problem-based learning (PBL)	Short Answer Essay type Assignment

Recommended Books:

1. Goodman & Gillman's Pharmacological Basis of Therapeutics- Hardman, Joel G., 10th edition, Mc graw Hill Incorporated.
2. Basic and Clinical Pharmacology- Bertram G. Katzung, 9th edition, Mc Graw Hill Companies.
3. Medical Pharmacology-Andres Goth, 8th edition, Toppan Co. Ltd.
4. Pharmacology & Pharmacotherapeutics- R. S. Satosker, Paperback, 2005, Popular Prakashani Ltd. India.
5. Clinical Pharmacology- D. R. Laurence, P. N. Bennett and M. J. Brown, 9th edition, Churchill Livingstone.
6. Clinical Pharmacy and Therapeutics, Roger walker and Clive Edwards, 3rd edition, Churchill Livingstone.