RAFFLES UNIVERSITY

TEACHING PLAN: Pharmacology I

SCHOOL: (SOP) SCHOOL OF PHARMACY		**ACADEMIC SESSION: 2023 – 2024**	Teacher name – Bimla khati
1	**Subject Code**	BP404T	
2	**Subject**	**Pharmacology I**	
3	**Credits**	**4**	
4	**Learning Hours**	**Assessment 10** **Guided Study 20** **Contact Hours 45** **75 hours**	
5	**Course Objective**	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 and 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	
6	**Course Outcomes**	1. Employ a broad understanding Pharmacology 2. Understand and employ the mechanism of drug action at organ system/sub cellular/ macromolecular levels.	
7	**Outline syllabus:**		

7.01	**Paper Code**	**Unit**	**Introduction**	**Page Numbers[1]**	**Lectures**
	BP404T	Unit I	1.a. Introduction to Pharmacology- Definition, historical landmarks and scope of pharmacology, nature and source of drugs, essential drugs concept and routes of drug administration, Agonists, antagonists (competitive and non -competitive), spare receptors, addiction, tolerance, dependence, tachyphylaxis, idiosyncrasy, allergy. b. Pharmacokinetic-Membrane transport, absorption, distribution, metabolism and excretion of drugs. Enzyme induction, enzyme inhibition, kinetics of elimination	1-23	08
		Unit II	1.A. Pharmacodynamics- Principles and mechanisms of drug action. Receptor theories and classification of receptors, regulation of receptors. drug receptors interactions signal transduction mechanisms, G-protein–coupled receptors, ion channel receptor, transmembrane enzyme linked receptors, transmembrane JAK-STAT binding receptor and receptors that regulate transcription factors, dose response relationship, therapeutic index, combined effects of drugs and factors modifying drug action.	23-43	12

			B. Adverse drug reactions. C. Drug interactions (pharmacokinetic and pharmacodynamic D. Drug discovery and clinical evaluation of new drugs Drug discovery phase, preclinical evaluation phase, clinical trial phase, phases of clinical trials and pharmacovigilance.		
		Unit III	3. **Pharmacology of peripheral nervous system** a. Organization and function of ANS. b. Neurohumoral transmission-transmission and classification of neurotransmitters. c. Parasympathomimetic, Parasympatholytic, Sympathomimetics, sympatholytic d. Neuromuscular blocking agents and skeletal muscle relaxants (peripheral). e. Local anaesthetic agents. f. Drugs used in myasthenia gravis and glaucoma	47-88	10
		Unit IV	4. **Pharmacology of central nervous system** . A. Neurohumoral transmission in the C.N.S .special emphasis on importance of various neurotransmitters like with GABA, Glutamate, Glycine, serotonin, dopamine . B General anaesthetics and pre-anaesthetics**.** . C. Sedatives, hypnotics and centrally acting muscle relaxants. . D.Anti-epileptics . E. Alcohols and disulfiram	141-194	08
		Unit V	5. Pharmacology of drugs acting on endocrine system a. Androgens and Anabolic steroids. b. Estrogens, progesterone and oral contraceptives. c. Drugs acting on the uterus. 6. Bioassay a. Principles and applications of bioassay. b. Types of bioassay c. Bioassay of insulin, oxytocin, vasopressin, ACTH, d-tubocurarine, digitalis, histamine and 5-HT	259-288	07
8	**Course Evaluation**				
8.1	**CA: 30%**				

8.11	**Attendance**	80%
8.12	**Homework**	2 Assignments, 10%
8.13	**Quizzes**	4 Quizzes, 80%
8.14	**Projects**	1 Project, 5%
8.15	**Presentation**	1 Presentation, 5%
8.16	**Any other**	--
8.2	**MTE**	20%
8.3	**End-term examination: 50%**	
9	**Text Books & References**	
9.1	**Text book**	1. K.D.Tripathi. Essentials of Medical Pharmacology, JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi. 2. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher 3. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
9.2	**References**	1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology,.Churchil Livingstone Elsevier 2. Goodman and Gilman's, The Pharmacological Basis of Therapeutics 3. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs, The Point Lippincott Williams & Wilkins 4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs, The Point Lippincott Williams & Wilkins 5. Modern Pharmacology with clinical Applications, by Charles R.Craig& Robert

Mapping of Outcomes v. Topics

Outcome no. → Syllabus topic↓	1	2	3	4	5
Paper Code.Unit I (a)	✓				
Paper Code. Unit I (b)		✓			
Paper Code. Unit I (c)			√		
Paper Code.Unit II (a)				✓	
Paper Code. Unit II(b)				✓	
Paper Code. Unit II(c)				✓	
Paper Code.Unit III (a)				✓	
Paper Code. Unit III(b)				✓	
Paper Code. Unit III(c)				✓	

Recommended Books (Latest Editions)

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology,.Churchil Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics

4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs, The Point Lippincott Williams & Wilkins
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews-Pharmacology
6. K.D.Tripathi. Essentials of Medical Pharmacology, JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.
7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
8. Modern Pharmacology with clinical Applications, by Charles R.Craig& Robert,

QUESTION BANK FOR PHARMACOLOGY I (BP404T)

UNIT I

1. What are absorption? Factors affecting of drug absorption.
2. Write a note on route or drug administration.
3. What is metabolism. Explain the phase -II reaction.
4. Write a note on drug distribution.
5. Explain the kinetic of elimination of drug.
6. What is pharmacology and explain the history of pharmacology.
7. Define the term

    a. tachyphylaxis
    b. idiosyncrasy
    c. Tolerance
    d. Pharmacology
    e. Pharmacokinetic
    f. Pharamtheraputics
    g. Pharmadyanamics
    h. Therapeutic index

UNIT II

1. What are pharmacodynamic? Explain the principal of drug action.
2. Explain the drug interaction.
3. Write as note on ADR
4. Explain the receptors theories and note on JAK STAT binding.
5. Explain the drug discovery phase and pharmacovigilance.
6. Write a note on GPCR receptor.

UNIT III

1.Explain the organization and function of ANS.
2. Classify the parasympathomimetic and parasympatholytic drugs.
3.Classify the sympathomimetic and sympatholytic drugs.
4. parasympathomimetic and parasympatholytic drugs.
5. Write a note on local anaesthetics.

6. Differentiate between myasthenia gravis and glaucoma.
7. What is glaucoma? Classify them well.
8. write down note on neuromuscular blocking agents.

UNIT IV

1. Explain CNS neurotransmitter with proper classification.
2. Name histamine and serotonin receptors. Describe them in detail.
3. Write a note on general anaesthetics.
4. Classify the antiepileptic drug with MOA.
5. Define the sedative and hypnotics drug with MOA.
6. Write a note on alcohol and disulfiram.
7. Which are role of neurotransmitters?
   a. GABA
   b. GYCINE
   c. GLUTAMATE
   d. Serotonin

UNIT V

1. Explain the psychopharmacological agents.
2. Classify antidepressants and antianxiety drugs with ADR effect, pharmacology action.
3. Write a note on drug used in Parkinson and Alzheimer diseases.
4. Write a note on CNS stimulant.
5. Explain the opioid analgesics and antagonists.
6. Write a note on drug addiction ,abuse, and tolerance.