

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm SEMESTER: IV

Subject Name: Basic Concepts of Pharmacology and Clinical Pharmacy Practice

Subject Code: 2240005

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	0	0	3	80	20	0	0

Theory

Sr No	Course Contents	Total Hrs
1	Define following terms: Pharmacy, Pharmacology, Clinical pharmacy, Clinical Pharmacology, Pharmacokinetics, Pharmacodynamics, Pharmacoepidemiology, Pharmacoeconomics, Pharmacogenomics, Therapeutics, Toxicology, Chemotherapy, Pharmacopoeia, Drug, Medicine, Poison, Drug tolerance, Toxicity. Introduction and scope of pharmacology and clinical pharmacy, Nature and sources of drugs, Drug nomenclature, Routes of drug administration.	4
2	Pharmacokinetics: (A) Biological membrane, mechanism of drug transportation, Absorption, factors affecting absorption, Distribution, volume of distribution, redistribution, penetration into brain, passage across placenta, plasma protein binding, tissue storage, Metabolism/biotransformation, Phase-I and Phase-II reactions, microsomal enzymes and their induction, Excretion, mechanism of renal excretion, enterohepatic circulation. (B) Area under curve (for single dose and repeated dose), Bioavailability and bioequivalence, Plasma half life and Clearance, Loading dose and maintenance dose, Therapeutic drug monitoring (TDM) and its significance.	12
3	Pharmacodynamics: Principle of drug action, Target of drug action– receptors, ion channels, enzymes, transport proteins, Introduction to various types of receptor- ligand gated ion channel, G-protein coupled receptor, kinase linked receptor, nuclear receptor, Introduction to various types of ion channels- open channels and gated channels, Dose response relationship, Agonist and antagonist, Combined effects of drugs (potentiation, addition, synergism and antagonism), Drug antagonism	9
4	Modification in effects of drugs with special reference to Children, elders and pregnancy.	4

5	Drug interaction: Classify drug interaction based on mechanisms (pharmacokinetic types and pharmacodynamic types), drug food interaction.	3
6	Adverse drug reactions: Brief outline on followings terminology related to adverse effects-side effects, overdose effects, secondary effects, toxic effects, intolerance, drug allergy, iatrogenic effects, mutagenicity, teratogenicity, carcinogenicity, photosensitivity, drug withdrawal reactions, drug dependence Classify ADR as per Rawlins-thompson system, Pharmacovigilance and epidemiological methods in ADR detection, Medication errors and adverse drug events.	7
7	Patient counselling, communication skills for effective counselling, steps for patient counselling, Medication adherence and non-adherence, determinants of medication non-adherence, Drug information and poison information.	4
8	Concept of essential medicines and rational drugs use, essential medicines list, Standard Treatment Guidelines, Drug and Therapeutics Committee	2

References Books:

1. Clinical pharmacy and therapeutics . Roger Walker and Cate Whittlesea
2. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics..
3. Rang, H.P. & Dale, M.M. Pharmacology.
4. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. The pharmacological Basis of therapeutics.
5. Katzung, B.G. Basic and clinical pharmacology. Latest edition.
6. K.D. Tripathi. Essentials of Medical Pharmacology.
7. G. Parathsarthee, K. Nyfort-Hansen and M. C. Nahata. A textbook of clinical pharmacy practice.