GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm

SEMESTER: VIII

Subject Name: Pharmaceutical Chemistry – X (Medicinal Chemistry - III)
Subject Code: 2280003

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	0	3	6	80	20	80	20

Sr. No.	Course content	Teaching Hours To be allotted
1	Introduction, history, classification, nomenclature, mechanism of action, adverse effects, therapeutic uses, structure activity relationship (SAR) and synthetic procedures of selected drugs and recent developments of following categories to be covered.	
	Drugs acting on Cardiovascular System:	
	Cardiotonic Agents SAR: Cardiac glycosides Synthesis: Dobutamine	4
	Antihypertensive Agents SAR: ACE Inhibitors, Dihydropyridnes Synthesis: Nifedipine, Amlodipine, Atenolol, Metoprolol, Captopril, Hydralazine.	8
	Antiarrhythmic Agents Synthesis: Lignocaine, Flecainide.	3
	Antianginal Agents Synthesis: Glyceryltrinitrate, Isosorbidedinitrate	2
	Antihyperlipidemic agents: SAR: HMG CoA Reductase inhibitors Synthesis :Clofibrate	4
	Coagulants and Anticoagulants Synthesis of warfarin	2
	Antiplatelet Agents	2
	Thrombolytic Agents	1
	Plasma expanders	1
2	**Diuretics:** SAR: Thiazide diuretics, 5-Sulfamoyl benzoic acid derivatives. Synthesis: Hydrochlorthiazide, Acetazolamide, Furosemide, Ethacrinic acid	4

3	**Endocrine system**	
	Antidiabetic agents: Synthesis: Glipizide, Metformin, Pioglitazone, Tolbutamide,Glimipride.	5
	Thyroid Hormones and Antithyroid Drugs Synthesis: Methimazole, Carbimazole.	2
	Steroids and Therapeutically related compounds Nomenclature and stereochemistry of steroids Adrenocorticoids – Mineralocorticoids, Glucocorticoids Estrogens, Progestins and Androgens SAR: Estrogens and Adrenocorticoids, Progestins, Androgens	4
4	**Anti-obesity drugs**	1
5	**Immunomodulators**	2

Practical – 22800P3

Sr. No.	Content	No. of practical hours
1	Synthesis, Reaction monitoring and purification of following organic compounds: a) p-Nitro aniline from Acetanilide b) Benzillic acid from benzoin c) Benzamide from Benzaldehyde d) m-Nitrophenol from Nitrobenzene e) p-Aminophenol from Nitrobenzene f) Chalcone from Benzaldehyde and Acetophenone g) Barbituric acid from Urea and Dimethyl malonate	33
2	Characterization of synthesized compounds with the help of UV and IR spectroscopy.	12

References Books:

1. J. N. Delagado and W. A. R. Remers, 11thedn, Wilson and Giswolds Textbook oforganic medicinal and pharmaceutical chemistry, J. Lippincott Co. Philadelphia.
2. W. C. Foye, Principles of medicinal Chemistry, Lea and Febiger, Philadelphia
3. H. E. Wolff, edn, Burgers Medicinal chemistry, John Wiley and sons, New YorkOxford University Press, Oxfords.
4. Daniel Lednicer, Strategies for organic drug synthesis and design, John Wiley andSons USA
5. L. Finar. Organic chemistry Vol. I and Vol. II. ELBS/Longman, London
6. Vogel's Text books practical organic chemistry, ELBS/Longman, London