

GUJARAT TECHNOLOGICAL UNIVERSITY
PHARM.D
3rd Year

Subject Name: MEDICINAL CHEMISTRY

Subject Code: 838805

Scope:

Objectives:

Sr.	Topic	Hr
1.	Modern concept of rational drug design: A brief introduction to Quantitative Structure Activity Relationship (QSAR), prodrug, combinatorial chemistry and computer aided drug design (CADD) and concept of antisense molecules. A study of the development of the following classes of drugs including SAR, mechanism of action, synthesis of important compounds, chemical nomenclature, brand names of important marketed products and their side effects.	10
2.	Anti-infective agents a) Local anti-infective agents b) Preservatives c) Antifungal agents d) Urinary tract anti-infectives e) Antitubercular agents f) Antiviral agents and Anti AIDS agents g) Antiprotozoal agents h) Anthelmintics i) Antiscabies and Antipedicular agents	10
3.	Sulphonamides and sulphones	3
4.	Antimalarials	4
5.	Antibiotics	12
6.	Antineoplastic agents	5
7.	Cardiovascular agents a) Antihypertensive agents b) Antianginal agents and vasodilators c) Antiarrhythmic agents d) Antihyperlipidemic agents e) Coagulants and Anticoagulants f) Endocrine	16
8.	Hypoglycemic agents	7
9.	Thyroid and Antithyroid agents	4
10.	Diuretics	5
11.	Diagnostic agents	4
12.	Steroidal Hormones and Adrenocorticoids	10

Practical : 3 Hrs./Week 1. Assays of important drugs from the course content. 2. Preparation of medicinally important compounds or intermediates required for synthesis of drugs. 3. Monograph analysis of important drugs. 4. Determination of partition coefficients, dissociation constants and molar refractivity of compounds for QSAR analysis.

Reference Books:

- a. Wilson and Gisvold's Text book of Organic, Medicinal and Pharmaceutical Chemistry, Lippincott-Raven Publishers-New York, Philadelphia.
- b. William.O.Foye, Principles of Medicinal Chemistry, B.I. Waverly Pvt. Ltd., New Delhi.
- c. Burgers, Medicinal Chemistry, M.E., Welly Med.Chemistry M.E. Walfed Johnwiley and Sons, Wiley-interscience Publication, New York, Toronto.

- d. A Text Book of Medicinal Chemistry Vol. I and II by Surendra N. Pandeya, S.G. Publisher, 6, Dildayal Nagar, Varanasi -10.
- e. Indian Pharmacopoeia 1985 and 1996. The Controller of Publications, Civil Lines, Delhi - 54.
- f. Current Index of Medical Specialities (CIMS) and MIMS India, MIMS, A.E. Morgan Publications (I) Pvt. Ltd, New Delhi-19.
- g. Organic Drug Synthesis-Ledniser Mitzsher Vol. I and II.
- h. Pharmaceutical Chemistry drug Synthesis Vol. I and II by H. J. Roth and A. Kleemann.
- i. The Science and Practice of Pharmacy Vol. 1 and 2, Remington, MACK Publishing Company, Easton, Pennsylvania.