Ph.D

FACULTY OF PHARMACY

SCHEME OF STUDIES FOR Ph.D. COURSE WORK IN PHARMACEUTICAL CHEMISTRY

FIRST SEMESTER		TOTAL CREDIT HOURS:09
COURSE NO.	TITLE	CREDIT HOURS
P.CHEM-811	Drug Discovery	03
P.CHEM-813	Structure Activity Relationship	03
P. CHEM-815	Metal Complexes	03
SECOND SEMESTER		TOTAL CREDIT HOURS: 09
P.CHEM-817	Biological Membranes	03
P.CHEM-819	Drug Solubility	03
P. CHEM-821	Drug Properties and Pharmaceutical Calculations	03

SYLLABUS FOR Ph.D. PHARMACEUTICAL CHEMISTRY

FIRST SEMESTER — TOTAL CREDIT HOURS:09

P.CHEM-811 DRUG DISCOVERY (03 Credit Hours)

Drug discovery with special reference to the following:

i) A detailed study of Pharmaceutical Biotechnology
ii) A detailed description of Gene Therapy

P.CHEM-813 STRUCTURE ACTIVITY RELATIONSHIP (SAR) AND DRUG METABOLISM. (03 Credit Hours)

i) Introduction, distribution of drug metabolism, phase I metabolizing enzymes and phase II Conjugation.
ii) SAR with special reference to the binding role of hydroxyl group
iii) The binding role of amino group
iv) The binding role of aromatic rings
v) The binding role of double bonds
vi) The binding role of ketones and amides
vii) Quantitive SAR (QSAR)

P.CHEM-815 METAL COMPLEXES (03 Credit Hours)

i) Shapes and structure of complexes
ii) Complex Stability
iii) General Role of Metal Complexes in Biological Processes

SECOND SEMESTER 192

P.CHEM-817 BIOLOGICAL MEMBRANES (03 Credit Hours)

i) Introduction
ii) The Plasma Membranes
iii) The Transfer of species through Cell Membranes
iv) Drug Action that affects the structure of Cell membranes and Walls

P.CHEM-819 DRUG SOULBILITY (03 Credit Hours)

i) Introduction
ii) Salt Formation
iii) The incorporation of Water Solubilising Groups in a Structure
iv) Formulation Methods for improving water Solubility

P.CHEM-821 DRUG PROPERTIES AND PHARMACEUTICAL CALCULATIONS (03 Credit Hours)

Physico-Chemical and Bio Pharmaceutical Properties of drug substances and Pharmaco-kinetics. Pharmaceutical Calculations involving Buffer Solutions, Radio Active Pharmaceuticals, Calculations involving Molecular Weight, Calculations involving Chemical Reaction and Graphical Methods with special reference to linear relationship and interpretation of data on graphs.

RECOMMENDED BOOKS

1. Wilson and Gisvolds, Text Book of Organic Medicinal and Pharmaceutical Chemistry. John H. Block, John M. Beale Jr. 11th Edition, 2004.
2. Principles of Medicinal Chemistry, By. Foye, David A. Williams Thomas 2002.
3. Burgers Medicinal Chemistry and Drug Discovery Therapeutics Agents, Edition by Manfred E. Wolf 996.
4. Remington The Science and Practice of Pharmacy 21st Edition, 2006.
5. An Introduction to Medicinal Chemistry, By. Graham L. Patrick.
6. The Principle of Medicinal Chemistry by Camille Georges Wermath
7. Medicinal Chemistry (R.S.C.) By. F.D. King.
8. An introduction to Medicinal Chemistry, By. Graham L.Patrick Oxford University, Press, 2001.
9. The Practice of Medicinal Chemistry, Edited by Comille Georges Wermuth 2nd Edition. Academic Press, An imprint of Elsevier.
10. Medicinal Chemistry An Introduction, By. Grareeth Thomas John Wiley & Sons, Ltd. 2000.
11. Essentials of Pharmaceutical Chemistry, 2nd Edition By. Donald Carins UK 2003.
12. Instant Notes Medicinal Chemistry, By. G. Patrick, Editied By. B.D. Hames 2002, UK.
13. Advanced Practical Medicinal Chemistry, By. Ashutosh Kr, New age International Publishers, 2004.
14. Pharmaceutical Calculations 8th Edition, Mitchell J. Stoklosa, Lea and febiger Philadelphia.
15. Pharmaceutical Calculations (Work Book) 2nd Edition 2005,Lambth High Street (London).

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