Gujarat Technological University
M. Pharm. Syllabus
Semester I
Paper Code 910206

CLINICAL PHARMACY SPECIALISATION

CLINICAL AND HOSPITAL PHARMACY (THEORY ONLY)
Theory
(Four hours per week, 6 Credits)

Course Content: **Hours**

1 Pharamcoepidemiology **10**

Definition, Origin and evaluation of pharmacoepidemiology, aims and applications, need for pharmacoepidemiology.
Prevalence, incidence and incidence rate. Monetary units, number of prescriptions, units of drugs dispensed, defined daily doses and prescribed daily doses, medication adherence measurement.
Measurement of risk, attributable risk and relative risk, time-risk relationship and odds ratio.
Drug utilization review, surveys of drug use, case reports, case series, cross-sectional studies, cohort studies, case control studies, meta-analysis studies, spontaneous reporting, prescription event monitoring and record linkage system.

2 Clinical Pharmacokinetics and therapeutic drug monitoring **15**

Clinical Pharmacokinetics
Introduction to clinical pharmacokinetics
Normograms and tabulations in designing dosage regimen, conversion from intravenous to oral dosing, determination of dose and dosing interval, drug dosing in the elderly and pediatrics and obese patients.
Pharmacokinetic drug interactions, Inhibition and induction of drug metabolism, Inhibition of biliary excretion
Therapeutic drug monitoring
Introduction
Individualization of drug dosage regimen (variability – genetic, age and weight, disease, interacting drugs).
Indications for TDM, Protocol for TDM
Pharmacokinetic/Pharmacodynamic correlation in drug therapy
TDM of drugs use in the following disease conditions: cardiovascular disease, CNS conditions etc
Dosage adjustment in renal and hepatic disease
Renal impairment
Pharmacokinetic considerations
General approach for dosage adjustment in renal disease
Measurement of glomerular filtration rate and creatinine clearance
Effect of hepatic disease of pharmacokinetics

3 Clinical Toxicology **08**
General principles involved in the management of poisoning
Antidotes and their clinical applications
Supportive care in clinical toxicology

Gut decontamination
Elimination enhancement
Toxicokinetics

4 **Clinical symptoms and management of acute poisoning with the following agents:** **07**

Pesticide poisoning: organophosphorus compounds, carbamates, organochlorines, pyrethroids Opiate overdose, Antidepressants, Barbiturates and benzodiazepines, Alcohol: ethanol, methanol, Paracetamol and salicylates, Non steroidal anti-inflammatory drugs, Radiation poisoning

5 **Clinical symptoms and management of chronic poisoning with the following agents:** **05**

Heavy metals: Arsenic, lead, mercury, iron, copper
Food poisoning

HOSPITAL PHARMACY

6 **Hospital pharmacy – organization and management** **03**

Organisational structure – staff, infrastructure & work load statistics
Management of materials and finance
Roles & responsibilities of hospital pharmacist
The budget – Preparation and implementation

7 **Hospital drug policy** **02**

Pharmacy and therapeutic committee (PTC)
Hospital formulary
Hospital committees: Infection committee, Research and Ethical committee

8 **Hospital pharmacy services** **05**

Procurement & warehousing of drugs and pharmaceuticals
Inventory control: definition, methods of inventory control, ABC, VED, EOQ, lead time, safety stock.

9 **Drug distribution in the hospital** **05**

Individual prescription method
Floor stock method
Unit dose drug distribution method
Distribution of Narcotic and other controlled substances
Central sterile supply services – role of pharmacist
Radio pharmaceuticals – handling and packaging

ASSIGNMENTS

- The students are required to submit a minimum of two written assignments selected from the topics given to them.

Reference Books:

1 Malcolm Rowland & Thomasn Tozer. Clinical Pharmacakinetics & Concepts and Applications Lippincott Williams & Wilkins 1995
2 Ellenhorns Medical Toxicology – Diagnosis and treatment of poisoning. Mathew J. Ellenhorn.. Williams and Willkins publication, London. Second Edition
3 Hospital Pharmacy by William E. Hassan
4 Brian L. Strom, Stephen E. Kimmel. Textbook of Pharmacoepidemiology. Wiley
5 rug Interactions. Stockley I.H. (1996). The Pharmaceutical Press
6 oxicology - The basic science of poisons, international edition, Curtis D.Klaassen, 6th edition
7 oxicology – Principles and Applications, Raymond J.M.Niesink, John de.Vries,

Mannfred A. Hollinger
8 rug Interaction Facts, 2003. David S. Tatro.
9 oxicology - The basic science of poisons, international edition, Curtis D.Klaassen, 6th edition
10 oxicology – Principles and Applications, Raymond J.M.Niesink, John de.Vries, Mannfred A. Hollinger