

GUJARAT TECHNOLOGICAL UNIVERSITY

M.Pharm

CLINICAL PHARMACY

SEMESTER: II

Subject Name: Clinical Pharmacy Practice II

Subject Code: MCP201T

Scope:

Objectives:

| Sr No | Course Contents | Total Hrs |
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| 1 | International and national scenario of clinical pharmacy practice and Pharmaceutical care | 4 |
| 2 | Clinical Pharmacokinetics 1.Introduction to Clinical pharmacokinetics: Compartmental and Non compartmental models, Renal and non-renal clearance, Organ extraction and models of hepatic clearance, Estimation and determinants of bioavailability, Multiple dosing, Calculation of loading and maintenance doses 2. Pharmacokinetics of Drug Interaction: 2.a. Pharmacokinetic drug interactions, Inhibition and Induction of Drug metabolism, Inhibition of Biliary Excretion 2.b. Pharmacogenetics: Genetic polymorphism in Drug metabolism: Cytochrome P-450 Isoenzymes, Genetic Polymorphism in Drug Transport and Drug Targets, Pharmacogenetics and Pharmacokinetic / Pharmacodynamic considerations 2.c. Introduction to Pharmacometrics: Introduction to Bayesian Theory, Adaptive method or Dosing with feedback, Analysis of Population pharmacokinetic Data. | 20 |
| 3 | Altered Pharmacokinetics: Drug dosing in the elderly, Drug dosing in the pediatrics, Drug dosing in the obese patients, Drug dosing in the pregnancy and lactation, Drug dosing in the renal failure and extracorporeal removal of drugs, Drug dosing in the hepatic failure. | 10 |
| 4 | Pharmacoepidemiology 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, | 10 |

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| | spontaneous reporting, prescription event monitoring and record linkage system. | |
| 5 | 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 | 16 |
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REFERENCES:

1. A Textbook of Clinical Pharmacy Practice – Essential concepts and skills – Parthasarathi G, Karin Nyfort-Hansen and Milap Nahata
2. Malcolm Rowland & Thomas Tozer. Clinical Pharmacokinetics & Concepts and Applications Lippincott Williams & Wilkins 1995
3. Brian L. Strom, Stephen E. Kimmel. Textbook of Pharmacoepidemiology. Wiley Leon Shargel, Susanna Wu-Pong, Andrew Yu. Applied Biopharmaceutics & Pharmacokinetics. New York: Mc Graw Hill.
4. Peter L. Bonate. Pharmacokinetic - Pharmacodynamic Modeling and Simulation. Springer Publications.
5. Michael E. Burton, Leslie M. Shaw, Jerome J. Schentag, William E. Evans. Applied Pharmacokinetics & Pharmacodynamics: Principles of Therapeutic Drug Monitoring. Ippincott Williams & Wilkins.
6. Steven How-Yan Wong, Irving Sunshine. Handbook of Analytical Therapeutic Drug Monitoring and Toxicology. CRC Press, USA.
7. Soraya Dhillon, Andrzej Kostrzewski. Clinical pharmacokinetics. 1st edition. London: Pharmaceutical Press.
8. Joseph T. Dipiro, William J. Spruill, William E. Wade, Robert A. Blouin and Jane M. Pruemer. Concepts in Clinical Pharmacokinetics. American Society of Health-System Pharmacists, USA.
9. Malcolm Rowland, Thomas N. Tozer. Clinical Pharmacokinetics and pharmacodynamics: concepts and applications. Ippincott Williams & Wilkins, USA.
10. Evans, Schentag, Jusko. Applied pharmacokinetics. American Society of Health system Pharmacists, USA.
11. Michael E. Winter. Basic Clinical Pharmacokinetics. Ippincott Williams & Wilkins, USA.
12. Milo Gibaldi. Biopharmaceutics and Clinical Pharmacokinetics. Pharma Book Syndicate, USA.
13. Dhillon and Kostrzewski. Clinical pharmacokinetics. Pharmaceutical Press, London.
14. John E. Murphy. Clinical Pharmacokinetics. 5th edition. US: American Society of Health-System Pharmacist, USA.