Syllabus

Module 01 **10Hours**

Introduction to Biopharmaceutics

Absorption

- Mechanisms of drug absorption through GIT, factors influencing drug absorption though GIT, absorption of drug from Non per oral extra-vascular routes.

Distribution

- Tissue permeability of drugs, binding of drugs, apparent, volume of drug distribution, plasma and tissue protein binding of drugs, factors affecting protein-drug binding. Kinetics of protein binding, Clinical significance of protein binding of drugs.

Module 02 **10Hours**

Elimination

- Drug metabolism and basic understanding metabolic pathways renal excretion of drugs, factors affecting renal excretion of drugs, renal clearance, Non-renal routes of drug excretion of drugs.

Bioavailability and Bioequivalence

- Definition and Objectives of bioavailability, absolute and relative bioavailability, measurement of bioavailability, in-vitro drug dissolution models, in-vitro-in-vivo correlations, bioequivalence studies, methods to enhance the dissolution rates and bioavailability of poorly soluble drugs.

Module 03 **10Hours**

Pharmacokinetics

- Definition and introduction to Pharmacokinetics, Compartment models, Non compartment models, physiological models, One compartment open model. Intravenous Injection (Bolus). Intravenous infusion. Extra vascular administrations.
- Pharmacokinetics parameters – KE ,t1/2,Vd,AUC,Ka, Clt and CLR-definitions methods of eliminations, understanding of their significance and application.

Module 04 **08 Hours**

Multicompartment Models

- Two compartment open model. IV bolus.
- Kinetics of multiple dosing, steady state drug levels, calculation of loading and mainetnance doses and their significance in clinical settins.

Module 05 **07 Hours**

Nonlinear Pharmacokinetics

- Introduction.
- Factors causing Non-linearity.
- Michaelis-menton method of estimating parameters, Explanation with example of drugs.