

University of Al-Anbar

College of Pharmacy

Department of Clinical Pharmacy

Title of the course: *Therapeutic Drug Monitoring*

Course number: **529**

Level: 5th Class, 2nd Semester

Credit hours: **Theory 2 hours Laboratory 1 hour**

Tutors:

Reference text: *Bauer LA (Ed.), Applied Clinical Pharmacokinetics. McGraw Hill, New York, Latest edition. & Applied Biopharmaceutics and pharmacokinetic Author: Leon shargel; Latest edition.*

Objectives: The present course enables students to learn how to select the most appropriate drugs for an individual, recommend the dosage regimen that is most likely to achieve the desired therapeutic response with minimum risk of toxic effects and monitor the effect of a drug, if appropriate; the principles of clinical pharmacokinetics will be applied, which are fundamental to the current practice of clinical pharmacy, and may be more significant as pharmacists expand their roles into prescribing.

No	Lecture title	hours
1.	Principles of basic clinical pharmacokinetic parameters.	2
2.	Initiating treatment based on individualization approach.	2
3.	Volume of distribution and target concentration of drug in the plasma.	2
4.	Continuing treatment: maintenance dose and clearance, factors affecting clearance.	2
5.	Bioavailability and oral maintenance dosage regimen.	2
6.	Stopping treatment: Elimination rate constant and plasma concentration-time profile, elimination half-life.	3
7.	Variability in drug dosage requirements: effects of age, body weight, sex, renal function, liver function, genetic factors and drug interactions.	3
8.	Therapeutic drug monitoring: Principles of TDM, timing of sample collection , aminophyllin , digoxin, gentamicin , phenytoin, lidocaine .	2
9.	Monitoring of anti-infective agents, immunosuppressants, anti-epileptic drugs, drugs used in psychiatry, anti-cancer drugs, digoxin and theophylline.	3
10.	Dosage regimen design: Intravenous bolus administration, intravenous infusion.	3
11.	Multiple dosage regimens (Repetitive dosing).	2
12.	Determination of route of administration.	1
13	Dosing of drugs in infants and children, elderly and obese patient.	2
14	Effect of food on drug disposition.	1