Course Description Form

1. Course Name:

Biopharmaceutics

2. Course Code:

Phind25_411--

3. Semester / Year:

1st Semester /4th year

4. Description Preparation Date:

01/9/2025

5. Available Attendance Forms:

Students' signature on attendance sheet

6. Number of Credit Hours (Total) / Number of Units (Total)

2 hours Theoretical + 2 hours Practical (60) /4 units

7. Course administrator's name

Theoretical

Name: Assist. Prof Dr. Musab Mohammad Khalaf
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Name: Assist Dr Omar Abdulhakeem Hamid
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Practical

Name: Assist Lec. Mais Salim Saadallaha
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8. Course Objectives

1. The concept of biopharmaceutics.
2. Identifying factors that are influencing the bioavailability of a drug; these include
   a. GIT Physiological factors affecting oral dru absorption (oral drugs)
   b. Physicochemical properties of drug itself (solubility and dissolution rate)
   c. The type of dosage form and choice of excipients.
3. Bioavailability and bioequivalence studies.
4. Pharmacokinetics of drug absorption including
   a. One compartment open model.
   b. Multiple compartment models.

9. Teaching and Learning Strategies

Strategy	Lecturing Homework Quiz Practical laboratory demonstration, practice and repots

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2+2	Concept of biopharmaceutics, bioavailability and pharmacokinetics	Introduction to Biopharmaceutics	Theoretical lectures.	Paper-based exa
2	2+2	GIT Physiological factors influencing gastrointestinal drug absorption: Gastric emptying time, pH and food	GIT Physiolog factors influenc gastrointestinal drug absorption	Theoretical lectures. Laboratory demonstration.	Paper-based exa
3	2+2	GIT Physiological factors influencing gastrointestinal drug absorption: Mechanisms of drug absorption	GIT Physiolog factors influenc gastrointestinal d absorption	Theoretical lectures. Laboratory demonstration.	Paper-based exa
4	2+2	Drug physicochemical factors influencing drug absorption: Solubility and dissolution	Drug physicochem factors influencing d absorption	Theoretical lectures. Laboratory demonstration.	Paper-based exa
5	2+2	pH- partitioning hypothesis of drug absorption: pKa and dissociation and lipid solubility	pH- partition hypothesis of d absorption	Theoretical lectures. Laboratory experiments.	Paper-based exa
6	2+2	Dosage form factors influencing drug absorption: type of the dosage form	Dosage form factors influencing drug absorption	Theoretical lectures. Laboratory demonstration.	Paper-based exa
7	2+2	Dosage form factors influencing drug absorption: Excipients	Dosage form factors influencing drug absorption	Theoretical lectures. Laboratory demonstration.	Paper-based exa
8	**Mid-term exam**				
9	2+2	Bioavailability and Bioequivalence: Types of bioavailability studies	Bioavailability and Bioequivalence	Theoretical lectures. Laboratory demonstration.	Paper-based exa
10	2+2	Pharmacokinetics: One compartment open model	Pharmacokinetics	Theoretical lectures. Laboratory demonstration.	Paper-based exa

11	2+2	Pharmacokinetics: multiple compartment model	Pharmacokinetics	Theoretical lectures. Laboratory demonstration.	Paper-based exa
12	2+2	Pharmacokinetics: Intra-venous infusion	Pharmacokinetics	Theoretical lectures. Laboratory demonstration.	Paper-based exa
13	2+2	Pharmacokinetics: Protein binding	Pharmacokinetics	Theoretical lectures. Laboratory demonstration.	Paper-based exa
14	2+2	Pharmacokinetics: Dosage regimen	Pharmacokinetics	Theoretical lectures. Laboratory demonstration.	Paper-based exa
15	**Seminars**				

11. Course Evaluation

- 20 M Theoretical assessment;
  (paper-based mid-term exam + quiz + attendance + seminar)
- 20 M practical assessment (attendance + quiz + practice)
- 60 M paper-based theoretical final exam

100 M total

12. Learning and Teaching Resources

Required textbooks	Pharmaceutics The Science of Dosage Form Design 2Ed M.E.Aulton v
Main references (sources)	Shargel L, Yu AB, (Eds.), Applied Biopharmaceutics and Pharmacokinetics; 6th edition,2012.
Electronic References, Websites	https://www.youtube.com/watch?v=5gJxaWep_Dk