Course Description Form

1. Course Name:

Pharmaceutical Biotechnology (Theoretical)

2. Course Code:

Phind24_5214-

3. Semester / Year:

Second semester/2024-2025

4. Description Preparation Date:

01/2/2025

5. Available Attendance Forms:

Students' signature on attendance sheet

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

1 hours Theoretical /1 units

7. Course administrator's name

Theoretical

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Name: Assist. Prof Dr. Ali Alazzo
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Practical

8. Course Objectives

Course Objectives

Identify the most common therapeutic peptides and proteins derived from biotechnological sourc
Knowing structure details, formulation requirements,
and pharmacist role.

9. Teaching and Learning Strategies

Strategy	Lecturing Homework Quiz

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Importance and Definition of Biotechnology History of Biotechnology derived product	Biotechnology - introduction	Theoretical lectures.	Paper-based exams
2	1	Recombinant DNA biotechnology.	Formulation biotechnology prod	Theoretical lectures.	Paper-based exams

			(biopharmaceutical consideration)		
3	1	Sterilization (chemical + physical Methods). Chemotherapy.	Microbial consideration- steril pyrogen v decontamination	Theoretical lectures.	Paper-based exams
4	1	Types and specification of excipients used in biotechnological formulation	Excipients of paren products - solubi enhancer-anti adsorption age buffer componer preservatives – osmo agents.	Theoretical lectures.	Paper-based exams
5	1	Types and specification of excipients used in biotechnological formulation	Excipients of paren products - solubi enhancer-anti adsorption age buffer componer preservatives – osmo agents.	Theoretical lectures.	Paper-based exams
6	1	Formulation requirements according to route of administration	Route of administrat Parentral route Oral route.	Theoretical lectures.	Paper-based exams
7	1	Formulation requirements according to route of administration	Route of administrat Parentral route Oral route	Theoretical lectures.	Paper-based exams
8	**Mid-term exam**				
9	1	Formulation requirements according to route of administration	Route of administrat Parentral route Oral route	Theoretical lectures.	Paper-based exams
10	1	Formulation requirements according to route of administration	Route of administrat Alternative routes (nasal-pulmonary- rectal-buccal transdermal	Theoretical lectures.	Paper-based exams
11	1	Formulation requirements according to route of administration	Route of administrat Alternative routes (nasal-pulmonary- rectal-buccal transdermal	Theoretical lectures.	Paper-based exams
12	1	ADME of peptides and proteins Assessments and relationship to pharmacodynamics action	Pharmacokinetic of peptides and protein (Elimination o proteins (proteolysis excretion-metabolisr	Theoretical lectures.	Paper-based exams

13	1	ADME of peptides and proteins Assessments and relationship to pharmacodynamics action	Pharmacokinetic of peptides and protein (Elimination o proteins (proteolysis excretion-metabolisr	Theoretical lectures.	Paper-based exams
14	1	• explain the basic principles and objectives of gene delivery in therapeutic applications. • Differentiate between viral and non-viral gene delivery methods, including their advantages and limitations. • Identify key vectors used in gene delivery and describe their mechanisms of action.	Gene delivery	Theoretical lectures.	Paper-based exams
15	**Question and answers (Corse review)**				

11. Course Evaluation

- 30 M Theoretical assessments;
  (paper-based mid-term exam)
- 70 M paper-based theoretical final exam

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  Total 100 M

12. Learning and Teaching Resources

Required textbooks	1. pharmaceutical biotechnology J Crommelin, Robert D. Syinder
Main references (sources)	1. pharmaceutical biotechnology J Crommelin, Robert D. Syinder
Electronic References, Websites	