

Course E-Syllabus

1	Course title	Chemistry of Proteins and Enzymes
2	Course number	304922
3	Credit hours	3
	Contact hours (theory, practical)	Theory
4	Prerequisites/corequisites	
5	Program title	Ph.D in Biological sciences
6	Program code	
7	Awarding institution	Department of Biology / The University of Jordan
8	School	School of Science
9	Department	Department of Biology
10	Level of course	Ph.D
11	Year of study and semester (s)	1 st semester, 2020/2021
12	Final Qualification	
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input checked="" type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	2020

18 Course Coordinator:

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19 Other instructors:

Name:
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Name:
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20 Course Description:

As stated in the approved study plan.

Investigation of proteins and enzymes including the followings: amino acids and their reactions, protein conformation, protein isolation and classification, enzyme classification and factors affecting its activity, kinetic, active site, enzymatic inhibition. Michaelis Menten enzymes and other enzymatic models. enzyme regulation

21 Course aims and outcomes:

A- Aims:

To explore protein chemistry and structure including enzymatic kinetics and their inhibition

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, students will be able to:

- Recognize all amino acids structure and chemistry and chemical properties
- Understand the titration curves of amino acids and the isoelectric point
- Understand the chemistry of peptide bond
- Know different levels of protein structures
- To understand different methods of protein separation and purifications
- Understand different chromatographic techniques
- To know different methods of amino acid sequencing
- To know the nomenclature and classifications of enzymes
- To know enzymatic models that describe enzymatic actions
- To know different factors that affect the enzymatic activities
- To know and understand enzyme kinetics
- To know and understand kinetics of enzyme inhibition
- To know enzyme regulation

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	Chemistry of Amino acids and titration curves of amino acids	lecturing and discussion		
	1.2				
	1.3				
2	2.1	Levels of Protein structure	lecturing and discussion		
	2.2				
	2.3				
3	3.1	Visualizing Protein structure using computer softwares and using protein data bank	lecturing and Demonstrations		
	3.2				
	3.3				
4	4.1	Globular Proteins Hemoglobin and myoglobin Oxygen dissociation curves	lecturing and discussion		
	4.2				
	4.3				
5	5.1	Fibrous Proteins Protein Isolation,	lecturing and discussion		
	5.2				
	5.3				
6	6.1	Protein purification and chromatography	lecturing and discussion		
	6.2				
	6.3				
7	7.1	Protein Gel electrophoresis and Western blot	lecturing and discussion		
	7.2				
	7.3				
8	8.1	ELISA Mid Exam	lecturing and discussion		
	8.2				
	8.3				
9	9.1	Proteomics and MS analysis of proteins and amino acid sequencing	lecturing and discussion		
	9.2				
	9.3				
10	10.1	Enzymes Kinetics I	lecturing and discussion		
	10.2				
	10.3				
11	11.1	Enzymes Kinetics II	lecturing and discussion		
	11.2				
	11.3				
12	12.1	Student Presentations	Presentations and discussions		
	12.2				

	12.3				
13	13.1	Student Presentations	Presentations and discussions		
	13.2				
	13.3				
14	14.1	Student Presentations	Presentations and discussions		
	14.2				
	14.3				
15	15.1	Student Presentations Final Exam	Presentations and discussions		
	15.2				
	15.3				

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Mid Exam	30	See above		LMsystem
Term Paper and Presentations an discussion	20			
Final Exam	50			

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

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25 Course Policies:

- A- Attendance policies:
Student should attend at least 85% of the lectures
- B- Absences from exams and submitting assignments on time:
Absences is not allowed
- C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

F- Available university services that support achievement in the course:

26 References:

A- Required book(s), assigned reading and audio-visuals:

- Lehninger Principles of Biochemistry, 7th Edition
- Biochemistry, 4th Edition by [Donald Voet, Judith G. Voet
- Biochemistry. Ninth Edition], Lubert Stryer;

B- Recommended books, materials and media:

Lecture Notes

27 Additional information:

Name of Course Coordinator: ---Yasser Bustanji-----Signature: ----- Date: -----

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----