Course E-Syllabus

1	**Course title**	Practical Biochemistry
2	**Course number**	5501323
3	**Credit hours**	1 Credit hours (3 Practical hours)
	Contact hours (theory, practical)	(10-11) Am Thu before lockdown time, Using Facebook messenger group during lockdown time for online contact.
4	**Prerequisites/corequisites**	5501321 Biochemistry
5	**Program title**	Biological Sciences
6	**Program code**	01
7	**Awarding institution**	The University of Jordan\Aqaba Branch
8	**School**	School of Basic and Marine Sciences
9	**Department**	Department of Marine Biology
10	**Level of course**	3rd academic year
11	**Year of study and semester (s)**	2nd semester of academic year 2019/2020
12	**Final Qualification**	BSc of Biological Sciences
13	**Other department (s) involved in teaching the course**	None
14	**Language of Instruction**	English
15	**Teaching methodology**	☐Blended ☒Online
16	**Electronic platform(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☒Zoom ☒Others: Microsoft Form, Youtube
17	**Date of production/revision**	06/06/2020

18 Course Coordinator:

Name: **Amirah Mohammad Al-Riyati**
Office number: 327
Phone number:032090450 Ext 35049
Email: a.riyati@ju.edu.jo

19 Other instructors: None

Name:
Office number:
Phone number:
Email:

Name:
Office number:
Phone number:
Email:

20 Course Description:

The practical Field deals with the enzyme mechanism and the conditions which affect, Buffer solution preparation and their chemical properties, Identifying of biological macromolecules and their quantity and quality analysis, also deals with the definition of the full biochemical analysis devices in terms of principle and method of use.

21 Course aims and outcomes:

A- Aims:

1. Prepare essential chemical solutions.
2. Learn the basics of protein isolation.
3. List the various techniques involved in protein determination.
4. Distinguish the concept of enzyme function.
5. Explore the various types of carbohydrates and determination method.
6. Classify lipids; recognize their properties and determination method.
7. Learn how to use spectrophotometer to identify concentration& purity for samples.

B- Intended Learning Outcomes (ILOs):

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

1. Learn how to express scientific work.
2. Prepare essential chemical solutions; learn how to calculate the chemical and biological concentrations.
3. Dealing with pH meter concept, uses& storage.
4. Learn the concept of Spectrophotometer.
5. Dealing with Spectrophotometer technique, Learn how to use spectrophotometer to identify concentration& purity for samples.
6. Learn the Basics of protein isolation.
7. List the various techniques involved in protein determination.
8. Distinguish the concept of enzyme, function and activity.
9. Explore the various types& Quality analysis for Carbohydrate.
10. Classify the lipids; recognize their properties and determination method.

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1 1.2 1.3	**Chapter 1** Scientific report and Data analysis	Direct Lecture in **Computer Lab - the University of Jordan\Aqaba Branch,** Synchronous lecturing/meeting	Homework	**Biochemistry Lab Manual by Amirah Al-Riyati**, Last edition, 2020
2	2.1 2.2 2.3	**Chapter 2** Biochemical calculation & Preparation	Direct Lecture in **Biochemistry lab,** Synchronous lecturing/meeting	Report Quiz Homework	
3	3.1 3.2 3.3	**Chapter 3** pH	Direct Lecture in **Biochemistry lab,** Synchronous lecturing/meeting	Scientific Report Quiz Homework	
4	4.1 4.2 4.3	**Chapter 4** Spectrophotmeter	Direct Lecture in **Biochemistry lab,** Synchronous lecturing/meeting	Scientific Report Quiz Homework	
5	5.1 5.2 5.3	**Chapter 5** Standard Curve using Spectrophotmeter	Direct Lecture in **Biochemistry lab,** Synchronous lecturing/meeting	Scientific Report Quiz Homework	
6	6.1 6.2 6.3	Mid Term Exam	**In the University of Jordan\Aqaba Branch**	Exam	
7	7.1 7.2 7.3	**Chapter 6** Protein Isolation	Online lecture on Moodle platform, Synchronous lecturing/meeting	Scientific Report Quiz Homework	
8	8.1 8.2 8.3	**Chapter 7** Protein Determination	Online lecture on Zoom platform, Synchronous lecturing/meeting	Scientific Report Quiz Homework	
9	9.1 9.2 9.3	**Chapter 8** Enzyme Extraction	Online lecture on Zoom platform, Synchronous lecturing/meeting	Scientific Report Quiz Homework	
10	10.1 10.2 10.3	**Chapter 9** Enzyme Activity	Online lecture on Microsoft Teams platform, Synchronous	Scientific Report Quiz Homework	

			lecturing/meeting			
11	11.1 11.2 11.3	**Chapter 10** Carbohydrate Determination	Online lecture on Microsoft Teams platform, Synchronous lecturing/meeting	Scientific Report Quiz Homework		
12	12.1 12.2 12.3	**Chapter 11** Lipid Determination	Online lecture on Microsoft Teams platform, Synchronous lecturing/meeting	Scientific Report Quiz Homework		
13	13.1 13.2 13.3					
14	14.1 14.2 14.3					
15	15.1 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
Scientific report	20%	Each Topic	Each week	Manually, online on Moodle platform, online on Microsoft Teams platform
Homework	10%	Each Topic	Each week	Manually, online on Moodle platform, online on Microsoft Teams platform
Quiz	10%	Each Topic	Each 2 week	In direct lecture, Microsoft Form platform, Microsoft Teams platform
Midterm exam	20%	Biochemical calculation, Biochemical preparations, pH meter, Spectrophotometer, & Standard Curve using Spectrophotmeter	At Midterm	In direct lecture.
Final term exam	40%	All of the course topics	At the final of semester	Microsoft Form platform, Microsoft Teams platform

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

Laboratory must be equipped with biological Macromolecule
Laboratory must be equipped with instrument, tools, and chemicals
Students should have a computer or Smart phone
Students should have an internet connection
Students should have an Account on Zoom platform, Moodle platform, Microsoft Teams platform, Facebook Messenger& Microsoft Form platform.

25. Course Policies:

A- Attendance policies:
Absence from lectures should not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course.

B- Absences from exams and submitting assignments on time:
You should talk to your instructor as soon as possible if you miss an exam. All such cases will be dealt with according to the rules outlined in your student handbook, the assignment and report must deliver on time.

C- Health and safety procedures:
1-Wear a lab coat to protect your clothing during the laboratory session, (No Entering to the Lab without Wearing Lab Coat).
2- Deal with machines, glass wares& chemicals very carefully.

D- Honesty policy regarding cheating, plagiarism, misbehavior:
All violations pertaining to cheating, plagiarism, misbehavior will be dealt with in accordance to the rules outlined in your student handbook.

E- Grading policy:
All exams are made up of the following question forms: labelling questions, short essay questions, "fill in the blank" questions, and calculation and preparation question.
20% Scientific report
10% Quiz
10% Homework
20% Midterm exam
40% Final term exam

F- Available university services that support achievement in the course:
Computer Lab.
Data show projector.
Lab instrument like pH, Blender, Centrifuge and Spectrophotometer.
Chemicals, Biological Macromolecule samples, glass ware& disposables material.
White board, White board pen.
Moodle platform access for teacher and students, Microsoft Form platform access for teacher and students, &Microsoft Teams platform access for teacher and students.

26. References:

A- Required book(s), assigned reading and audio-visuals:
"Biochemistry Lab Manual", by Amirah Al-Riyati, Last edition, 2020

B- Recommended books, materials and media:

" Biochemistry" by Voet**,** 4th edition, 2009, john Wiley and Sons, New York, USA

"**Principles of Biochemistry"** by David L. Nelson and Michael M. Cox,7th Edition,2017, W H. Freeman and Company, New York, USA

27. Additional information:

None

Name of Course Coordinator **Ms. Amirah Mohammad Al-Riyati** Signature: ---------- Date: ------

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

Head of Department: **Dr. Zeinab Arabeyyat** Signature: ----------

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

Dean: **Prof. Riyad Manasrah** Signature: ----------