



ASU
APPLIED SCIENCE PRIVATE UNIVERSITY



Amman- Jordan

عمان - الأردن



كلية الصيدلة
Faculty Of Pharmacy



The Bachelor Degree in Pharmacy
of Applied Science Private
University is Certified by the
Accreditation Council for Pharmacy
Education



المستوى الذهبي

جامعة كل العرب

Faculty : Pharmacy

Department: Clinical pharmacy and Therapeutics

Academic Year: 2020-2021

Semester: First

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite	Concurrent course
Practical Biochemistry	1 hour	0906213	Biochemistry-I 0906212	Biochemistry I 0906212

Coordinator Name	Lecturer/s	Room No.	E-mail	Course website	Office Hours
Dr. Raja'a Al-Qudah	Dr. Raja'a Al-Qudah	4214	Ra_alqudah@asu.edu.jo	http://bio.asu.edu.jo/bio/index.jsp	As shown on individual lecturer time table
	Dr.Husam Abazid	4121	h_abazid@asu.edu.jo		
	Dr. Samar Khater	4210	samar_ktr@asu.edu.jo		

Course Description:

This course is designed to provide second year pharmacy students with basic skills and methods in biochemistry including techniques for of distinguishing, identification and quantitation of biomolecules such as amino acids, proteins, enzymes, carbohydrates and lipid.

Course objectives:

1. To help students acquire basic working knowledge of biochemistry espically the practical aspects of this course.
2. To familirazie students to basic techniques used in biochemistry.

Intended Learning Outcomes:

Following the successful completion of this course, the student should be able to:

A. Knowledge and understanding:

- A1. Be familiar with and be able to follow the saftey procedures and lab instructions.
- A2. Identify and effeciently use the glasswares and equipments used in the lab
- A3. Differentiate between accuracy and percision concepts in lab glassware .
- A4. Understand the concept of pKa values of acids and the determination of itsvalue.

.Apply the concept of buffer solution and their preparation, solving the problems to new situations by using the Hendersson-Haselbach equation.



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A6. Be familiar with and perform the different qualitative tests used for identification of different amino acids.

A7. Apply the concept of thin layer chromatography techniques and rules in separation of molecules and perform it in the separation of a mixture of amino acids.

A8. Understand the concept for some of the techniques used in the separation of proteins such as salting out and isoelectric point precipitation, and study the different factors that affect the structure of proteins.

A9. Understand the basics of spectrophotometry and use the spectrophotometer to determine the concentration of protein in samples using the Biuret method.

A10. Understand and apply the principles of measuring the activity of an enzyme and study the effect of several factors on enzyme activity.

A11. Understand and apply tests to identify different carbohydrates including: monosaccharides, disaccharides and polysaccharides.

A12. Identify properties of lipids and fat and Perform experiments on the chemical properties of lipid such as solubility, saponification and acid value.

B. Subject specific skills:

B1. Determination of accuracy and precision.

B2. Calculations for choosing suitable buffers, and their effect during reactions, how to prepare buffers according to certain concepts.

B3. Techniques for identification and separation of biomolecules.

B4. Basic spectrophotometric methods and standard curves.

C. Cognitive and Intellectual skills: N/A

D. Transferable Skills:

D1. Proper use of lab glassware and pipettes.

D2. Team work skills with other students.

D3. Drawing graphs of relationships between 2 variables.

Teaching and Learning Methods:

Development of ILOs is promoted through the following **teaching and learning methods:**

ILOs	Learning Methods	Evaluation Methods
A to B and D	Short lectures at the beginning of each lab session (to explain the theoretical knowledge for each topic),	Quizzes Reports Personal evaluation Final exam (practical & theoretical)
A to B and D	Practical experiments performed by student at each lab session	Quizzes Reports Personal evaluation Final exam (practical & theoretical)



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Course Content:

Week	Date	Lecture number	Topic's Details	Exams/ /quizes/ holidays	Main Reference (chapter)	ILOs achieved
1	18-22/10/2020	-	No lab session			
2	25-29/10/2020	Lab 1	- Safety rules and general lab instructions. - Accuracy and Precision of Laboratory Glassware		Manual of Practical Biochemistry	A1, A2, A3, B1 D1, D2
3	1-5/11/2020	Lab 2	Measurement of pH of solutions and determination of the pKa values of weak acids			A4, B2, D1, D2, D3
4	8-12/11/2020	Lab 3	Preparation of Buffers			A5, B2, D1, D2
5	15-19/11/2020	Lab 4	Qualitative tests for Identification of amino acids			A6, B3, D1, D2
6	22-26/11/2020	Lab 5	Chromatography: the use of Thin Layer Chromatography for separation of amino acids.			A7, B3, D1, D2
7	29/11-3/12/2020	Lab 6	Isolation and separation of proteins Denaturation of proteins by different methods, Part I			A8, B3 D1, D2
8	6-10/12/2020	Lab 7	Isolation and separation of proteins Denaturation of proteins by different methods, Part II			A8, B3 D1, D2
9	13-17/12/2020	Lab 8	Biuret Protein Assay			A9, B4 D1, D2, D3
10	20-24/12/2020	Lab 9	Factors affecting enzyme activity: The effect of temperature, pH, enzyme and substrate concentrations			A10 D1, D2, D3
11	27-31/12/2020	Lab 10	General reactions of Carbohydrates, part I			A11, B3 D1, D2
12	3-7/1/2021	Lab 11	General reactions of Carbohydrates, part II			A11, B3 D1, D2
13	10-14/1/2021	Lab 12	Lipids			A12, D1, D2
14			Final practical Exams			
15/16						

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Grade Distribution:

Your course grade will be determined by the following:

<i>Assessment Method</i>	<i>% of Final Grade</i>	<i>Due Date</i>
Written Reports	10	
Participation, conduct and lab work	10	
Quizzes	30	
Final exam	50	

* Provisional dates are scheduled in the course schedule. Each instructor will announce the exact date for the quizzes of each section at the beginning of the semester.

Distribution of examination material (may vary depending on material included):

Example:

Course Policies:

A- Attendance policies:

Attendance: Mandatory.

First warning – with 1 absences

Last warning – with 2 absences

Failing in the subject – with 3 absences

B- Absences from exams and handing in assignments on time:

Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures: NA

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

1. Failing the subject he/she cheated at
2. Failing the other subjects taken in the same course
3. Not allowed to register for the next semester. The summer semester is not considered as a semester

E- Grading policy:

Exams and Quizzes.

Quizzes: 30 points

Lab work & lab reports::20 points

Final Exam: 50 points

Total: 100 points

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

Classrooms, internet classes, ASU online web site (messages, assignment, and notes)



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24. Required equipment:

equipment needed for biochemistry experiments as available in the biochemistry laboratory in the faculty

Make-up Exam Policy:

Make-up exams will be offered for valid reasons. They may be different from regular exams, both in content and format.

Textbooks information:

Main Reference: Manual of Practical Biochemistry, 2020-2021

Other References:

Additional information:

No side talks during lecture

No mobile phones during lecture

Entering the lecture theatre after the instructor is not permitted.

Homework should be done by students independently and will be asked at the exams

Course Material and Announcements

Students need to use the e-learning page at the ASU website in order to get all lecture handouts and guidelines which will be uploaded there.

In addition, course related announcements and exam results will be posted on the ASU online AND/OR course website and is the responsibility of each student to check the sites regularly.

Name of Course Coordinator: Dr. Raja'a Al-Qudah **Signature:**

Date: 5-10-2020

د. ريم أبو تايه

Head of curriculum committee: Dr. Reem AbuTayeh **Signature:**

Head of Department: Dr. May Abu-Taha **Signature:**



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Dean: Prof. Iman Basheti Signature:

Copy to:

Head of Department
Head of curriculum committee
Course File