

فندجبل من أردن العرب جامعة للعرب

**Faculty :** Pharmacy  
**Department:** Clinical Pharmacy and Therapeutics  
**Academic Year:** 2018 - 2019  
**Semester :** Second

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite	Concurrent course
Clinical Biochemistry	2	0906428	0906222 Biochemistry II 0906312 Pathology & Pathophysiology	Clinical Biochemistry laboratory

Coordinator Name	Lecturer/s	Room No.	E-mail	Course website	Office Hours
Dr. Ahmad Alsayed	Dr. Ahmad Alsayed	4106	a_alsayed@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		

**Course Description:**

To understand the biochemical consequences of the common disorders on different body organs and functions. To gain knowledge about the role of clinical chemistry in investigations carried out for diagnosis, screening, monitoring, and management in health and / or disease. To understand the biochemical tests used in clinical chemistry and the interpretation of the results.

**Course objectives:**

Upon successful completion of the course:

1. The student should be able to deal with several biochemical tests done for healthy people or patients for disease diagnosis, screening, monitoring, and management.
2. The student will be able to interpret the results of these tests.



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**Intended Learning Outcomes:**

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

**A. Knowledge and understanding:**

- A1. Explore concept of clinical biochemistry and its role in clinical medicine.
- A2. Discuss the possible biochemical changes that may occur in diseases.
- A3. Appreciate the different laboratory analyses requested by the clinician.

**B. Subject specific skills:**

- B1. Apply skills to solve patient cases and laboratory results
- B2. Suggest the required biochemical tests for the major and most frequent illnesses.

**C. Cognitive and Intellectual skills:**

- C1. Analyse the biochemical results of patients and discuss these clinical cases with other members of the medical team.
- C2. Discuss biochemical laboratory results and their interpretation.

**D. Transferable Skills:**

Not applicable

**Teaching and Learning Methods:**

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

ILOs	Learning Methods	Evaluation Methods
A1 & A2 & A3	Lectures during which the theoretical aspects are explained	Exams
B1 & B2 & C1 & C2	Discussing practical cases with the student	Exams and class discussion

**Course Content:**

Week	Date	Lecture number	Topic's Details	Exams/ /quizes/ holidays	Main Reference (chapter)	ILOs achieved
1	February	1,2	Biochemical investigations in clinical medicine Uses of biochemical tests, specimen collection, sample		Ref1: Ch. 1	A1, A2, A3

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			analysis, reporting of results, sources of error, interpretation of results, clinical utility of laboratory investigations, clinical audit		
2	March	3,4	<b>Water, sodium and potassium</b> Water and sodium: distribution, homeostasis, depletion, excess, hyponatremia, hypernatremia, potassium homeostasis, hypokalemia, hyperkalemia	Ref1: Ch. 2	A1, A2, B1 & B2
3	March	5,6	<b>Hydrogen ion homeostasis &amp; blood gases</b> Buffers in human body, clinical & lab assessment of hydrogen ion status, disorders of hydrogen ion homeostasis, oxygen transport and its disorders	Ref1: Ch. 3	A1, A2, B1 & B2
4	March	7-8	<b>The kidneys</b> The biochemical investigation of renal function, renal disorders: acute and chronic renal failur, proteinuria and nephrotic syndrome, renal tubular disorders, urinary calculi	Ref1: Ch. 4	A2, A3, B1, B2, C1 & C2
<b>FIRST EXAM</b>					
5	April	9-10	<b>The liver</b> Bilirubin matabolism, the biochemical assessment of liver function, liver disease	Ref1: Ch. 5	A2, A3, B1, B2, C1 & C2
6	April	11-12	<b>Disorders of carbohydrate metabolism</b> Measurement of glucose conc., diabetes mellitus, metabolic complications of DM, hypoglycemia	Ref1: Ch. 11	A2, A3, B1, B2, C1 & C2
7	April	13-14	<b>The gastrointestinal tract</b> The stomach, the pancrease, the small intestine, disorders of intestinal function, GIT hormones	Ref1: Ch. 6	A2, A3, B1, B2, C2

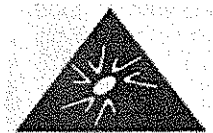
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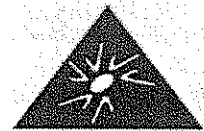
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8	April	15-16	<b>The hypothalamus &amp; pituitary gland</b> Anterior pituitary hormones and their measurement, disorders of anterior pituitary function, posterior pituitary hormones	Ref1: Ch. 7	A2, A3, B1, B2, C2
<b>SECOND EXAM</b>					
9	May	17,18	<b>The adrenal gland</b> Adrenal steroid hormone biosynthesis, measurement of adrenal steroid hormones, disorders of adrenal cortex, disorders of adrenal medulla	Ref1: Ch. 8	A2, A3, B1, B2, C2
10	May	19,20	<b>The thyroid gland</b> Thyroid hormones, test of thyroid function, disorders of the thyroid	Ref1: Ch. 9	A2, A3, B1, B2, C1 & C2
11	May	21,22	<b>The gonads</b> Disorders of male gonadal function, disorders of female gonadal function, pregnancy	Ref1: Ch. 10	A2, A3, B1, B2 & C2
12	May	23,24	<b>Lipid, lipoprotein and cardiovascular disease</b> Triglycerides, cholesterol and phospholipids, lipoprotein metabolism, reference range and laboratory investigations, disorders of lipid metabolism, myocardial infarction, heart failure, hypertension.	Ref1: Ch. 14	A2, A3, B1, B2 C1 & C2
13	May	25,26	<b>Disorders of hemoproteins, porphyrins and iron</b> Hemoprotein, porphyrins, iron	Ref1: Ch. 17	A2, A3, B1, B2 C1 & C2
14 & 15	June	27,28	<b>Calcium, phosphate and magnesium</b> Bone, plasma calcium, calcium regulating hormones, calcium and phosphate homeostasis, disorders of calcium, phosphate and magnesium metabolism	Ref1: Ch. 12	A2, A3, B1, B2 C1 & C2
16	<b>FINAL EXAM</b>				



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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>
First exam	25	To be announced
Second exam	25	To be announced
Final exam	50	To be announced

\* 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 6 absences

Last warning – with 8 absences

Failing in the subject – with 10 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.

First Exam: 25 points

Second exam: 25 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:**

**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:**

1. Clinical Chemistry. William J Marshall; Stephen K Bangert. 8th Edition. Mosby (Elsevier). 2016

**Other References:**

1. Clinical Biochemistry. Nessar Ahmed. Second Edition. 2017. Oxford university press
2. Lecture notes: Clinical Biochemistry. Geoffrey Beckett, Simon Walker, Peter Rae, Peter Ashby. 9<sup>th</sup> Edition. 2013. Wiley-Blackwell
3. Clinical Chemistry: Principles, Techniques, and Correlations. 7<sup>th</sup> Edition. Michael L. Bishop, Edward P. Fody, Larry E. Schoeff. Lippincott Williams & Wilkins

**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 guideline 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. Ahmad  
Alsayed

Signature:

د. أحمد السيد

Date:

26-2-  
2019

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Fax: \_ Tel :5609999

Form code: UF 130/1

24/233 Resolution number

Accreditation date: 31/01/2018



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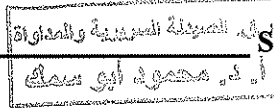
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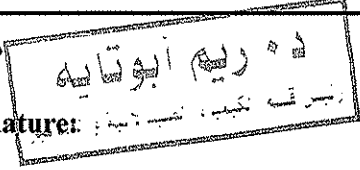
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Head of curriculum committee: \_\_\_\_\_



Signature: \_\_\_\_\_



Head of Department: \_\_\_\_\_

Signature: \_\_\_\_\_

Dean: \_\_\_\_\_

Signature: \_\_\_\_\_

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