

توصيف مساق. 1 Clinical Biochemistry
كيمياء حيوية سريرية 1 (0406344)

1. معلومات مدرس المساق (Instructor)

اسم (مدرس / منسق) المساق :	Dr. Amal Hisham Uzrail
الساعات المكتتية :	د. أمل هشام عزريل حد - ثل - خ: 12 - 2
رقم المكتب والرقم الفرعي :	
البريد الإلكتروني :	amaluzrail@aabu.edu.jo
مساعد البحث والتدريس/المشرف/الفني (إن وجد):	الاء سعيد

2. وصف المساق (Course Description)

This course is an introduction to general fundamentals and principles of clinical bio-analytical chemistry. It is a combined lecture and laboratory course covering methods of analysis as well as the biochemical components of body fluids. Topics include analysis of blood electrolytes, blood gases, amino acids, plasma enzymes, proteins, carbohydrates, and lipids. Quality control and assurance are also covered in this course.

3. بيانات المساق (Course Title)

رقم المساق: 406344	اسم المساق: كيمياء حيوية سريرية 1	المستوى: الثالث
طبيعة المساق: نظري	المتطلب السابق: (406342) كيمياء حيوية عامة	وقت المحاضرة: 1-12
العام الجامعي: 2020 / 2021	الفصل الدراسي: الثاني	عدد الساعات الدراسية: 2

4. أهداف المساق (Course Objectives)

أ-	Learn about various biochemical components (electrolytes, acid- base, amino acids, proteins, enzymes, lipids, carbohydrates, and non-protein nitrogen compounds) in human body fluids, and understand their biochemistry, physiology, and clinical significance.
ب-	To enable the correct use of basic equipments and supplies and to achieve an understanding of fundamental concepts critical to any bio-analytical procedure.
ج-	To learn clinical chemistry procedures that yield accurate and precise information that aid in patient's diagnosis
د-	To provide basic information about the quality control, quality assurance, and method evaluation

To describe and discuss different units of measurements used to assess various biochemical analytes of clinical significance	ر
To discuss safety in the clinical bio-analytical chemistry laboratories	ز

5. مخرجات التعلم (Intended Student Learning Outcomes)
(المعرفة والمهارات والكفايات)

يفترض بالطالب بعد دراسته لهذا المساق أن يكون قادرا على:

1. Understand the theory and Knowledge in clinical chemistry that is needed for interpretation of test results in case of health and disease.
2. Discuss the basic disorders of the different organs and define which laboratory tests may be performed to diagnose them.
3. Understand basic laboratory quality control concepts and apply principles of safety regulations during testing.
4. Enhance student's creative and innovative thinking skills through "brainstorm" questions.
5. Use a wide range of idea based on their knowledge in this course to suggest research method related to chemistry and apply that on different scientific fields

6. محتوى المساق (Course Content)

الموضوع	الأسبوع
<ul style="list-style-type: none"> • Introduction to clinical biochemistry 	الأول
<ul style="list-style-type: none"> • Specimens collection and handling. • Types of specimens for chemical analysis and categories of clinical biochemistry tests. 	الثاني
<ul style="list-style-type: none"> • Calculations and Units of measurements • Methods used in chemical pathology laboratory • Test result interpretation • Basic statistics 	الثالث
<ul style="list-style-type: none"> • Quality control assurance for chemical pathology laboratory • Precision and accuracy of biochemical tests 	الرابع
<ul style="list-style-type: none"> • Fluid-electrolyte basic concepts • Disorders & clinical laboratory testing 	الخامس
<ul style="list-style-type: none"> • Acid-base concepts • Disorders and clinical laboratory testing 	السادس

<ul style="list-style-type: none"> • Calcium and phosphate homeostasis • Disorders and clinical laboratory testing 	السابع
Midterm exam	الثامن
<ul style="list-style-type: none"> • Carbohydrate metabolism disorders 	الثامن
<ul style="list-style-type: none"> • Lipid metabolism disorders 	التاسع
<ul style="list-style-type: none"> • Amino-acid metabolism disorders • Metabolic disorders of protein 	العاشر
<ul style="list-style-type: none"> • Clinical enzymology and biomarkers 	الحادي عشر
<ul style="list-style-type: none"> • Renal function tests 	الثاني عشر
<ul style="list-style-type: none"> • Urinalysis • Proteinuria 	الثالث عشر
<ul style="list-style-type: none"> • Liver function tests 	الرابع عشر
<ul style="list-style-type: none"> • Revision 	الخامس عشر
الامتحان النهائي	السادس عشر

1. استراتيجيات التعليم والتعلم وطرق التقويم
(Teaching and learning Strategies and Evaluation Methods)

ت	مخرجات التعلم	استراتيجيات التدريس	أنشطة التعلم	نوع التقويم/القياس (امتحان/عروض صفية/مناقشة/واجبات)
1	Understand the theory and Knowledge in clinical chemistry that is needed for interpretation of test results in case of health and disease.	Brain storming, discussion	lecture	Exam/quiz
2	Discuss the basic disorders of the different organs and define which laboratory tests may be performed to diagnose them.	Brain storming, discussion	Lecture	Exam/quiz
3	Understand basic laboratory quality control concepts and apply principles of safety regulations during testing	Brain storming, discussion	lecture	Exam/quiz

Exam/assignment	Lecture	Group discussion brain storming	Enhance student's creative and innovative thinking skills through "brainstorm" questions	4
Exam /assignment	Lecture	Group discussion and brain storming	Use a wide range of idea based on their knowledge in this course to suggest research method related to chemistry and apply that on different scientific fields	5

2. تقييم الطلبة (Assessment)

توزيع الدرجات لكل أسلوب	توقيت التقييم	الأساليب المستخدمة
10	خلال الفصل	1- أعمال الفصل: (تقرير، وظائف، حضور)
40	الأسبوع لثامن	2- امتحان تحريري Midterm
50	أسبوع الامتحانات النهائية	3- امتحان تحريري نهائي

3. الكتاب المقرر (Text Book) Theory

Clinical Biochemistry: An illustrated color textbook	المرجع الرئيس
Michal Murphy, Rajeev Srivastava and Kevin Deans	المؤلف
Elsevier Health Company	الناشر
2019	السنة
6 th Edition	الطبعة
	الموقع الالكتروني للمرجع

3. الكتاب (Text Book) الإضافي Theory

Clinical Chemistry: Techniques, Principles, Correlations	المرجع الرئيس
Bishop. ML, Fody., E.P. Schoeff, LE ,	المؤلف
Lippincott Williams & Wilkins	الناشر
2010	السنة
Sixth Edition	الطبعة
ISBN: 978-0781790451	الموقع الالكتروني للمرجع

4-المراجع الإضافية (References) (وتشمل الكتب والبحوث المنشورة في الدوريات او المواقع الالكترونية)

Clinical Biochemistry: Fundamentals of Biomedical Science. (2017). Authors: Nessar Ahmad. 2th edition, Publisher: Oxford University, UK.	-1
Clinical Biochemistry (2016). Authors: Vladimir Bartos, MilanDastych and Tomas Frank. First edition, Publisher: Charles University, UK	-2
Introduction to Clinical Biochemistry: Interpreting blood results (2010). Authors: Graham Basten. First edition, Publisher: Ventus Publishing Aps	-3
Tietz, N.W.; Fundamentals of Clinical Chemistry. ISBN 0721688624 - Publisher: Saunders - Release date: 1986.	-4
Marshall, W.J., Bangert, S.K.; Clinical Chemistry 6th edition, ISBN 0-7234-3328-3 - Publisher: Mosby, Release date: 2008.	-5
Christenson, R.H., Gregory, L.C., Johnson, J.L.; APPLETON & LANGES OUTLINE REVIEW CLINICAL CHEMISTRY 1st edition, ISBN 0070318476. Publisher: McGraw-Hill Medical Publishing Division-Releaseate 2001.	-6