

American University of Beirut
Faculty of Medicine
Department of Pathology and Laboratory Medicine
LABM 202
(Clinical Chemistry II)

Spring Semester AY/2023-2024

<i>Name</i>	Dr. Rose Daher Dr. Nada Assaf	Course Credits: 3
Office Hours:		Meeting Location: Tue - VanDyck Hall Auditorium Wed – DTS – TBL room 1 st Floor
Office Location:	AUBMC 3 rd Floor, phase II	Meeting Time: 03:30 – 4:45 pm Tue, & 12:00 – 01:15 pm Wed
Extension	5223(Daher) / 5204(Assaf)	
E-mail	rd02@aub.edu.lb na167@aub.edu.lb	

Course Description:

Clinical Chemistry courses I and II are designed to acquaint students with fundamentals of clinical chemistry, including basic physiological and biochemical processes, instrumentation, principles of analytical procedures, and methods used for reliable determination of clinical analytes. The correlation of laboratory results with clinical manifestation is also an integral part of these courses. LABM202 course is a continuation of LABM201 and will cover some aspects of routine clinical chemistry such as proteins, enzymes, lipids and lipoproteins, calcium metabolism, liver function tests as well as some advanced topics (hormones, therapeutic drug monitoring, toxicology) and specialized techniques like chromatography (HPLC & GC/MS) etc.

Specific Learning Objectives (LOs):

Upon completion of this course, students should be able to:

- LO1. Comprehend the principles of analytical techniques used in Clinical Chemistry laboratory.
- LO2. Know the procedures used to set-up, assess, and maintain the quality of laboratory analysis.
- LO3. Be aware of the physiological and pathological processes that are affecting biochemical investigations done on samples from patients.
- LO4. Realize the use of the results of Clinical Chemistry analysis in the diagnosis and management of common medical disorders.

Course Content		
Date	Topic	Lecturer
Tue Jan 23	Nonprotein nitrogen compounds - Pathophysiology	Dr. N. Assaf
Wed Jan 24	Uric Acid	Dr. N. Assaf
Tue Jan 30	Lipids I	Dr. N. Assaf
Wed Jan 31	Lipids II	Dr. N. Assaf
Tue Feb 06	Lipids III	Dr. N. Assaf
Wed Feb 07	Calcium, Phosphorous, Magnesium	Dr. N. Assaf
Tue Feb 13	Calcium, Phosphorous, Magnesium	Dr. N. Assaf
Wed Feb 14	Liver Function Tests	Dr. N. Assaf
Tue Feb 20	Liver Function Tests	Dr. N. Assaf
Wed Feb 21	Introduction to hormones	Dr. N. Assaf
Tue Feb 27	Thyroid Function tests	Dr. N. Assaf
Wed Feb 28	Proteins – Introduction & Measurement Electrophoresis – Technique / Interpretation	Dr. R. Daher
Tue Mar 05 3:30 – 4:45 pm	Quiz I – (Dr. Assaf's lectures Jan23 - Feb27)	Dr. N. Assaf
Wed Mar 06	Immuno-electrophoresis / Immunofixation M-components in Pathological Conditions	Dr. R. Daher
Tue Mar 12	Individual Proteins: Clinical Significance	Dr. R. Daher
Wed Mar 13	Capillary EP / Immunotyping	Dr. R. Daher
Tue Mar 19	Proteins – Urine / CSF	Dr. R. Daher
Wed Mar 20	Enzymes – Introduction Activity determination	Dr. R. Daher
Tue Mar 26	Enzymes Clinical significance: Cardiac, Liver, Pancreatic	Dr. R. Daher
Wed Mar 27	Tumor Markers	Dr. R. Daher
Tue Apr 02 3:30 – 4:45 pm	Quiz II - (Dr. Daher's lectures Mar 06 - 26)	Dr. R. Daher
Wed Apr 03	Theory of Chromatography High Performance Liquid Chromatography	Dr. R. Daher
Tue Apr 09	Gas Chromatography / Mass Spectrometry	Dr. R. Daher
Wed Apr 10	<i>Holiday</i>	
Tue Apr 16	Chromatography Problems	Dr. R. Daher
Wed Apr 17	Therapeutic Drug Monitoring	Dr. R. Daher
Tue Apr 23	Introduction and Analytical Techniques in Toxicology	Dr. R. Daher
Wed Apr 24	Review session	Dr. R. Daher
T.B.A.	Quiz III (Dr. Daher's lectures Mar 27 - Apr 24)	Dr. R. Daher

Evaluation method: three quizzes

Description of Assessment methods, Due Dates and Corresponding Learning Objectives

Assessment method	Date	LOs covered	Grade percentage
Quiz I (Covers lectures of Dr. Assaf from Jan 23 to Feb 27)	Tue Mar 05	<i>LO1, LO2, LO3, LO4</i>	44% (11/25)
Quiz II (Covers lectures of Dr. Daher from Feb 28 to Mar 26)	Tue Apr 02	<i>LO1, LO2, LO3, LO4</i>	28% (7/25)
Quiz III (Covers lectures of Dr. Daher from Mar 27 to Apr 24)	<i>End of semester T.B.A.</i>	<i>LO1, LO2, LO3, LO4</i>	28% (7/25)
Quizzes II & III 56% (14/25).			

Proportion of each quiz in the final grade might be subject to change.

You must always have your **own ruler and scientific calculator** during the **exams**.

Recommended References / Books:

- Moodle course material and recordings of the lectures through Webex will be available and uploaded for students' review.
- Clinical Chemistry: Techniques, Principles, Correlations. Ninth Edition. Bishop, Fody, Siclen, Mistler, Moy. Jones & Bartlett Learning. ISBN 978-1-2842-3886-0, 2023.
- Any other clinical chemistry book available in the Library like: Teitz, Kaplan, Bishop

Course Policies:

1. Attendance: you are expected to attend all classes and participate in class activities. If you miss a class, it is your responsibility to make up for the material missed and inquire about any announcements made. **Attendance will be taken during each session, and if you miss more than one fifth of class sessions you are subject to withdrawing from the course with a W grade. Please refer to the AUB catalogue.**
2. Exams: Examinations must be taken as scheduled and **mode of delivery will be announced whether on-line or live - in person according to the COVID-19 situation later**. Make up exams will not be given unless a valid excuse is provided. Only authorized medical reports will be accepted.

3. Withdrawal date: Please observe withdrawal dates set by the Registrar's Office.

AUB Policies and other General Notes:

Academic integrity:

Education is demanding and you need to properly manage your time. Do not hesitate to use the resources around you but do not cut corners. Cheating and plagiarism will not be tolerated. Review the Student Code of Conduct and familiarize yourself with definitions and penalties. Cheating might earn you a failing mark on the assignment, at the very least. You might fail the course in which you cheated, be warned, suspended or expelled from University and a permanent mention of the disciplinary action might be made in your student records. If you're in doubt about what constitutes plagiarism, ask your instructor because it is *your* responsibility to know. Remember that the American University of Beirut has a strict anti-cheating and anti-plagiarism policy. Do not become a lesson to others. For further information, kindly visit AUB's Policies and Procedures or <http://pnp.aub.edu.lb/general/conductcode>.

Students with Disabilities:

If you have a disability, for which you may request accommodation in AUB classes, consult the website for more information and make arrangements with the Coordinator (http://www.aub.edu.lb/sao/Pages/Students_20with_20Special_20Needs.aspx). Also, please see the instructor of this course privately in regard to possible support services that can be provided to you.

Accessible Education Office (AEO):

The Accessible Education Office (AEO) coordinates academic accommodations and services for all eligible AUB students with disabilities (such as ADHD, learning difficulties, mental health conditions, chronic or temporary medical conditions, and others). If you have a disability for which you wish to request accommodations at the department, faculty or university level, please contact AEO as soon as possible. Once you register with our office, we will assist you in receiving appropriate accommodations and will liaise with your instructors and any related entity to best support your needs. AEO is located in West Hall room 314, and can be reached by phone at 1-350000 ext. 3246 or by email: accessibility@aub.edu.lb. Information about our services can be found at: <https://www.aub.edu.lb/SAO/Pages/Accessible-Education.aspx>

Non-Discrimination- Title IX- AUB

AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University's non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced

discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University's Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix. To report an incident, contact the University's Title IX Coordinator Trudi Hodges at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via EthicsPoint at www.aub.ethicspoint.com.