

*American University of Beirut*  
Faculty of Medicine  
Department of Pathology & Laboratory Medicine  
Course Number: LABM231  
**(Clinical Laboratory Quality Systems)**

Spring Semester AY/2023-2024

<b>Faculty:</b>	Dr. Rose Daher (coordinator) Dr. George Araj Dr. Elizabeth Baz Dr. Rami Mahfouz	<b>Course Credits:</b>	1 Credit
<b>Office Hours:</b>		<b>Meeting Location:</b>	Van Dyk Room 201
<b>Office: Location:</b>	AUBMC 3 <sup>rd</sup> Floor Facing E320	<b>Meeting Time:</b>	<b>Thursday: 4:00 – 4:50 pm</b>
<b>Extension:</b>	5223		
<b>E-mail</b>	<a href="mailto:rd02@aub.edu.lb">rd02@aub.edu.lb</a>		

**Course Description:**

This course is intended to give Medical Laboratory Sciences students a thorough understanding of the quality systems used for implementation of total quality management in the clinical laboratories. The course covers all the basic elements and tools required to implement the quality system essentials across all phases of the laboratory workflow: preanalytical, analytical, postanalytical. In addition, it will include focused lectures related to quality and safety standards required in specialized areas such as blood bank, clinical microbiology, and molecular diagnostics. Practical examples from the laboratory setting will be part and parcel of the lecturers to help students relate theory to practice.

**Specific Learning Objectives (Los):**

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

- LO1. Understand the quality requirements to properly and safely operate a laboratory in all phases: preanalytical, analytical, and postanalytical processes.
- LO2. Become aware of the basic documents needed in the laboratory.
- LO3. Describe the basic laboratory statistics used for evaluation of quality control data and method comparisons.
- LO4. Be familiar with the elements of a safety program that is required in a clinical laboratory.
- LO5. Understand the value of internal quality control and external quality assessment in ensuring precise and accurate release of laboratory results.
- LO6. Understand the principles and tools of performance improvement as applied to Clinical Laboratories.

<b>Course Content:</b>		
<b>Topic</b>	<b>Date=Thursday (time = 4:00 – 4:50 pm)</b>	<b>Lecturer</b>
<b>Introduction to Quality Systems</b>	January 18	Dr. R. Daher
<b>Elements of a Quality System</b>	January 25	Dr. R. Daher
<b>Patient Test Management</b>	February 01	Dr. R. Daher
<b>Quality Control Statistics</b>	February 08	Dr. R. Daher
<b>Internal Quality Control</b>	February 15	Dr. R. Daher
<b>External Quality Control and Proficiency Surveillance</b>	February 22	Dr. R. Daher
<b>Method Evaluation</b>	February 29	Dr. R. Daher
<b>Introduction to six-sigma metric</b>	March 07	Dr. R. Daher
<b>Quiz I</b> (Covers the lectures from January 18 to March 07)	<b>T.B.A.</b>	Dr. R. Daher
<b>Safety Program</b>	March 14	Dr. R. Daher
<b>Total Quality Management: Principles and Tools</b>	March 21	Dr. R. Daher
<b>Quality Control in Molecular Diagnostics</b>	March 28	Dr. R. Mahfouz
<b>Quality Control in the Clinical Microbiology Laboratory</b>	April 04	Dr. G. Araj
<b>Holiday</b>	April 11	
<b>Safety in the Clinical Microbiology Laboratory</b>	April 18	Dr. G. Araj
<b>Quality Management in the Blood Bank</b>	April 25	Dr. E. Baz
<b>Quiz II</b>	<b>T.B.A.</b>	Dr. R. Daher
<b>Total hours</b>	<b>14</b>	

### Evaluation method: two quizzes

Description of Assessment methods, Due Dates and Corresponding Learning Objectives

Assessment method	Date (tentative)	LOs covered	Grade percentage
<i>Quiz I</i>	<i>In March</i>	<i>LO1, LO2, LO3, LO5</i>	<i>54% (8/14)</i>
Covers the lectures from January 18 to March 07.			
<i>Quiz II</i>	<i>End of semester T.B.A.</i>	<i>LO4, LO5, LO6</i>	<i>46% (6/14)</i>
Covers the lectures from March 14 to April 25.			

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

### Recommended References / Books:

- Moodle course material per instructor.
- 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 (3 out of the 14 lectures) 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 in person using Moodle. 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](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](mailto: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](http://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](mailto:titleix@aub.edu.lb). An anonymous report may be submitted online via EthicsPoint at [www.aub.ethicspoint.com](http://www.aub.ethicspoint.com).