



**Jordan University of Science and Technology**  
**Faculty of Applied Medical Sciences**  
**Allied Medical Sciences Department**

LM443 Diagnostic Molecular Biology And Cytogenetic Practical - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

1 Credit Hours. Is a "hands-on" laboratory course designed to enable students to gain basic skills in molecular diagnosis and cytogenetics. This type of course typically covers a wide range of techniques essential for studying DNA, RNA and protein, which include isolating genomic DNA from various biological samples, quantifying DNA concentration, and assessing DNA quality, electrophoresis of nucleic acids, Polymerase Chain Reaction (PCR) applications in molecular diagnostics: including quantitative PCR (qPCR), reverse transcription PCR (RT-PCR), multiplex PCR, ARMS-PCR, restriction fragment length polymorphisms (RFLPs) and real-time PCR for detection and quantification of nucleic acids, DNA sequencing, DNA cloning, cell culture, chromosomal staining and analysis. The course may also emphasize critical thinking, experimental design, data analysis, and interpretation, preparing students for further studies in molecular biology, genetics, cytogenetics and biotechnology, or related fields.

**Teaching Method:** On Campus

**Text Book**

<b>Title</b>	Molecular Diagnostics: Fundamentals, Methods, and Clinical Applications, 2019
<b>Author(s)</b>	Lela Buckingham and Maribeth L. Flaws
<b>Edition</b>	3rd Edition
<b>Short Name</b>	1
<b>Other Information</b>	Lecture recordings and hand-outs are found on the course's e-learning page.

**Instructor**

<b>Name</b>	<b>Dr. ROWIDA AL-MOMANI</b>
<b>Office Location</b>	-
<b>Office Hours</b>	Sun : 09:00 - 10:00 Sun : 14:30 - 15:30 Mon : 08:30 - 09:30 Wed : 11:30 - 12:30 Thu : 09:00 - 10:00 Thu : 11:30 - 12:30
<b>Email</b>	rfalmomani7@just.edu.jo

Instructor	
Name	Dr. MOHAMMAD AL SHBOUL
Office Location	-
Office Hours	Sun : 10:00 - 12:00 Mon : 10:00 - 12:00 Tue : 11:00 - 12:00 Wed : 11:00 - 12:30
Email	maalshboul@just.edu.jo

Class Schedule & Room
<p>Section 1: Lecture Time: Sun : 10:30 - 12:30 Room: LAB 1</p> <p>Section 2: Lecture Time: Sun : 12:30 - 14:30 Room: LAB 1</p> <p>Section 3: Lecture Time: Wed : 14:30 - 16:30 Room: LAB 1</p> <p>Section 4: Lecture Time: Thu : 12:30 - 14:30 Room: LAB 1</p> <p>Section 5: Lecture Time: Thu : 14:30 - 16:30 Room: LAB 1</p>

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Present an understanding of the different molecular technologies used in genetic testing and profiling. [15SLO1] [15L7K1]	15%	Midterm Exam
Perform several experiments utilizing recent molecular technologies. [10SLO1, 10SLO2] [5L7S1, 5L7S2, 5L7S3]	20%	Midterm Exam, Quizzes and reports
Analyze data obtained from different molecular experiments. [5SLO1, 8SLO2, 7SLO3] [8L7S1, 7L7S2, 5L7S3]	20%	Midterm Exam, Quizzes and reports
Practice a safe laboratory setting. [5SLO1, 5SLO4] [10L7S2]	10%	Quizzes and reports
Utilize the lab experience and apply it in research and clinical practice. [5SLO3, 10SLO4] [8L7C3, 7L7C4]	15%	Quizzes and reports
Select proper lab approaches in testing the different samples and research questions. [10SLO3, 10SLO4] [10L7C3, 10L7C4]	20%	Quizzes and reports

Relationship to Program Student Outcomes (Out of 100%)											
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	MSLO1	MSLO2	MSLO3	MSLO4	MSLO5	MSLO6
35	18	22	25								

Relationship to NQF Outcomes (Out of 100%)					
L7K1	L7S1	L7S2	L7S3	L7C3	L7C4
15	14.67	23.67	11.67	18	17

Evaluation	
Assessment Tool	Weight
Midterm Exam	40%
Final Exam	50%
Quizzes and reports	10%

Policy	
Attendance policy	<ul style="list-style-type: none"> <li>* Students are expected to attend at least 80% of lectures.</li> <li>* All absences will be entered electronically into the University site</li> <li>* If absence is more than 20% student will be banned from the course after electronic notification from the university through student e-mail.</li> </ul>
Feedback	Concerns or complaints should be expressed in the first instance to the course instructor. If no resolution is forthcoming, then the issue should be brought to the attention of the Department Chair and if still unresolved to the Dean. Questions about the material covered in the lecture, notes on the content of the course, its teaching and assessment methods can be also sent by e-mail to the course instructor.
Makeup Exams	Any student who did not attend any of the scheduled exams and who requests taking a makeup exam must refer to the Dean's Assistant of the Faculty of Applied Medical Sciences to provide an official excuse letter supporting his absence (Medical report from the JUST medical center, etc.). Once the excuse has been accepted by the Dean's Assistant and the Dean, a student can take the makeup exam at a date no later than ONE week from the original exam date. Students must immediately contact and coordinate with the course instructor, and start the process of excuse acceptance at the Deanship.

Date Printed: 2024-02-28