



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

LM728 Advanced Clinical Chemistry Practical Training 1
First Semester 2021-2022

<b>Course Catalog</b>
3 Credit Hours. Students will have the opportunity to analyze constituents from blood, urine, spinal fluid, and other body fluids. Emphasis will be on the use of advanced instrumentation, preventive maintenance, quality control & assurance procedures, application of theoretical information, and technical competence. Students will also obtain additional experience in specimen collection, processing & management.

<b>Text Book</b>	
<b>Title</b>	Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics
<b>Author(s)</b>	Nader Rifai
<b>Edition</b>	8th Edition
<b>Short Name</b>	Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics
<b>Other Information</b>	Publisher: Elsevier / 2019

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Henry's Clinical Diagnosis and Management by Laboratory Methods.	Henry's Clinical Diagnosis and Management by Laboratory Methods.	Richard A. McPherson, MD and Matthew R. Pincus, MD, PhD	24th Edition	Publisher: Elsevier; 24th edition (June 15, 2021)

<b>Instructor</b>	
Name	Dr. REFAT NIMER
Office Location	-
Office Hours	
Email	rmnimer@just.edu.jo

<b>Class Schedule &amp; Room</b>
Section 1: Lecture Time: Sun, Tue : 08:30 - 12:30 Room: HOSPITAL

<b>Tentative List of Topics Covered</b>		
<b>Weeks</b>	<b>Topic</b>	<b>References</b>
Week 1	Sampling methods and procedures	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 2	Glucose HbA1c , A postprandial glucose (PPG) test, OGTT, Insulin, C-peptide	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Weeks 3, 4	Clinical Urine Tests in spot and 24- hour samples (urea, creatine, uric acid, GFR, total protein, albumin, microalbuminuria, and hormones)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 5	Electrolytes, Ion selective electrode method (ISE)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 6	Enzyme assays, Isoenzyme assays (i.e ALP , CK,..)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 7	Protein Electrophoresis (urine & serum)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .

Weeks 8, 9	Cardiac Tests (Troponin T, Troponin I, Myoglobin, CK-MB), Brain natriuretic peptide (BNP) test	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 10	Lipid Profile Tests (LDL, HDL, Triglyceride, Cholesterol)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 11	Thyroid Function Tests (FT3, TT3, TT4 FT4, TSH)	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Week 12	Quality Control in Clinical Chemistry	From <b>Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics</b> , From <b>Henry's Clinical Diagnosis and Management by Laboratory Methods</b> .
Weeks 14, 15	Case Studies	
Week 16	Reports	

<b>Mapping of Course Outcomes to Program Student Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Describe the fundamental concepts of the procedures and methods used in clinical chemistry [1A, 1C, 1D]	15%	
Distinguish between normal and abnormal clinical chemistry results. [1C, 1D, 1F]	10%	
Correlate results in clinical chemistry tests with possible patient conditions. [1A, 1C, 1F]	10%	
Discuss pre-analytic (pre-examination), analytic (examination), and post-analytic (post-examination) variables encountered in each department of the clinical laboratory. [1A, 1D, 1F]	10%	
Discuss the clinical implications for clinical chemistry tests. [1A, 1C]	10%	
Identify the interfering factors in each test in the clinical chemistry department [1B, 1C, 1D]	10%	
Describe the units utilized in clinical laboratory testing. [1A, 1C]	10%	

Evaluate quality control parameters. [1A, 1D, 1F]	10%	
Demonstrate proper procedures for the collection and analysis of biological specimens. [1A, 1B, 1C, 1D]	15%	

Relationship to Program Student Outcomes (Out of 100%)					
A	B	C	D	E	F
28.75	7.08	28.75	22.08		13.33

Policy	
Statement on Professionalism	Professional behavior is expected of students at all times. Attitude and professional behavior are the minimum criterion for passing this class. Examples of unprofessional behavior include but are not limited to: missing classes, tardiness, lack of attention for a speaker, talking to others during lecture, leaving a lecture before its completion without prior authorization of the instructor, working on other class material during class, and sleeping during class.
Cheating	University regulations will be applied on cases of cheating and/or plagiarism.
Cell phone	The use of a cellular phone is prohibited in classrooms and during exams. The cellular phone must be switched off in class rooms and during exams.
Absences	University regulations will be applied. Students are not allowed to be absent for more than 20% of lectures for any reason or excuse. If a student exceeds the absence limit, he or she will not be allowed to sit for future course exams. (Please review university regulations for more details).
Make-up Exam	Make-up exams are entitled to students who miss the exam with accepted legal or medical excuses endorsed by the instructor within 24 hours after the scheduled exam (Please review university regulations for more details).

Date Printed: 2021-11-14