

Course plan

Year: 2025	Semester: <input checked="" type="checkbox"/> First, <input type="checkbox"/> Second, <input type="checkbox"/> Summer	Number of students: 2
Major: Master's Degree in Clinical Biochemistry	<input checked="" type="checkbox"/> Basic sciences, <input type="checkbox"/> Physiopathology	Department: Clinical Biochemistry and Nutrition
Course Title: Clinical Biochemistry 1	<input checked="" type="checkbox"/> Theoretical, <input type="checkbox"/> Practical	Credit: Code N.:
Prerequisite: _____	Day & Time: Mondays at ١٠-١٢	Course type:
Instructor: Dr. Zahra Arab	Office address: Department of Clinical Biochemistry and Nutrition	Tel: +989139837184
Email: Zahra.arabsadeghabadi@gmail.com	Response Hours and Days:	Student representative name and mobile number:

Main objective: This course aims to provide students with a comprehensive understanding of biochemical components in biological fluids and their alterations in pathological conditions.

On completion of this course, the student will be able to:

١. Understand the biochemical composition of proteins in biological fluids and recognize their pathological changes in various diseases.
٢. Perform and interpret physical and chemical analyses of urine and urinary stones.
٣. Describe iron metabolism, diagnose different types of anemia, and apply appropriate laboratory diagnostic methods.
٤. Explain the role of cytokines in health and disease, focusing on their pathological alterations.
٥. Evaluate oxidative stress through laboratory methods and understand its correlation with disease pathogenesis.
٦. Discuss tumor markers, their diagnostic and prognostic value, detection methods, and the identification of novel biomarkers for cancer management.
٧. Conduct biochemical tests on stool samples, including fecal fat quantification and occult blood detection, and interpret the results for clinical significance.

References (Text books):

William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.

Student evaluation and the value related to each evaluation:

(The assessment tools that will be used to test student ability to understand the course material and gain the skills and competencies stated in learning outcomes)

ASSESSMENT TOOLS	From
Assignments	1
Quiz	1
Final Exam (Written exam)	١٨
TOTAL MARKS	20

Students responsibilities:

- 1- Mobile phones must be turned off during class or exams.
- 2- Attending class on time

3- It is necessary for the student to attend all class hours. Unexcused absence during the course will result in a grade deduction.

Discipline and educational rules:

It is applied according to the regulations of the educational regulations

Final exam date:

Row	date	Time	Topic	Professor	References	Chapter	Pages
1	Monday	10-12	Proteins in biological fluids and their pathological changes in various disease conditions	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
2	Monday	10-12	Physical and chemical analysis of urine and urinary stones	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
3	Monday	10-12	Iron metabolism, different forms of anemia, and the diagnostic approaches used in their laboratory evaluation.	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
4	Monday	10-12	Cytokines and their roles in health and disease, with a focus on their pathological alterations	Arab	William J. Marshall, Marta Lapsley,		

			in various clinical conditions		Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
5	Monday	10-12	An in-depth study of oxidative stress, the laboratory methods used for its assessment, and its correlation with the pathogenesis of various diseases	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
6	Monday	10-12	A comprehensive review of tumor markers, including their diagnostic and prognostic significance in malignant diseases, detection techniques, and the discovery of novel biomarkers for cancer prevention, early detection, and therapeutic monitoring.	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		
7	Monday	10-12	Biochemical evaluation of stool samples, focusing on tests such as fecal fat quantification, occult blood detection, and other clinically significant marker	Arab	William J. Marshall, Marta Lapsley, Andrew Day, Kate Shipman, Clinical Chemistry. Elsevier Health Science.		