

TISHK INTERNATIONAL UNIVERSITY
FACULTY OF APPLIED SCIENCE
Department of MEDICAL ANALYSIS,
-2022 Fall
Course Information for MA 104 ANALYTICAL CHEMISTRY

Course Name:		ANALYTICAL CHEMISTRY				
Code MA 104	Regular Semester 2	Theoretical 2	Practical 2	Credits 3	ECTS 5	
Name of Lecturer(s)- Academic Title:	Rebwar Omar - PhD					
Teaching Assistant:	Dr.Soma and Mr. Kovan					
Course Language:	English					
Course Type:	Main					
Office Hours	10:00-11:00 Wednesday					
Contact Email:	rebwar.omar@tiu.edu.iq Tel:+9647504600445					
Teacher's academic profile:	Assistant Professor					
Course Objectives:	This course provides an introduction to the fundamental principles of chemical analysis. I will teach the students how to correctly handle and interpret experimental measurements you will also learn how to perform an analytical procedure like volumetric analysis.					
Course Description (Course overview):	As one of the five primary branches of Chemistry, Analytical chemistry and techniques are used for separation, identification and quantification of matter. Analysis of substances occupies a significant portion of the Medical Analysis and as such the aim of this course to introduce the chemistry related aspects of analysis and also provide insight and knowledge in techniques to conduct these kinds of investigations to maximize the efficacy practice employing chemistry related methodologies.					

COURSE CONTENT

Week	Hour	Date	Topic
1	2	19-23/12/2021	Fundamental of Analytical Chemistry
2	2	26-30/12/2021	Qualitative and Quantitative methods of Analysis
3	2	2-6/1/2022	Classification of Matter (Substance and Mixture)
4	2	9-13/1/2022	Units Used to Express the Concentrations of Solution
5	2	16-20/1/2022	Midterm Exam
6	2	23-27/1/2022	Chemical Stoichiometry
7	2	30/1-3/2/2022	Acidic and Basic Equilibria and Buffer Solutions
8	2	6-10/2/2022	Statistical Data Treatment and Evaluation
9	2	13-17/2/2022	Volumetric Method of Analysis
10	2	20-24/2/2022	Final Exam
11	2	27/2-3/3/2022	Final Exam
12	2	6-10/3/2022	Final Exam

COURSE/STUDENT LEARNING OUTCOMES

- 1 General Introduction to Analytical Chemistry
- 2 Qualitative and Quantitative Analysis Methods
- 3 Calculations Used in Analytical Chemistry

COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES

(Blank : no contribution, I: Introduction, P: Proficient, A: Advanced)

Program Learning Outcomes

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1	Evaluate clinical laboratory data by interpreting laboratory results and relating the data to various disease states.	I
2	apply principles of evidence-based medicine to determine clinical diagnoses.	I
3	apply the basic principles of gross and microscopic anatomy, physiology, biochemistry, immunology, microbiology/virology.	A
4	formulate and implement acceptable treatment modalities to various disease states.	
5	use technology effectively in the delivery of instruction, assessment, and professional development.	
6	exhibit essential employability qualities by demonstrating laboratory safety, analyzing laboratory results, and displaying professional conduct.	
7	exhibit organizational skills, accountability, and ethical behavior.	
8	apply skills needed in operating laboratory equipment for testing, assessing quality assurance for lab equipment, and adhering to standard safety practices in the laboratory environment.	
9	apply problem-solving and decision-making skills.	
10	apply and promote health policies and regulatory standards in the field career.	
11	develop research in the field of medical analysis using qualitative and quantitative methods.	

Prerequisites (Course Reading List and References):	The student can find additional information and examples in the following references 1. Modern Analytical Chemistry; by David Harvey. 2. Fundamentals of Analytical Chemistry Eighth Edition, by Douglas A. Skoog, Donald M. West, F. James Holler and Stanley R. Crouch.
Student's obligation (Special Requirements):	1- Student attendance is obligatory . 2- Each student at the end of the course must prepare a report about any titration methods other than those mentioned or discussed during the course. This report includes theory, principles, and discussion of the selected technique and how it helps to improve the understanding of the principles.
Course Book/Textbook:	1-Modern Analytical Chemistry; by David Harvey. 2-Fundamentals of Analytical Chemistry Eighth Edition, by Douglas A. Skoog, Donald M. West, F. James Holler and Stanley R. Crouch.
Other Course Materials/References:	Principles and Practice of Analytical Chemistry, Fifth Edition, by F.W. Fifield and D. Kealey. 4. Vogel's, Textbook of Quantitative Chemical Analysis, Fifth Edition, G.H. Jeffery, J. Bass J. Mendham and R.C. Denney. 5. Quantitative Chemical analysis, Seventh Edition, -Dan C. Harris.
Teaching Methods (Forms of Teaching):	Lectures, Practical sessions, Exercises, Presentation, Assignments, , ,

COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Attendance	1	5
Quiz	2	5
Homework	1	5
Midterm Exam	1	20
Presentation	1	5
Laboratory	1	5
Practical Exam	1	10
Final Exam	1	40
Total		100

Examinations: Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers, , ,