

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Republic of Iraq
The Ministry Of Higher Education
& Scientific Research



University: Baghdad
College: College Science for women
Department: Chemistry
Stage:4th
Lecturer name: Dr. Saadiyah Ahmed Dahir
Qualification: PhD in Analytical chemistry
Place of work: Baghdad

Syllabus Form

Instructor Name	Dr. Saadiyah Ahmed Dahir				
E-mail	sadiataher@yahoo.com sadiataher@csu.uobaghdad.edu.iq				
Course Title	Instrumental analysis and spectroscopy				
Course Coordinator					
Course Objectives	<ul style="list-style-type: none"> 📌 Demonstrate knowledge of sampling methods for all states of matter. 📌 Recognize interferences in instrumental analysis. 📌 Comprehend the concept of and perform instrument and method calibration. 📌 Apply and assess concept of availability and evaluation of analytical standard and formulate standardization methodology. 📌 Integrate a fundamental understanding of the underlining physics principles as they relate to specific instrumentation used for electro analytical methods, atomic and molecular, spectrometry chromatography and thermal analysis. 📌 Understand and be able to apply the theory and operational principles of analytical instrument. 📌 Distinguish between qualitative and quantitative measurements and be able to effectively compare and critically select methods for elemental and molecular analyses. 				
Course Description	This course describe the basic principles and the instrumental design of a variety of analytical techniques, including:, spectrochemical (molecular and atomic), chromatographical, of analysis and covers the instrument of thermal analysis and electrochemistry with basic electronics and signal-to-noise enhancement .				
Textbook	📌 Douglas A. Skoog ,James Holler, Stanly R. Crouch., "Principles of instrumental analysis" 7 th Edition, 2007 .				
References	<ul style="list-style-type: none"> 📌 Douglas A. Skoog ,James Holler, Stanly R. Crouch., "Principles of instrumental analysis" 7th Edition, 2007 . 📌 D.C. Harris, "Quantitative Chemical Analysis", 6th edition,2003. 📌 Understanding Chemistry, Instrumental Analysis 2008 📌 John Kenkel , "Analytical Chemistry for Technicians". Third Edition,2003. 				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	As(26%)	As(12%)	As(2%)	-	As(60%)

General Notes	Define and Identify appropriate instrumental methods for certain chemical analysis and their application in for quantitative and qualitative for different chemical compounds
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Course Weekly Outline

University :Baghdad

College: : College Science for women

Department: Chemistry

Stage:4th

Lecturer name: Dr. Saadiyah

Ahmed Dhahir

Qualification: PhD in Analytical chemistry

Place of work: Baghdad

Week	Date	Topes Covered	Lab. Experiment Assignments	Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
Half – year break				
17	21/2/2016	Atomic spectroscopy, Introduction	Determination of sodium and potassium by emission of flam method ,part 1	
18	28/2/2016	Atomic absorption spectroscopy, principles, instrumentation	Determination of sodium and potassium by emission of flam method ,part 2	
19	6/3/2016	Atomic emission spectroscopy, Atomic Fluorescence spectroscopy, application	The calibration of a combination of phosphoric acid and hydrochloric with a strong base by measurement	

			effort.	
20	13/3/2016	Inductively Coupled Plasma, principles, instrumentation, application	Infrared spectra of carboxylic acid, phenols, aromatic amines	
21	20/3/2016	Gas chromatography, Introduction, principles	Infrared spectra of aldehydes and ketones compounds	
22	27/3/2016	Gas chromatography, instrumentation, application	spectroscopy in the visible region	
23	3/4/2016	First Exam	Colorimetric Determination of Co^{+2}	
24	10/4/2016	Liquid chromatography, Introduction, principles	Determination of dissociation constant indicator, part 2	
25	17/4/2016	High performance liquid chromatography HPLC, Introduction, principles	Determination of dissociation constant indicator, part 1	
26	24/4/2016	High performance liquid chromatography HPLC, instrumentation, application	Spectrometric Determining of Nitrate Ion Concentration in Tap Water	
27	8/5/2016	Ion chromatography, instrumentation, application	Determination of dissociation constant indicator, part 1	1/5/2016 عطلة رسمية عيد
28	15/5/2016	Thermal analysis, Introduction, application	Determination of dissociation constant indicator, part 2	
		Conductometry, Introduction, application	Conductometric titrations for acid strong with base weak	
29	22/5/2016	Potentiometry, Introduction, application	Oral Exam of Lab. Experiment	
30	29/5/2016	Second Exam	Theoretical Exam of Lab. Experiment	

Instructor Signature:

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Prof .Assist. Dr. Saadiyah Ahmed Dhahir

Prof. Dr. Ahlam Mohammad Farhan