



**Jordan University of Science and Technology**  
**Faculty of Science & Arts**  
**Chemistry Department**

CHEM234 Analytical Chemistry (Lab)

Summer Semester 2019-2020

**Course Catalog**

1 Credit Hours. This course aims to teach students the basic principles of analytical chemistry. The first part of the course will cover the preparation of reagent, statistical evaluation of replicated data measurements and study the validity of results. Analysis of unknowns will also be covered using different analytical qualitative and quantitative methods. The course will be frequently illustrated examples linked to other scientific disciplines, in particular to medicine, pharmaceutical, and agricultural sciences.

**Instructor**

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**Instructor**

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**Class Schedule & Room**

Section 1:

Lecture Time: Thu : 09:30 - 15:30

Room: LAB9 (D2 L-2)

Section 2:

Lecture Time: Thu : 09:00 - 15:00

Room: LAB10 (D2 L-2)

**Tentative List of Topics Covered**

Weeks	Topic	References
	Preparation of Analytical Reagents and Calibration standards	
Week 2	Statistical evaluation of analytical results	
Week 3	Gravimetric determination of sulfate	
Week 4	Application of acid-base titration 1: assay of strong acids, acidity of vinegar and alkalinity of water	
Week 5	Application of acid-base titration 2: Assay of sodium carbonate in soda ash and determination of total alkalinity of water	
Week 6	Back titration	
Week 7	Potentiometric titration of mixtures of carbonates, bicarbonates and hydroxides	
Week 8	Determination of chloride by precipitation titration	
Week 9	Determination of calcium, magnesium and total hardness of water by complexation titration	
Week 10	Oxidation reduction Titrations	
Week 11	Iodimetric titration of ascorbic acid in vitamin tablets	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Develop the experimental skills including the ability to use balances, glass wares, and chemicals required. [3a, 3b, 3c]	40%	
Learn the basics and applications of classical methods for qualitative and quantitative analysis (gravimetric and titrimetric) . [3a, 3e, 2g]	20%	
Able to apply statistical methods for analyzing experimental data and test the validity of results and make reasonable conclusions about these results. [3a, 3c, 1j, 2k]	40%	

Relationship to Program Student Outcomes (Out of 100%)										
a	b	c	d	e	f	g	h	i	j	k
34.17	13.33	26.67		7.50		5			4.44	8.89

Evaluation	
Assessment Tool	Weight

final	40%
midterm	40%
participation	20%

Date Printed: 2020-09-24