

معلومات المقرر \* (Course Information):

اسم المقرر:	كيمياء تحليلية-2
رقم المقرر:	CHM212
اسم ورقم المتطلب السابق:	كيمياء تحليلية-1 , CHM111
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	المستوي الثالث
الساعات المعتمدة:	3
Module Title:	Analytical chemistry-2
Module ID:	CHM212
Prerequisite (Co-requisite) :	Analytical chemistry-1
Co-requisite :	None
Course Level:	Third level
Credit Hours:	3

Module Description

وصف المقرر :

This course provide basic knowledge and understanding of essential principles for volumetric and gravimetric. This course include ( studying the principles of titration operation- the four types of titration reactions neutralization reactions, oxidation-reduction reactions – precipitation reactions and complex formation reactions). The course is also focus on the gravimetric chemical analysis technique( steps in gravimetric analysis- precipitation technique and the factors that affect on it).

The course is also focus on giving students different titration (neutralization- oxidation- reduction – precipitation and complex formation), it also gives different experiments in gravimetric analysis.

Module Aims

أهداف المقرر :

1	Recognize the importance and basis for qualitative analysis (volumetric analysis and gravimetric analysis)
2	Studying the principles of titration operation





3	solving problems related to chemical analysis and interpret analytical results	3
4	Studying the concept of gravimetric analysis	4
5	studying different forms of sediments and the factors which affect on it	5

Learning Outcomes:

مخرجات التعليم:

1	Identify the basic principles of volumetric and gravimetric analysis procedures	1
2	-Performing different volumetric and gravimetric experiments and doing different calculations concerning with them and Solving different exercises and questions concerning with volumetric and gravimetric analysis	2
3	- Group working in the lab and in introducing presentation and writing reports	3
4	Communicate effectively in oral and written form.	4
5	Demonstrate good and safe handling of laboratory chemicals, glassware and equipment during experiments	5

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
2	1	Introduction to chemical analysis and calculations
2	1	Errors in Chemical Analysis: Accuracy, systematic and random errors, detection methods
2	1	Statistical data treatment: confidence intervals, hypothesis testing, analysis of variance
8	4	Titrimetric Methods of Analysis; Acid-base system, neutralization, titration curves, mixtures of strong and weak acids and bases, polyfunctional acids and bases, amphiprotic species, indicators and indicators theories)
2	1	Oxidation- reduction reactions( Redox reactions) electrochemical cells, cell potentials, redox titration curves
2	1	Complex metric titrations and their applications.
2	1	Precipitation titrations (Mohr- Folhard and Fajan methods)
2	1	Oxidation reduction titrations and applications.





4	2	Introduction to gravimetric analysis and gravimetric analysis steps
2	1	Theoretical foundations of the deposition.
2	1	Completion of the deposition and the factors effected with an explanation of organic and inorganic precipitates

Textbook and References:

الكتاب المقرر والمراجع المساندة:

ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
ISBN-13: 978-0495558286  ISBN-10: 0495558281	2013	Brooks Cole; 9 edition (January 1, 2013	Douglas A. Skoog	Fundamentals of Analytical Chemistry 9th Edition
	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
ISBN-10: 0078021510  ISBN-13: 978- 0078021510	2015	McGraw-Hill Education; 12 edition (January 8, 2015)	Raymond Chang  And Golds Kenneth	Chemistry 12 Edition
ISBN:0-07-237547-7	2000 1st ed	McGraw-Hill,	David Harvey	Modern Analytical chemistry
ISBN9781429218153	2010 8th edition	W.H. Freeman and Co., New York	Daniel C.Harris ,	Quantitative chemical analysis

\* يتم تعبئة معلومات المقرر فقط باللغتين العربية والانجليزية وباقي المعلومات بلغة التدريس المعتمدة ويكرر لكل مقرر في الخطة الدراسية

\* Course Information should be filled in Arabic and English. Other information should be filled using the approved teaching language at the college.



