جامعة : المنصورة

كـــلية : العلوم

قسم / الكيمياء

توصيف مقرر دراسى

١- بيانات المقرر		
الرمز الكود:211 ك	**أسم** المقرر: Fundamentals of Analytical Chemistry	**المستوى : الثانى**
البرنامج : الكيمياء	**عدد الوحدات الدراسية: ٣ نظرى : ٢ تمارين: - عملى:٣**	

٢- هدف المقرر:	**For students undertaking this course, the aims are to:** 1 - Introduce the basic information of statistics of experimental data 2 - Introduce the basic information about volumetric, gravimetric, precipitation and complexiметric methods of analysis 3 - Study the general methods for determination of concentration of unknown solution acid, base, halids and metal ions. 4 - Acquire the student the skills of analysis of different types of samples including environmental, chemical and industrial types.
٣- المستهدف من التدريس المقرر:	
أ-المعلومات والمفاهيم:	**a- Knowledge and Understanding :** a - 1 - define the basic concepts of analytical chemistry and statistics of experimental data. a - 2 - define the basic concepts of various types of titrimetry. a - 3 - recognize different types of indicators for each type of titrimetry a - 4 - recognize the application of real samples, analysis and calculations. **On completing this course, students will be able to:**
ب-المهارات الذهنية	**b- Intellectual Skills: On completing this course, students will be able to:**

b - 1 - distinguish different types of titremetric analysis b - 2 - outline suitable methods of various types of chemical analysis. b - 3 - make use of chemical reaction results and calculations b - 4 - choose the suitable indicator from titration curves	
c-Professional and Practical Skills: On completing this course, c - 1 - assemble glass ware and its uses. c - 2 - carry out a preparation procedure and solutions including preparation of standard solution c - 3 - uses of masking and demasking agents in the analytical procedure **students will be able to:**	**ج- المهارات المهنية الخاصة بالمقرر:**
d-General and Transferable Skills: On completing this course, d - 1 - work effectively in both team and independently on solving analytical chemistry problems d - 2 - use of IT and search for information d - 3 - communicate effectively with teacher and colleagues. **students will be able to:**	**د- المهارات العامة :**
1- Statistical evaluation of analytical results 2- Method of expressing concentration of solution 3- Sampling and sample preparation before chemical analysis 4- Introduction to titremetric analysis,streochiometry of titration reaction and standardization 5- Application of titremetric analysis, acid base titrations and titration curves. 6- Theory of indicators in titrimetry 7- Oxidation - reduction titrations	**٤- محتوى المقرر:**

8- Precipitation titrations, methods of detection the end point

9- Theory of complexiметry ,application

10- Practical

٥- اساليب التعليم والتعلم:

1 - lectures using data show and board.

2 - home works, reports and discussion groups

3 - Laboratory work.

٦- أساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة:

The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.

٧- تقويم الطلاب :

أ- الأساليب المستخدمة :

7- Student Assessment Methods

Practical exam	**To assess**	b1-b4,c1-c3
Final exam	**to assess**	a1-a4, b1-b4
Oral exam	**to assess**	a1-a4, d3
Mid-term exam	**To assess**	a1-a4, b1-b4
Report	**to assess**	d1-d3

ب- التوقيت :

Assessment Schedule

Assessment 1	**Week #final exam**	**Week 14**
Assessment 2	**Week #oral exam**	**Week 14**
Assessment 3	**Week #practical exam**	**Week 12**

Assessment 4	**Week #mid-term exam**	**Week 4,8,12**		
Assessment 5	**Week #report**	Week 10		

ج- توزيع الدرجات :

Weighting of Assessments

Final-Term Examination	**60%**
Oral Examination	**10%**
Practical Examination	**20%**
Semester work	**0%**
Mid-term examination	**10%**
Other types of assessment	**0%**
Total	**100%**

٨- قائمة الكتب الدراسية والمراجع :

1 - fundamentals of analytical chemistry	**أ- مذكرات:**
	ب- كتب ملزمة
1 - Vogel's - Textbook of Quantitative Chemical Analysis (5th Edition)	**ج- كتب مقترحة :**
	د- دوريات علمية أو نشرات..

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

	المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
1	Statistical evaluation of analytical results	1-2	a1	b3		d2
2	Method of expressing concentration of solution	3-4	a1	b1,b2	c1,c2	d2,d3

3	Sampling and sample preparation before chemical analysis	5-6	a1	b1,b2	c2	d1,d2,d3
4	Introduction to titremetric analysis,stoichiometry of titration reaction and standardization	7-8	a2	b1,b2		d2
5	Application of titremetric analysis, acid base titrations and titration curves.	9	a4	b1,b2,b3	c2	d3
6	Theory of indicators in titrimetry	10	a3	b1,b2,b3		d2
7	Oxidation - reduction titrations	11-12	a4	b2,b3	c2	d2
8	Precipitation titrations, methods of detection the end point	13	a2,a4	b2,b3	c2	d2
9	Theory of complexiметry ,application	14	a2,a4	b2,b3	c2	d2,d3
10	Practical	1-12			c1,c3	d1,d3

أستاذ المادة : ا.د/ محمد محمد محمد الدفراوى

رئيس مجلس القسم العلمي : أ.د /سالم السيد سمرة