

مواصفات المقرر كيمياء تحليلية I

- البرنامج الذي يقدم المقرر من خلاله (إعداد معلم الكيمياء)
- يمثل المقرر عنصرا (رئيسيا) بالنسبة للبرنامج
- القسم العلمي المسئول عن البرنامج (متعدد)
- القسم العلمي المسئول عن تدريس المقرر (قسم الكيمياء)
- السنة الدراسية / المستوى (الفرقة الثانية عام . شعبة الكيمياء / الفصل الدراسي الأول)
- تاريخ اعتماد توصيف البرنامج (2005/5/11م)

بيانات أساسية

Basic Data

(1) Course Title: Analytical Chemistry I (introduction to quantitative chemical analysis)

(2) Course Code No.: 211ch

(3) Credit Hours: four credit hours

Lectures: 2 credit hours

laboratory: 2 credit hours

Total hours: 4 credit hours

بيانات مهنية

(1) الأهداف العامة للمقرر:

- The course is designed to help student-teachers achieve the following goals:
 - 1-Explain different methods of volumetric and gravimetric analysis and their applications in industry
 - 2-Acquire skills in performing accurate chemical measurements.

(2) نواتج التعلم المستهدفة:

By the end of this course, student teachers are expected to achieve the following objectives:

(أ) المعرفة والفهم:

- A-1 Identify the differences between qualitative and quantitative analysis.
- A-2 Express concentration units.
- A-3 Compare between qualitative and quantitative analysis.

- A-4 Explain the different types of reactions used in volumetric analysis.
A-5 Describe the industrial applications of volumetric analysis .
A-6 Develop an appreciation for the nature of scientific inquiry.

(ب) المهارات العقلية:

- B-1 Relate the concepts of chemistry to contemporary, historical, technological, and societal issues; in particular, relate concepts of chemistry to current controversies, such as those around energy uses and medical research, as well as other issues.
B-2 Demonstrate competence in the practice of teaching as defined within the Entry-Level Standards .
B-3 Visualize chemistry as the study of the composition, structure, properties, reactions of matter, and the dynamic interrelations of matter.

(ج) المهارات العملية:

- C-1 Gains familiarity with acid – base, redox, complexometric, and precipitation reactions and titrations.
C-2 Processes the data obtained from titration curves in chemical calculations.
C-3 Acquire familiarity with industrial, medical and biological applications of analytical chemistry.
C-4 Locate resources, design and conduct inquiry-based open-ended investigations in chemistry, interpret findings, communicate results, and make judgments based on evidence.
C-5 Demonstrate competence in the practice of teaching through investigative experiences
C-6 Demonstrating the application of the scientific process and assessing student learning through multiple processes.

(د) المهارات العامة والمنقولة:

- D-1 Construct new knowledge for themselves through research, reading and discussion, and reflect in an informed way on the role of science in human affairs.
D-2 Create and maintain an educational environment in which conceptual understanding will occur for all science students.

المحتويات:

Week	Topics	Lectures	laboratory	Total
First	<u>Introduction to quantitative chemical analysis</u> Concentration.	2	2	4
Second	Volumetric Analysis: acid-	2	2	4
Third	base	2	2	4
Fourth	redox	2	2	4
Fifth	complex formation,	2	2	4
Sixth	gravimetry	2	2	4
Seventh	titrimetry.	2	2	4
Eighth	Chemical and industrial applications.	2	2	4
Ninth	<u>Laboratory</u> : Volumetric analysis: Acid .	2	2	4
Tenth	base	2	2	4
Eleventh	precipitation,	2	2	4
Twelfth	oxidation - reduction	2	2	4
Thirteenth	complexometric titrations.	2	2	4

Activities, tasks and assignments:

- Solves and discusses problem sets.
- Submission and class presentation of term papers.
- Computer aided and web based assignments and assessment.
- Visits to industrial and medical institutions and submission of subsequent reports.

أساليب التعليم والتعلم

- Laboratory work, group discussions, and reports on: volumetric analysis, precipitation, complexometric and redox titrations.

Assessment and Evaluation tools:

- Final exam
- Hourly and midterm exams.
- Oral assessment.

أساليب التقويم

- Assessment of term paper, reports and group discussions.
- Quizzes

Summative Evaluation table

جدول التقييم

Assessment	Final exam	Fifteenth Week	الأسبوع الخامس عشر	نهاية الفصل الدراسي	التقييم الختامي
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النسبة المئوية لكل تقسيم

Assessment	Score وزن الدرجة Weight	التقييم
2. Final written exam	105	1. امتحان نهاية الفصل الدراسي
3. Final oral exam	30	2. الامتحان العملي
4. assignments	15	3. أعمال فصلية
Total	150	المجموع

References:

قائمة المراجع

Students' Textbooks

(1) كتب الطالب

Periodicals and websites

(2) مجلات علمية، ومواقع الإنترنت

Journal of Chemical Information and Modeling

Journal of Chemical Education (JCE)

Chemical reviews.

Condensed matter, materials, surfaces, interfaces & biophysical.

Resources

الإمكانات المطلوبة للتعليم والتعلم

- References
- Chemistry library
- Textbooks
- Handouts and problem sets.
- Electronic, web, and multimedia based resources.
- Lab work.

Course coordinator:

• منسق المقرر: د محمد عبد الطيف

Head of the Department:

• رئيس القسم: أ. د مدحت شاكر

Date

• التاريخ: 2005/5/11م



رؤية الكلية: انطلاقا من رؤية جامعة الإسكندرية تسعى كلية التربية بدمنهور إلى تحقيق الجودة والحصول على الاعتماد الأكاديمي لتحتل مكانة متميزة بين كليات التربية على المستوى القومي و العالمي (مجلس الكلية ، 8 مارس 2009) .

رسالة الكلية: إعداد المعلمين والكوادر المؤهلة القادرة على تطوير النظم التعليمية والإدارية بالتعليم العام والفني ، والباحثين القادرين على تطوير