



Course Specifications

Institution:	Majmaah University
Academic Department :	Chemistry
Programme :	Chemistry
Course :	Instrumental Analysis Chemistry
Course Coordinator :	LecturerD .Mai Makki Mahmoud
Programme Coordinator :	Dr. Gehan Al-Omayri
Course Specification Approved Date :	18/ 12 / 1435 H□

A. Course Identification and General Information

1 - Course title :	Instrumental Analysis Chemistry.	Course Code:	Chem 411.
2. Credit hours :	4		
3 - Program(s) in which the course is offered:	Chemistry		
4 – Course Language :	Arabic		
5 - Name of faculty member responsible for the course:	Lecturer.Mai Makki Mahmoud		
6 - Level/year at which this course is offered :			
7 - Pre-requisites for this course (if any) :	Quantitative analytical chemistry		
8 - Co-requisites for this course (if any) :	Instrumental Analysis Chemistry lab.		
9 - Location if not on main campus :	main campus		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input type="checkbox"/>	What percentage? % <input type="checkbox"/>
B - Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	75 % <input type="checkbox"/>
D - e-learning	<input checked="" type="checkbox"/>	What percentage?	25% <input type="checkbox"/>
E - Correspondence	<input type="checkbox"/>	What percentage? % <input type="checkbox"/>
F - Other	<input type="checkbox"/>	What percentage? % <input type="checkbox"/>
Comments :			

B Objectives

<p>What is the main purpose for this course?</p> <p>Identification and analysis of electrical equipment, including for analysis methods and Potential Calomtry, Voltammetry and Ampiomety. As well as ways to give entrance to the spectroscopy, chromatography and identify their kinds and principles.</p>
<p>Briefly describe any plans for developing and improving the course that are being implemented :</p> <p>Using Internet in the research work .</p>

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C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
-A general introduction in the electrolytic methods include Potentiometric , colomtric and gravimetric analysis and Electrolytic.	4	12
- Ampirometric and voltamitric titration.	4	12
- Introduction to the spectral analysis methods include visible spectroscopy.	2	6
- Methods of molecular spectroscopy.	1	3
- Methods of atomic spectroscopy.	1	3
Introduction to the Chromatography and distribution coefficient.	1	3
Chromatographic methods of separation sheets, columns and gas chromatography.	2	6

2. Course components (total contact hours and credits per semester):

<input type="checkbox"/>	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2 <input type="checkbox"/>
Credit	3 <input type="checkbox"/> <input type="checkbox"/>	2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4

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3. Additional private study/learning hours expected for students per week.

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	- To learn the electrolytic methods include Potentiometric , colomtric and gravimetric analysis and Electrolytic. - To learn methods used in the expression of different concentrations, Equilibrium and the formation of complexes.	Lecture Exercises Discussion	Exams, Questions
1.2	Describe the spectral analysis methods include visible spectroscopy.	Experiments Discussion	Experimental Study, Exams
2.0	Cognitive Skills		
2.1	- Describe the Methods of molecular spectroscopy.	Lecture, Exercises Discussion	Exams, Questions
2.2	- Describe the Methods of atomic spectroscopy	Lecture, Exercises Discussion	Exams, Questions
3.0	Interpersonal Skills & Responsibility		
3.1	Teamwork	Divide in the form of practical sets.	Oral exercises.
4.0	Communication, Information Technology, Numerical		
4.1	- Calibrations calculations for neutralization interactions , redox , sedimentation and complexes	Lecture, Discussion	Oral exercises Exams.
5.0	Psychomotor		
5.1	Experimental work	Lecture, Discussion	Oral exercises Exams.

5. Schedule of Assessment Tasks for Students During the Semester:

Assessment task	Week Due	Proportion of Total Assessment
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1	First Exam	6	15
2	Second Exam	10	15
3	Final Exam	14	60
4	Research	9	10





D. Student Academic Counseling and Support

Academic Advising

E. Learning Resources

1. List Required Textbooks :

- Instrumental Analysis Chemistry, Ibrahim Al-Zamel. 1993.
- Quantitative analytical chemistry, 5th edition by j.S. Fritz and G.H. Schneck. 1987 .

2. List Essential References Materials :

- Instrumental Analysis Chemistry, Ibrahim Al-Zamel. 1993.
- Key creativity in Chemistry, Omar Helwah .

3. List Recommended Textbooks and Reference Material :

- Quantitative analytical chemistry, 5th edition by j.S. Fritz and G.H. Schneck. 1987

4. List Electronic Materials :

- chemix, chemsketch, chemdraw programs.
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5. Other learning material :

- Crocodile program.
- Virtual lap of spectroscopy

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F. Facilities Required

1. Accommodation

- Seats and computers.

2. Computing resources

- Lap top.





3. Other resources

- Projector.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Questionnaires Evaluation.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Discussions.

3 Processes for Improvement of Teaching :

- Review course plans periodically and adjust..

4. Processes for Verifying Standards of Student Achievement

- Corrected tests with the teaching staff of the department..

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Questionnaires Evaluation.

Course Specification Approved
Department Official Meeting No (.....) Date ... / / *H*

Course's Coordinator ☐

Name : ☐ D .Mai Makki
Mahmoud ☐

Signature : ☐ mai

Date : ☐ 28/ 12 / 1436 *H* ☐

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☐ **Department Head** ☐

☐ **Name :** ☐

☐ **Signature :** ☐

☐ **Date :** ☐ ... / ... / *H* ☐

