Course Description Form

1. Course Name:
ANALYTICAL Chemistry
2. Course Code:
ANCH107
3. Semester / Year:
Spring semester 2024
4. Description Preparation Date:
1-2-2024
5. Available Attendance Forms:
attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours thertical 3 hours partical /3.5 unit
7. Course administrator's name (mention all, if more than one name)
Name: ABDUSSAMED MOHAMMED ALI SAEED Email: abdmas74@uomosul.edu.iq ALAA TAHA AZEEZ Email: alaa.taha@uomosul.edu.iq

8. Course Objectives	
Enabling students to know the principles of devices Identify the characteristics of the devices Accurately Finding the best methods for analysis Finding the appropriate and quick Method for analysis Enable the student to perform calculation To find concentrate the analyzed Materials and compare them with Standard methods Finding alternatives if the devices used Are not available	• **Enabling students to know** • **The equipment in** • **Laboratories** • **Enabling the student** • **To conduct practical** • **Experiments enabling the** • **Student to use glassware** • **And knowing chemicals**

9. Teaching and Learning Strategies	
Strategy Applying modern strategies for Education Providing learners with many	1. Assigning group work to reveal 2. Leadership skills 3. Assigning tasks and reporting

different skills and knowledge increase students ability to learn using effective modern strategies that help	For each experiment

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2h 3h	A1The student gets to know What is meant by b Chemistry Analytical /practical B6The student blames him On the app Measures related to the concept Ways and means To use devices	Introduction to chemistry Analytical Practical /guidelines About working in the laboratory	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
2	2h 3h	B1The student masters the methods Expression Abou t focus and preparation Solutions Practical /b7 masters the laws used To prepare solutions	Ways of expression About focus and preparation Solutions Practical/laws used To prepare solutions Mathematical examples	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
3	2h 3h	B2 Proficient in Solving mathematical examples Practical preparation Solutions Practical /b8proficien solving examples Sports	And an introduction to Analytical chemistry Practical preparation Solutions Practical/mathematical examples Practical preparation Solutions	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
4	2h 3h	A2The student gets to know Break-even adjustments and related matters With it Practical B9The student is familiar with work methods For equal settlements	Break-even adjustments Practical Introduction to working methods	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
5	2h 3h	A3The student knows the most important things For applications Practical B10The student carries out a practical application To prepare standard	Break-even adjustments Applications on Break-even adjustments Practical acid preparation experiment standard	Lectures And Means Audio And Reports And other	Exams Reports Discussions Quizzes

		acid		method	
6	2h 3h	A4The student gets to know Redox modifications Practical B11The practical application carries out a preparation experiment Standard base	Oxidation erosion And shorthand Practical/preparation experience Standard base	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
7	2h 3h	A5The student gets to know Analysis of complex formation Practical B12A practical application carries out an estimation experiment Iron(II) with permanganate	Complex formation studies Practical / iron estimation experiment with Potassium permanganate	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
8	2h 3h	A6The student gets to know Depositional facies Practical B13Performs a practical application Iron estimation experiment With potassium dichromate	Depositional facies Practical / iron estimation experiment With potassium dichromate	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
9	2h 3h	A7 The student learns About Gravimetric analysis And the differences with Depositional delamination Practical A11 The student gets to know Testimonials Formation of complexes	Weight analysis And the differences with Depositional delamination PARTICAL / corrections Formation of complexes	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
10	2h 3h	A8 The student learns about analysis The mechanism and theories that it given for them Practical B14A practical Application implements a calcium Determination experiment In chalk Using corrections Formation of complexes	Instrumental analysis and theories that She came for him Practical/experiment for calcium determination In chalk Using corrections Formation of complexes	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes

11	2h 3h	A9 The student learns about measurement methods in chromatographic analysis Practical B15 A practical Application implements an estimation experiment Total hardness o f water Using EDTA	Measurement methods in Color analysis Practical/ experience hardship assessment College water using EDTA	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
12	2h 3h	B3He knows with appreciation Selected chemicals Practical B16 A practical application implements an estimation experiment Chloride by Moore's method in salt the food	To estimate Selected chemicals Practical/experiment for chloride estimation Murphy's table salt method	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
13	2h 3h	A10The student gets to know Atomic Absorption spectrometry Practical B17A practical application implements an estimation experiment Chloride by Moore's method in drinking water	Atomic absorption spectrometry Practical/ assessment experience Chloride by Moore's method Drinking water	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
14	2h 3h	B4The student is familiar with preparation methods Samples For chemical analysis Practical B18A practical application implements an estimation experiment Chloride by Volhard's method salt	Sample preparation methods For chemical analysis Practical /assessment experience Chloride by the Volhard method In table salt	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes
15	2h 3h	B5The student is proficient in solving open-ended questions Analytical chemistry Practical B19The student masters various questions about Practical chemistry and its experiments	Open questions in Analytical chemistry practical/ Various questions about Practical chemistry and its experiments	Lectures And Means Audio And Reports And other method	Exams Reports Discussions Quizzes

11. Course Evaluation

Relative weight%	class	Calendar appointment(week	Calendar methods
%13	7theoretical6+practical	Theoreticalweek15 Practical week1-15	Final report (experiments+practical)
%6	4theoretical2+practical	Week3	Short test1
%15	10theoretical5+practical	Week9	Midtermtheoretical+practicalexam
%6	4theoretical2+practical	Week12	Short test2
%20	20	Practical exam week	finalpracticaltest
%40	40	Theory exam week	Final theoretical test
%100	100		The total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Quantitative of inorganic chemistry by Vogel, 1973.**
Main references (sources)	الكيمياء العامة لطلبة كلية الزراعة والغابات، تاليف د. سامي عبد علي، د. سالم حامد، د. معاذ عبد الله الحجار
Recommended books and references (scientific journals, reports...)	أسس الكيمياء التحليلية د. ثابت الغبشة ، د. مؤيد قاسم العبايجي
Electronic References, Websites	بعض المواقع العلمية الرصينة وخاصة للجامعات العراقية

Instructor of theoritical part

Dr. Abdussamed mohammed ali saeed

Instructor of practical part
Alaa taha azeez

الأستاذ الدكتور
سمية خلف بدوي
رئيس قسم علوم الأغذية

Chairman of the scientific committee

Prof. Dr. Moafak mahmood ahmed

Head of the department of Food science

Prof. Dr. Sumiya kalaf badawi