Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ..**Basrah**.....

Faculty/Institute: ... **College of Education for Pure Sciences**.....

Scientific Department: ....**Chemistry**.....

Academic or Professional Program Name: ...**Organic Chemistry**.....

Final Certificate Name: ....**PhD**.....

Academic System: ... **yearly** .....

Description Preparation Date: **2023–2024**

File Completion Date: **2/25/2024**

Signature

Head of Department Name: **Prof. Dr. Mouayed Yousif Kadhum**

Date:

Signature:

Scientific Associate Name: **Prof. Dr. AbdulSatar Jaber**

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assis.Prof. Dr.Haider Baqir Abdallah

Date:

Signature:

UNIVERSITY OF BASRAH
COLLEGE OF EDUCATION
FOR PURE SCIENCES

Approval of the Dean

Prof.Dr. Majid Mohamed Jasim

1. **Program Vision**
Program vision is written here as stated in the university's catalogue and website.

2. **Program Mission**
Program mission is written here as stated in the university's catalogue and website.

3. **Program Objectives**
General statements describing what the program or institution intends to achieve.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency?

5. **Other external influences**
Is there a sponsor for the program?

6. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		Basic course
College Requirements	yes			
Department Requirements	yes			
Summer Training	no			
Other				

* This can include notes on whether the course is basic or optional.

7. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
2023-2024		**Organic Chemistry**	**theoretical**	**practical**

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies
Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods
Implemented at all stages of the program in general.

11. Faculty			
Faculty Members			
Academic Rank	**Specialization**	**Special Requirements/Skills (if applicable)**	**Number of the teaching staff**

	General	**Special**			**Staff**	**Lecturer**
	Chemistry	**Organic Chemistry**			**Staff**	**Assistant lecturer**

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Organic Chemistry	Basic	-					-					-	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name: Organic Chemistry
2. Course Code:
1. Semester / Year: yearly
3. Description Preparation Date: 25/2/2024
4. Available Attendance Forms:
5. Number of Credit Hours (Total) / Number of Units (Total) 56
6. Course administrator's name (mention all, if more than one name)
Name: Zainab AM. Salih Email: zainab.saleh@uobasrah.edu.iq Name: Kawkab A. Hussein Email: kawkab.ali@uobasrah.edu.iq

7. Course Objectives	
Course Objectives	**1. To give students a solid foundation in Orga Chemistry.** **2. To develop analytical and critical-thinking skills that allow independent exploration of chemical synthesis of natural products throug the scientific method.**

8. Teaching and Learning Strategies	
Strategy	A1. Organic Chemistry forms the basis of all earthly life and constitutes the most well-kno chemicals. A2. The bonding patterns of carbon, with its valence of four-formal single, double, and tri bonds, plus structures with delocalized electrons—make the array of organic compounds structurally diverse, and their range of applications enormous. A3. They form the basis of, or are constituents of, many commercial products including pharmaceuticals, petrochemicals, and agrichemicals, and products made from them includi lubricants, solvents; plastics; fuels, and explosives. The study of organic chemistry overlap organometallic chemistry and biochemistry, but also with medicinal chemistry, polymer chemistry, and materials science.

9. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Structures and properti		Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly,final), reports
2	2	Chemical bond polarity	Fundamentals of organic chemistry		
	2	Acids & bases			
3	2	Intermolecular forces &			
	2	hydrogen bond			
4	2	Alkanes			
5	2	Preparation of Alkanes			
6	2	Reaction of Alkanes			
7	2	Chain reaction.			
8	2	Cycloalkanes			
9	2	Reaction of Cycloalkan			
10	2	Preparation of			
11	2	Cycloalkanes			
12	2				
13	2	Exam 1			
14	2				
15					
16		Half-year Break			
17	2	Alkenes			
18	2	Preparation of Alkenes			
19	2	Alkenes Reactions			
20	2	Dienes			
21	2	Dienes Reactions			
22	2	Alkynes			
23	2	Preparation of Alkynes			
24	2	Aromatic hydrocarbon			
25	2	Reaction of benzene			
26	2	Mechanism of electrophilic substitutio			
27	2	Arenes			
28		Exam 2			
29	2	Alkyl halides			
30	2	Reaction of Alkyl halid			
31		Final Exam			
32					

10. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Graham and Selmios, Organic Chemistry. 2- John E. McMurry, Fundamentals of Orga Chemistry.

Main references (sources)	1- R.T.Morrison and R.N.Boyd, Organic Chemis
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

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Academic Program Description Form

University Name: .....**Basrah**.....

Faculty/Institute: .....**Education for Pure Science**.....

Scientific Department: .....**Chemistry**.....

Academic or Professional Program Name: .....**Inorganic Chemistry**.....

Final Certificate Name: .....**Bachelor of Chemistry**.....

Academic System: .....Annual.....

Description Preparation Date: **5/10/2023**

File Completion Date: **22/2/2024**

Signature:
Head of Department
Name:**Prof.Dr.Mouayed Yousif Kadhum**

Date:

Signature:
Scientific Associate
Name:**Prof.Dr.Abdulsatar Jaber Ali**

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assis.Prof.Dr.Haider BaqirAbdullah

Date:

Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Science always attempt to be one of the promising Higher Education institutions at the University of Basrah, in the field of future education and the scientific research through its scientific, research and administrative activity. Moreover, working on supplying useful route for the students and teachers to make them useful and inventive in the society in the field of chemistry science.

2. Program Mission

Work on manage and graduate the efficient students with highly management and scientific in chemistry, and develop the aptitude in the scientific research that bring benefit to the society and the country.

3. Program Objectives

1- Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.

2- Preparing specialized students capable of serving the community and organizing for the preparation of future specializations.

3- Spreading the culture of scientific and cultural diversity in society, transferring scientific knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4- The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and departments in different colleges to achieve best practices in the fields of education, learning, and scientific creativity.

5- Focusing on the educational and moral aspects of all college members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6- Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of science, laboratories and research achievements.

7- Focusing on the educational and moral aspect of the student and spreading the spirit of

dedication, tolerance and commitment.

4. Program Accreditation

–

5. Other external influences

–

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	90	90	Essential course	
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ Second		Inorganic Chemistry	theoretical	

8. Expected learning outcomes of the program

Knowledge	
Introducing the students to the electronic structure of atom, the periodic ,ionic and coolant compound	1- The student's knowledge of the electronic structure of atoms 2- knowledge the student to the periodic properties of atoms 3- knowledge the student to the ionic and coolant compound
Skills	
1- The student must master writing the electronic structure of each atom 2- Distinguish between the represented elements and transition metal 3- Distinguishing between types of bonds	
Ethics	
Expanding students' awareness of chemistry and the ability to share ideas and present them to middle school students in the future	

9. Teaching and Learning Strategies

1- Explaining the scientific material using PowerPoint and the blackboard, and giving information for each group in the periodic table.
2- Write a review paper for each element present in the group, including its presence in nature, methods of preparation and interactions.
3- Linking theoretical information with practical skills.

10. Evaluation methods

1- Oral exams
2- Monthly exams
3- Annual exams

11. Faculty

Faculty Members						
Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of the teaching staff**	
	General	**Special**			**Staff**	**Lecturer**
Professor	Chemistry	Inorganic Chemistry			Staff	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

Studying the electronic structure of atom, the periodic, ionic and coolant compound

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Inorganic Chemistry	Basic	*				*				*			

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Inorganic Chemistry
2. Course Code:
3. Semester / Year:
Year
4. Description Preparation Date:
22/2/2024
5. Available Attendance Forms:
Available
6. Number of Credit Hours (Total) / Number of Units (Total)
90/5
7. Course administrator's name (mention all, if more than one name)
Name: Tarek Ali Fahad Email: tarek.tahad@uobasrah.edu.iq
8. Course Objectives

Learn about the electronic structure of atom, the periodic, ionic and coolant compound	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2	2 theoretica		Electromagnetic radiation (light) Blackbody radiation	Lecture	Weekly and monthly exams, and laboratory reports

3			The Photo-electric effect		
4			Light and matter		
5			The Uncertainty Principle		
6			Quantum numbers		
7			Symbol team		
8			Periodic Table		
9			Shielding		
10			Periodic trends in properties		
11			Ionic and Coolant bonds		
12			Coolant bonds ,hydrogen bond		
13			Crystal lattice		
14			Valance bond theory		
15			Molecular orbital theory		
16					
17					
18			Molecular orbital theory		
19			Linear structure		
20			Tetrahedral shape, planar squa		
21			shape		
22			Bipyramidal, trigonal, octahed		
23			molecules		
24			Linear and triangular particles		
25					

26 27 28			Quadrilateral molecules Particles with pentago symmetry The molecules are hexagonal molecules containing pi bonds molecules containing pi bonds		

11. Course Evaluation

First Semester 25 Degree(Exam to the tasks assigned to the student such as daily preparation, daily oral, monthly), Semester 25 Degree. Final Exam 50 Degree.

12. Learning and Teaching Resources

Armstrong, Isobel. Victorian Poet Poetry, poetics and politics. Routled 2019	
- Basic Inorganic Chemistry, F.A.Cotton, G.Wilkinson and P.L.Gaus, 3rd edition, John Wiley and Sons, Inc. New York, 1995.	

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Academic or Professional Program Name: .....**Inorganic Chemistry**.....

Final Certificate Name: .....**Bachelor of Chemistry**.....

Academic System: .....Annual.....

Description Preparation Date: 5/10/2023

File Completion Date: 22/2/2024

Signature:

Head of Department

Name:**Prof.Dr.Mouayed Yousif Kadhum**

Date:

Signature:

Scientific Associate

Name:**Prof.Dr.Ahdulsatar Jaber Ali**

Date:

The file is checked by:

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Director of the Quality Assurance and University Performance Department:

Assis.Prof.Dr.Haider Baqir Abdalah

Date:

Signature:

UNIVERSITY OF BASRAH
COLLEGE OF EDUCATION
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Approval of the Dean

Prof.Dr. Majid Mohamed Jasim

1. Program Vision

The College of Education for Pure Science always attempt to be one of the promising Higher Education institutions at the University of Basrah, in the field of future education and the scientific research through its scientific, research and administrative activity. Moreover, working on supplying useful route for the students and teachers to make them useful and inventive in the society in the field of chemistry science.

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dedication, tolerance and commitment.

4. Program Accreditation

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5. Other external influences

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6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	90	90	Essential course	
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ Second		Inorganic Chemistry	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Introducing the students to the chemistry of the elements divided in the periodic table under the names of the represented elements, which are divided into seven groups.	1- The student's knowledge of the electronic structure of atoms 2- knowledge the student to the periodic properties of atoms
Skills	
1- The student must master writing the electronic structure of each atom 2- Distinguish between the represented elements and their general properties and characteristics 3- Distinguishing between types of bonds 4- The student receives a set of practical experiments in the laboratory to learn methods for preparing elements and their properties	
Ethics	
Expanding students' awareness of chemistry and the ability to share ideas and present them to middle school students in the future	

9. Teaching and Learning Strategies

1- Explaining the scientific material using PowerPoint and the blackboard, and giving information for each group in the periodic table.
2- Write a review paper for each element present in the group, including its presence in nature, methods of preparation and interactions.
3- Linking theoretical information with practical skills.

10. Evaluation methods

1- Oral exams
2- Monthly exams
3- Annual exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor	Chemistry	Inorganic Chemistry			Staff	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan
Studying the modern periodic table and developing the curriculum according to modern foundations.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Inorganic Chemistry	Basic	*				*				*			

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:

Inorganic Chemistry

2. Course Code:

3. Semester / Year:

Year

4. Description Preparation Date:

22/2/2023

5. Available Attendance Forms:

Available

6. Number of Credit Hours (Total) / Number of Units (Total)

90/5

7. Course administrator's name (mention all, if more than one name)

Name:	Email:
Jassim Mohammad Saleh	jasim.salih@uobasrah.edu.iq
Hayder Baqer Abdullah	hayder.baqer@uobasrah.edu.iq

8. Course Objectives

Learn about the periodic table, methods for preparing elements, and studying their properties and isotopes.	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2 theoretical + 3 practical	Periodic table	The periodic table and its general properties.	Lecture and Lab.	Weekly and monthly exams, and laboratory reports
2	2 theoretical + 3 practical	Periodic table	Atoms distribution in periodic table		

3		The Hydrogen	Introduction, preparation, isotopes		
4		Hydrogen bonds	Hydrogen bond, Types, isotopes.		
5		Hybridization	Hybridization		
6		Exam.	Monthly Exam.		
7		Group I	Elements, nature availabili		
8		Group I	Preparations and reactions		
9		Group II	Group II Elements, availab and properties		
10		Group II	Preparation and reactions		
11		Group III	Group III Elements, reacti and preparations		
12		Exam.	Monthly Exam.		
13		Group III	Boron Chemistry		
14		Group III	Aluminum Chemistry		
15		Group IV	Elements, Carbon chemistr		
16		Group IV	Silicon Chemistry		
17		Half year Exam.			
18		Half year vacation			
19		Group V	Elements, Nitrogen		
20		Group V	Phosphorous Chemistry		
21		Exam.	Monthly Exam.		
22		Group VI	Elements, nature availabili		
23		Group VI	Oxygen Chemistry		
24		Group VI	Sulphur Chemistry		
25		Group VI	Other Elements		
26		Group VII	Elements, nature availabili		

27 28		Group VII Final Exam	Preparation and Reactions		

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First Semester 25 Degree(Exam to the tasks assigned to the student such as daily preparation, daily oral, monthly), Semester 25 Degree. Final Exam 50 Degree.

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2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

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Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: …**Basrah**……

Faculty/Institute: . **College of Education for Pure Sciences**……

Scientific Department: ….**Chemistry**……

Academic or Professional Program Name: . **Bachelor's Chemistry**……

Final Certificate Name: …… **Bachelor's Chemistry Science**……

Academic System: ……yearly……

Description Preparation Date: **2024-2-24**

File Completion Date: **2024-2-24**

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

1. **Program Vision**
Upholding hope, good deeds and mutual understanding, generation after generation, through balanced education and adherence to the principle that public service is the most noble goal for people and teachers in particular. As well as devising ways to deal with the changing reality of education and a system capable of thinking and decision-making in an integrated manner.

2. **Program Mission**
Spreading knowledge, enriching people's lives with it, motivating them to think scientifically, and realize the impact of science on societal development, and to create an environment conducive to learning and understanding.

3. **Program Objectives**
Graduating teachers with knowledge, critical thinking and a correct vision to impart knowledge and ethics that qualifies its students to achieve the goals of distinguished citizenship coupled with belief in God and the ability of human beings to sustain a dignified life in which mutual respect and accountability.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency?

5. **Other external influences**
Is there a sponsor for the program?

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		
College Requirements	YES			
Department Requirements	YES			
Summer Training	there's nothing			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
phase II		physical chemistry	theoretical	practical
			YES	YES

8. Expected learning outcomes of the program

Knowledge	
1-Illustrate the importance of thermodynamics in our daily lives for students. 2- Clarify the concepts of heat, occupation and energy.	3-Explanation of the student's types of processes and systems and their example in daily life. 4-Clarification of the state functions.
Skills	
1- Acquiring experience of the role and importance of course classes in our daily life.	2-Students' expertise with distinguishing between thermodynamic systems and processes.
3- Acquiring experience in distinguishing types of energy	

in course classes	
Ethics	
1-Developing students' abilities to apply and develop higher scientific and educational ideas.	2-Student's experience in the processing of thermodynamic data

9. Teaching and Learning Strategies

1- Theoretical lectures. 2-Practical lectures. 3-Use video clips to clarify the application of the laws of thermodynamics.

10. Evaluation methods

Weekly, monthly, daily and final-of-year examinations.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
	Chemistry	Physical chemistry			1- Professor 2- assistant professor	

Professional Development

Mentoring new faculty members

Orientation of new faculty members

Professional development of faculty members

Development of delivery skills, practical training, development of communication skills, self-confidence and standing in front of students and the public.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

1-Physical chemistry

2-thermodynamics in question and answer/ AlHamdani and Dhumad

14. Program Development Plan

Work to develop the thermodynamic laboratory by providing it with the tools, devices and materials necessary to increase the number of experiments for each group of students

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Second year		Physical chemistry /thermodynamic	Basic												

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Physical chemistry/thermodynamic
2. Course Code:
3. Semester / Year:
yearly
4. Description Preparation Date:
2024-2-24
5. Available Attendance Forms:
Attending
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours per year. 3 hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Uhood Alhamdani Email: Name: Sadiq Mohamed Hasan Ismael Email: sadiq.ismael@uobasrah.edu.iq
8. Course Objectives

Acquiring experience in distinguishing types energy in course classes. Student Acquisition of Discrimination Experie types of systems and processes in thermodynamic	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	Theoretical lectures and practical experiences

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30		Student Acquisition	thermodynar	Lectures Theoreti and	Weekly, monthly, daily,

		Experience in how to distinguish Between Type Energy and workmanship Explanation o concept Thermal Dynamics Application o laws Thermodynan Ability to Data Handlin Thermal and understanding Charts Its own.		practical + View Methods + Dialog and Discussic	editorial a end-of-yea examinatio

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

1-Physical chemistry, Jordan Baro 2-thermodynamics in question and answ AlHamdani and Dhumad	
PHYSICAL CHEMISTRY, Peter Atkins	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

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Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....**Basrah**.....

Faculty/Institute: .....**Education for Pure Science**.....

Scientific Department: .....**Chemistry**.....

Academic or Professional Program Name: ..... **organic Chemistry**.....

Final Certificate Name: .....**Bachelor of Chemistry**.....

Academic System: .....Annual.....

Description Preparation Date: **5/10/2023**

File Completion Date: **25/2/2024**

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Science always attempt to be one of the promising Higher Education institutions at the University of Basrah, in the field of future education and the scientific research through its scientific, research and administrative activity. Moreover, working on supplying useful route for the students and teachers to make them useful and inventive in the society in the field of chemistry science.

2. Program Mission

Work on manage and graduate the efficient students with highly management and scientific in chemistry, and develop the aptitude in the scientific research that bring benefit to the society and the country.

3. Program Objectives

1- Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.

2- Preparing specialized students capable of serving the community and organizing for the preparation of future specializations.

3- Spreading the culture of scientific and cultural diversity in society, transferring scientific knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4- The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and departments in different colleges to achieve best practices in the fields of education, learning, and scientific creativity.

5- Focusing on the educational and moral aspects of all college members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6- Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of science, laboratories and research achievements.

7- Focusing on the educational and moral aspect of the student and spreading the spirit of

dedication, tolerance and commitment.

4. Program Accreditation

–

5. Other external influences

–

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	90	90	Essential course	
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ Second		Inorganic Chemistry	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Introducing the students to the chemistry of the elements divided in the periodic table under the names of the represented elements, which are divided into seven groups.	1- The student's knowledge of the electronic structure of atoms 2- knowledge the student to the periodic properties of atoms
Skills	
1- The student must master writing the electronic structure of each atom 2- Distinguish between the represented elements and their general properties and characteristics 3- Distinguishing between types of bonds 4- The student receives a set of practical experiments in the laboratory to learn methods for preparing elements and their properties	
Ethics	
Expanding students' awareness of chemistry and the ability to share ideas and present them to middle school students in the future	

9. Teaching and Learning Strategies

1- Explaining the scientific material using PowerPoint and the blackboard, and giving information for each group in the periodic table.
2- Write a review paper for each element present in the group, including its presence in nature, methods of preparation and interactions.
3- Linking theoretical information with practical skills.

10. Evaluation methods

1- Oral exams
2- Monthly exams
3- Annual exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Chemistry	organic Chemistry			Staff	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan
Studying the modern periodic table and developing the curriculum according to modern foundations.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Inorganic Chemistry	Basic	*				*				*			

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
organic Chemistry
2. Course Code:
3. Semester / Year:
Year
4. Description Preparation Date:
22/2/2023
5. Available Attendance Forms:
Available
6. Number of Credit Hours (Total) / Number of Units (Total)
90/5
7. Course administrator's name (mention all, if more than one name)

Name:	Email:
Nezar Latif	nezar.latif@uobasrah.edu.iq
Rehab Gani Abood	rehab.gani@uobasrah.edu.iq

8. Course Objectives	
Learn about the periodic table, methods for preparing elements, and studying their properties and isotopes.	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4	2 theoretical + 3 practical 2 theoretical + 3 practical 2theoretical + 3 practical 2 theoretical + 3 practical	Physical properties Ways to name it Methods of preparit Their interactions	Alkyl halides	Lecture and Lab.	Weekly and monthly exams, and laboratory reports

5 6 7 8	2 theoretica + 3 practical 2 theoretica + 3 practical 2 theoretica + 3 practical 2 theoretica + 3 practical	Physical properties Ways to name it Methods of prepar it Their interactions	Alcohols		
9 10 11 12	2 theoretica + 3 practical 2 theoretica + 3 practical 2 theoretica + 3 practical 2 theoretica + 3 practical	Physical properties Ways to name it Methods of prepar it Their interactions	Phenols		
13 14 15 16	2 theoretica + 3 practical 2 theoretica + 3 practical theoretical + 3 practical 2 theoretica + 3 practical	General formula a composition Their interactions Nucleophyl addition the carbonyl group Condensation reactions a diagnosis of carbo compounds	Aldehydes and ketones		
17 18	2 theoretica + 3 practical 2 theoretica + 3 practical	General formula a composition Its preparation a reactions	Ethers and epoxides		
19 20 21	2 theoretica + 3 practical 2 theoretica + 3 practical theoretical + 3 practical	General formula a composition Her interactions Methods of prepar it General formula and	Carboxylic acids		
22 23	2 theoretica + 3 practical 2 theoretica + 3 practical	physical properties Its preparation a reactions	Derivatives of carboxylic ac		
24 25 26	2 theoretica + 3 practical 2 theoretica + 3 practical theoretical + 3 practical	General formula a physical properties Methods of prepar it Their interactions	Amines		
27	2 theoretica + 3 practical	General formula a physical properties	Organosulfur compounds		

28 29 30	2 theoretica + 3 practical 2 theoretica + 3 practical 2 theoretica + 3 practical	Preparation meth and interactions General formula a physical properties Preparation meth and interactions	Phosphorus compounds		

11. Course Evaluation

First Semester 25 Degree(Exam to the tasks assigned to the student such as daily preparation, daily oral, monthly), Semester 25 Degree. Final Exam 50 Degree.

12. Learning and Teaching Resources

Armstrong, Isobel. Victorian Poetry: Poet poetics and politics.	
- Basic Inorganic Chemistry, F.A.Cotton, G.Wilkinson and P.L.Gaus, 3rd edition, John Wiley and Sons, Inc. New York,	

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

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followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....**Basrah**.....
Faculty/Institute: .....**Education for pure science**.....
Scientific Department: .....**Chemistry**.....
Academic or Professional Program Name: ....**Analytical chemistry**.....
Final Certificate Name: ....**Bachelor of chemistry**.....
Academic System: ..... **Bachelor of chemistry** .....
Description Preparation Date: **5/10/2023**
File Completion Date: **22/2/2024**

Signature:
Head of Department Name:

Date:

Signature:
Scientific Associate Name:

Date:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of teaching and learning the living chemical sciences. .

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in chemistry, its sciences and literature, and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, and emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

1- Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.

2- Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.

3- Spreading the culture of scientific and cultural diversity in society, transferring scientific knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4- The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education, learning, and scientific creativity.

5- Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6- Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of science, laboratories and research achievements.

7- Focusing on the educational and moral aspect of the student and spreading the spirit of dedication, tolerance and commitment.

4. Program Accreditation

NO

5. Other external influences

NO

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	90	90		
College Requirements	yes			
Department Requirements	yes			

Summer Training	**No thing**			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ second		**Analytical chemistry**	**theoretical**	**practical**

8. Expected learning outcomes of the program

Knowledge	
Explaining to the student the importance of analytical gravimetric chemistry and the chemical composition of sediments. A2- The student explains the importance of ion exchanges and their applications. A3- Explaining to the student the methods of chemical separation. A4- The student's explanation of gas chromatography technology and its applications	
Skills	
- The student gains theoretical experience about the role and importance of the course chapters in our daily lives. B2 - The student gains experience in chemical separation methods through the	

course chapters. B3 – The student gains experience in how to benefit from the curriculum vocabulary and apply it on the practical level	
Ethics	
Expanding students' awareness of chemistry and the ability to share ideas and present them to middle school students in the future	

9. Teaching and Learning Strategies

- Theoretical lectures.

2- Using the display screen to deliver lectures.

3- Directing the student to websites to benefit from them.

4- Guiding the student to the sources on which the lectures were organized

10. Evaluation methods

1- Weekly written exams.

2- Questions during the lecture.

3- Quarterly written exams.

4- Final written exams.

5- Quick exams Quiz.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Teacher	chemistry	analytical			staff	

Professional Development
Mentoring new faculty members
Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

1- أسس الكيمياء التحليلية (مؤيد العبايجي ، ثابت سعيد الغبشة).

2- الكيمياء التحليلية الجزء الأول ، الأسس العامة للتحليل الكمي الوزني (صفاء المرعب.

3- طرق الفصل في التحليل الكيميائي (البرتين حبوش).

14. Program Development Plan

Adding practical scientific laboratories that link theory and practice so that students can fully benefit from theory and practice.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Analytical Chemistry
2. Course Code:
Analytical Chemistry
3. Semester / Year:
Year
4. Description Preparation Date:
22/2/2024
5. Available Attendance Forms:
Available
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours in year 5 hour in week
7. Course administrator's name (mention all, if more than one name)
Name: Luma Taher Albaaj Email: Luma.tuma@uobasrah.edu.iq
8. Course Objectives

1 - The student gains theoretical experien about the role and importance of the course chapters in our daily lives. B2 - The student gains experience in chemical separation methods through the course chapters. B3 - The student gains experience in how benefit from the curriculum vocabulary a apply it on the practical level	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	1- Theoretical lectures. 2- Using the display screen to deliver lectures. 3- Directing the student to websites to benefit from them. Guiding the student to the sources on which the lectures we organized.

10. Course Structure	

First course					
Hours	**Week**	**IOLs**	**Topic title**	**Teaching method**	**Assement method**
2	1	Quantitative gravimetric analysis	clarification of the concept of quantitative analysis chemistry (gravimetric) and its types and methods of precipitation based on chemical and electrochemical reactions	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	2	Characteristics of precipitates used in quantitative gravimetric analysis	Types of organic and inorganic precipitants	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	3	The chemical composition of the precipitates	Gravimetric coefficient (examples and problems)	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	4	solubility of precipitates	Calculation of solvation and solvation constant	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	5	Factors affecting solubility	The effects of temperature , nature of substance and the nature of solvent	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	6	Factors affecting solubility	Combined ion effect and complex ion formation	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports

2	7	Crystalline composition of the precipitates	Clarification of the concept of microcrystal volume, growth, and a state of relative oversaturation	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	8	Precipitates formation stages	The nature of precipitates and size of the crystals formed	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	9	colloidal state	Colloidal precipitates agglomeration process	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	10	Precipitation of homogeneous solutions	Introduction to the precipitation process of homogeneous solutions and examples	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	11	Contamination of precipitates	types	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	12	Avoid Contamination of precipitates	Treatment kinds	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	13	Digestion of precipitates	Washing of precipitates	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports

2	14	re- presentation process	drying and burning the precipitate	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
Exams(daily, monthly, final), reports					
2	**17**	Methods of chemical separation	Introduction , kinds	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**18**	Solvent extraction	Distribution coefficient, percentage of extraction	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**19**	Efficiency of separation	Study of factors effecting	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**20**	adsorption	Kinds , Distribution coefficient	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**21**	Classification methods of chromatography	Column chromatography	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**22**	Planer chromatography	Paper chromatography and its application	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**23**	Thin layer chromatography	applications	Lectures (theoretical, practical, presentation methods,	Exams(daily, monthly, final), reports

				conversation, and discussion	
2	**24**	Gel chromatography	definition	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**25**	Gas chromatography	introduction	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**26**	Ion exchange	Fundamentals	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**27**	Properties of Ion exchanges	Selectivity , selectivity coefficient	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**28**	Kinds of exchanges	application	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**29**	Statistical treatment for analysis results	Standard deviation , accuracy and compatibility	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**30**	variation coefficient	F,T,Q experiments	Lectures (theoretical, practical, presentation methods, conversation, and discussion	Exams(daily, monthly, final), reports
2	**31**	Treatment of Statistical results	Mathematical problems	Lectures (theoretical, practical, presentation methods, conversation,	Exams(daily, monthly, final), reports

				and discussion	

11. Course Evaluation	
First Semester 25 Degree(Exam to the tasks assigned to the student such as daily preparation, daily oral, monthly), Semester 25 Degree. Final Exam 50 Degree	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	د العبايجي ' ثابت سعيد الغبشة (اسس الكيمياء التحليلية)
Main references (sources)	
Recommended books and references (scientific journals, reports…)	مؤيد العبايجي ، ثابت سعيد الغبشة (أسس - الكيمياء التحليلية). 2- صفاء المرعب (الكيمياء التحليلية الجزء الأول ، الأسس العامة للتحليل الكمي الوزني. 3- تين حبوش (طرق الفصل في التحليل الكيميائي).
Electronic References, Websites	1- سمير عبد الرحيم، ثابت سعيد الغبشة (مدخل الى تقنيات الفصل في الكيمياء ( ). 2- المحسن الحيدري (التحليل الكيميائي الالي). David Harvey (modern analyti chemistry)

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
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Academic Program and Course Description Guide

2024

Introduction:

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Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

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Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....**Basrah**.....

Faculty/Institute: .....**Education for Pure Science**.....

Scientific Department: .....**Chemistry**.....

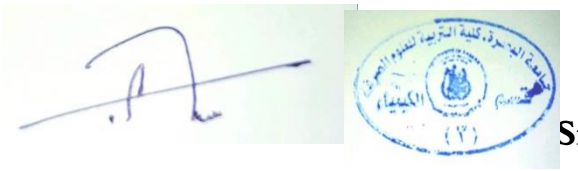
Academic or Professional Program Name: ..... **organic Chemistry**.....

Final Certificate Name: .....**Bachelor of Chemistry**.....

Academic System: .....Annual.....

Description Preparation Date: 5/10/2023

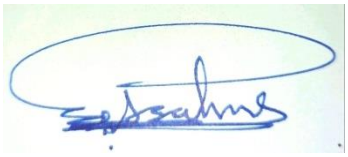
File Completion Date: 24/2/2024

Signature: 

Head of Department

Name:**Prof.Dr.Mouuayed Yousif Kadhum**

Date:

Signature: 

Scientific Associate

Name:**Prof.Dr.Abdulsatar Jaber Ali**

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assis.Prof.Dr.Haider Baqir Ahdalah

Date:

Signature:

Approval of the Dean

Prof.Dr. Majid Mohamed Jasim

1. Program Vision

The College of Education for Pure Science always attempt to be one of the promising Higher Education institutions at the University of Basrah, in the field of future education and the scientific research through its scientific, research and administrative activity. Moreover, working on supplying useful route for the students and teachers to make them useful and inventive in the society in the field of chemistry science.

2. Program Mission

Work on manage and graduate the efficient students with highly management and scientific in chemistry, and develop the aptitude in the scientific research that bring benefit to the society and the country.

3. Program Objectives

1- Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.

2- Preparing specialized students capable of serving the community and organizing for the preparation of future specializations.

3- Spreading the culture of scientific and cultural diversity in society, transferring scientific knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4- The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and departments in different colleges to achieve best practices in the fields of education, learning, and scientific creativity.

5- Focusing on the educational and moral aspects of all college members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6- Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of science, laboratories and research achievements.

7- Focusing on the educational and moral aspect of the student and spreading the spirit of

dedication, tolerance and commitment.

4. Program Accreditation

–

5. Other external influences

–

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	90	90	Essential course	
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ Third		Organic Chemistry	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Familiarize students with organic chemistry, acids, bases, stereochemistry and intermediates	1- Student knowledge of the mediums of organic chemistry 2- Introducing the student to the mechanics of organic chemistry and stereochemistry
Skills	
The student should master vacuum chemistry 2- Distinguishing between organic acids and bases 3- Knowledge of the mechanics of organic reactions and intermediates 4- The student receives a set of practical experiments in the laboratory to know the methods of preparing elements and their properties	
Ethics	
Expanding students' awareness of chemistry and the ability to share ideas and present them to middle school students in the future	

9. Teaching and Learning Strategies

1- Explaining the scientific material using PowerPoint And give information about the intermediates of interaction and mechanics 2- Write a review paper for each medium and take important organic reactions 3- Linking theoretical information with practical skills.

10. Evaluation methods

1- Oral exams
2- Monthly exams
3- Annual exams

11. Faculty

Faculty Members

Academic Rank	Specialization	Special Requirements/Skills	Number of the teaching staff

			(if applicable)			
	General	**Special**			**Staff**	**Lecturer**
t Professor, Doctor	Chemistry	organic Chemistry			Staff	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

Studying the modern periodic table and developing the curriculum according to modern foundations.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Organic Chemistry	Basic	*				*				*			

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Organic Chemistry
2. Course Code:
3. Semester / Year:
Year
4. Description Preparation Date:
24/2/2023
5. Available Attendance Forms:
Available
6. Number of Credit Hours (Total) / Number of Units (Total)
90/5
7. Course administrator's name (mention all, if more than one name)

Name:	Email:
Dawood Salem Abid	dawood.abid @uobasrah.edu.iq
Dakhal Zaqer	
Ahmed Abdalhade Majed	eduppg.ahmed.majed @uobasrah.edu.iq

8. Course Objectives	
Identify stereochemistry, acids, bases, intermedia and reaction mechanisms	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretica + 3 practical	Stereochemistry	Stereochemistry a isomers Fisher a Neumann form (stereochemistry	Lecture and La	Weekly and monthly exams, and laboratory reports
2	2 theoretica + 3 practical	Stereochemistry			

3		Stereochemistry	circulation Acids factors affecting acidity		
4		Acids	increase Rules and factors affecting the increase of basicity		
5		Base	Monthly exam		
6		Exam.	Knowledge of the intermediates of organic chemistry		
7		Intermediates	Knowledge of the carbonium ion, the influencing factors		
8		Carbonium ion	the names of reactions and migration on the carbon atom Knowing the negative carbanion ion, the influencing factors, the names of reactions		
9		Carbonium ion			
10		Carbanione Ion			
11		Carbanione Ion Exam.	migration on the carbon atom and oxygen Knowledge of the mechanism of reaction and alkyl halides, the nature of the product formation and the influencing factors Mid-year exam Half Vacation Year Knowledge of reaction mechanics Necophilic compensation for alkyl halides and the nature of product formation Introduction to deletion reactions, factors affecting them and the products formed Knowledge of the intermediates and products of reaction mechanisms Ellipsis and influencing factors Monthly exam Knowledge of the		
12		Mechanism Reaction			
13		Mechanism Reaction			
14		SN2			
15		SN1			
16		Half year Exam.			
17		Half year vacation			
18		Elimination rection			
19		E1			
20		E2			
21		Exam.			
22		E1CB			
23		Heterocyclic Compounds			
24					
25		Heterocyclic Compounds			
26		Heterocyclic			

27 28		Compounds Final Exam	intermediates and products of reaction mechanisms Ellipsis and influencing factors (naming heterocyclic compounds) Final Exam		

11. Course Evaluation

First Semester 25 Degree(Exam to the tasks assigned to the student such as daily preparation, daily oral, monthly), Semester 25 Degree. Final Exam 50 Degree.

12. Learning and Teaching Resources

organic chemistry by Morrison and Boy 2edition ,prentice-hall,2007	
Organic chemistry by Paula Yyrkanis;6 edition, prentice-hall,2010 Organic chemistry by Janice Gorzynski ;3 edition, McGraw-Hil,2011	

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Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: **University of Basrah**
Faculty/Institute: **College of Education for pure sciences**
Scientific Department: **Chemistry**
Academic or Professional Program Name: **Inorganic Chemistry**
Final Certificate Name: **Chemistry Bachelor**
Academic System: **Chemistry Bachelor**
Description Preparation Date: **25/2/2024**
File Completion Date: **25/2/2024**

Signature:	**Signature**:
Head of Department	**Scientific Associate**
Name:**Prof.Dr.Mouuayed**	**Name**:**Prof.Dr.Abdulstar**
Yousif Kadhum	**Jaber Ali**
Date:	**Date**:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Assis.Prof.Dr. Haider Baqir Abdallah
Date:
Signature:

Approval of the Dean

1. Program Vision

The College of Education seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of chemistry education and teaching.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in chemistry and its sciences and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively.

3. Program Objectives

The primary objectives of the Inorganic Chemistry major are:
1- Describe the fundamental information of coordination chemistry to the students.
2- Understanding the chemical structure and geometry of coordination complex from the teachers' presentations.
3- Obtain knowledge of the most applicative theory that describe the coordination complex structure.
4- Understand the hybridization and geometry of the coordination compounds.

4. Program Accreditation

–

5. Other external influences

–

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	yes			
Department Requirements	yes			
Summer Training	–			
Other	–			

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ 3rd stage		Inorganic Chemistry	theoretical	practical

8. Expected learning outcomes of the program

Knowledge

1. A coordination compound, any of a class of substances with chemical structures in which a central metal atom is surrounded by nonmetal atoms or groups of atoms, called ligands, joined to it by chemical bonds. Coordination compounds include such substances as vitamin B_{12}, hemoglobin, and chlorophyll, dyes and pigments, and catalysts used in preparing organic substances.

2. A major application of coordination compounds is their use as catalysts, which serve to alter the rate of chemical reactions. Certain complex metal catalysts, for example, play a key role in the production of polyethylene and polypropylene.

3. Organometallic coordination is a branch of coordination chemistry have provided an motivation to the development of organometallic chemistry. Organometallic coordination compounds are sometimes characterized by "sandwich" structures, in which two molecules of an unsaturated cyclic hydrocarbon, which lacks one or more hydrogen atoms, bond on either side of a metal atom. This results in a highly stable aromatic system.

Skills
Coordination chemistry should also possess the following specific skills: 1. Analytical skills. 2. Communication skills. 3. Critical-thinking skills. 4. Interpersonal skills. 5. Math skills. 6. Perseverance. 7. Problem-solving skills
Ethics
1- Developing students' abilities to share ideas 2- Involving students in the lecture by asking questions and answering those questions with the participation of all students.

9. Teaching and Learning Strategies

1. Choose the teaching tool.
2. Each lecture counts, especially.
3. Keep your lecture up to date.
4. Diversify your teaching methods: a) The bilingual teaching. b) The multimedia teaching.
5. Try to make your more interesting.
6. Use analogy or comparison, make.
7. Introduce memorization tricks.
8. Combine coordination theory.

10. Evaluation methods

There are two assessment methods in coordination chemistry:
1- Theoretical assessment via short quiz, few exams, oral exam, ands final exam.
2- The assessment uses laboratory measurements of coordination compounds synthesis analyses

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			staff	lecture
Professor	Chemistry	Inorganic Chemistry			staff	
Assist.prof.	Chemistry	Inorganic Chemistry			staff	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

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Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

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13. The most important sources of information about the program

1- M.Gerloch and E.C.Constable,"Transition metal chemistry",Weinheim, NewYork, 1994.
2- G.D. Tuli,R.D. Madan,S.K. Basu, "Advanced Inorganic chemistry" Published by S. Chand & Company Ltd

14. Program Development Plan

1- Plan and conduct complex projects in basic and applied research.
2- Manage laboratory teams and monitor the quality of their work.
3- Isolate, analyze, and synthesize coordination compounds.
4- Research the effects of knowledge received from inorganic chemistry.
5- Technical and Communication.
6- Critical Thinking and Multitasking.
7- Teamwork, Creativity, and Leadership.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
		Inorganic Chemistry	Basic	x					x					x	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name: Inorganic Chemistry

2. Course Code:

3. Semester / Year: 2023 - 2024

4. Description Preparation Date: 25/2/2024

5. Available Attendance Forms: Attendance only

6. Number of Credit Hours (Total) / Number of Units (Total)

90 hours yearly, 3 hours weekly

7. Course administrator's name (mention all, if more than one name)

Name: Prof.Rafid H. Al-Asadi
Email: rafid.abbalabass@uobasrah.edu.iq
Name: Assist.prof. Raed A. Alharis
Email: read.alharis@uobasrah.edu.iq

8. Course Objectives

1- The student's explanation of the importance of coordination chemistry in various fields.

2- The student gains an understanding and understanding of the correct chemical structure of the coordination compound through the presentation provided by the teacher.

3- Obtaining knowledge about the most important theories that dealt with the chemical structure of coordination complexes.

4- Knowing the types of hybridization and geometric shapes of coordination complexes.

9. Teaching and Learning Strategies

1- Theoretical lectures.
2- Using the display screen to deliver lectures.
3- Directing the student to websites to benefit from them.
4- Guiding the student to the sources on which the lectures were organized

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to coordination chemistry	Historical view of coordination chemistry development	1-Theoretical lectures. 2-Using the display screen to deliver lectures 3-Guiding the student to websites to benefit from them. 5-Guiding the student to the sources on which t lectures were organized	1- Weekly written exams 2-Questions during the lecture. 3-Quarterly written exams. 4- Final written exams. 5- Quick exams Quiz. 6- Homework
2	2	Coordination complex	Transition metals charecters		
3	2	Coordination numbers	Essential of Coordination numbers		
4	2	Coordination complex	Ligands		
5	2	Coordination complex	nomenclature		
6	2	Coordination complex	Nomenclature examples		
7	2	Coordination complex theory	Effective atomic number		
8	2	Coordination complex theory	Chain and werners' coordination theory		
9	2	Coordination complex theory	Valance bond theory		
10	2	Coordination complex theory	Valance bond theory		
11	2	Coordination complex theory	Valance bond theory		
12	2	Coordination complex theory	Crystal field theory		
13	2	Coordination complex theory	Crystal field theory		
14	2	Coordination complex theory	Crystal field theory		
Mid term holiday					
17	2	Coordination complex theory	Molecular orbital theory	1-Theoretical lectures. 2-Using the display screen to deliver lectures 3-Guiding the student to websites to benefit from them. 5-Guiding the student to the sources on which lectures were organized	1- Weekly written exams 2-Questions during the lecture. 3-Quarterly written exams. 4- Final written exams. 5- Quick exams Quiz. 6- Homework
18	2	Coordination complex theory	Molecular orbital theory		
19	2	Coordination complex theory	Molecular orbital theory		
20	2	Coordination complex isomers	Types of isomers		

21	2	Coordination complex isomers	Examples of isomers		
22	2	Synthesis of Coordination complex	Reaction in solvent, non-solvent and without solvent		
23	2	Synthesis of Coordination complex	Thermal degradation, Redox, and catalyst reactions		
24	2	Coordination complex stability	Thermodynamic and kinetic stability		
25	2	Coordination complex stability	Factors affect the stability		
26	2	Coordination complex kinetics mechanisms	Bond chain elimination reaction		
27	2	Coordination complex kinetics mechanisms	Bond chain addition reaction		
28	2	Coordination complex kinetics mechanisms	Redox reaction and mechanism		

11. Course Evaluation

Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any	Coordination Inorganic Chemistry, written by Dr. Ihsan Abdel Ghani.
Main references (sources)	1- Inorganic chemistry and transitional elements, principles of symmetry, Dr. Noman Saad Al-Nuaimi and his group. 2- Coordination Chemistry, written by Dr. Issam Girgis. 3- Chemistry of transition elements, written by Dr. Mahdi Naji Al-Zakum
Recommended books and references (scientific journals, reports...)	1- M.Gerloch and E.C.Constable,"Transition metal chemistry",Weinheim, NewYork, 1994. 2- G.D. Tuli,R.D. Madan,S.K. Basu, "Advanced Inorganic chemistry" Published by S. Chand & Company Ltd
Electronic References, Websites	

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Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: …**Basrah** ……

Faculty/Institute: ……. **Education for pure sciences**……..

Scientific Department: …**chemistry**……

Academic or Professional Program Name: …….**chemistry**…..

Final Certificate Name: …….. **chemistry**……

Academic System: **…… yearly** …

Description Preparation Date: **5/10/2023**

File Completion Date: **24/2/2024**

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

Program vision is written here as stated in the university's catalogue and website.

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving society in various fields

2. Program Mission

Program mission is written here as stated in the university's catalogue and website.

Working to prepare and graduate leading scientific and leadership competencies in various sciences and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, and emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

General statements describing what the program or institution intends to achieve.

1. Embodying the vision, mission and goals of the University of Basra and applying the best educational practices with a focus on ensuring and enhancing quality and performance. 2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations. 3. Spreading the culture of human diversity in society, transferring knowledge and linguistic skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities. 4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and learning. 5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation. 6. Paying attention to intellectual and cultural construction through openness to the experiences of

other countries in the fields of science. Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

nothing

5. Other external influences

Is there a sponsor for the program?

nothing

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				Basic course
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	nothing			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/Third		The scientific research	theoretical	practical

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1 Informing students about the importance of scientific research, how the student prepares the research correctly, and how to present data in the research and deliver the research	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2 How to search for sources and learn to write scientific research	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Understanding and analyzing data And how to display it in the search Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

1- Giving examples and locations to search for sources.

2- Methods of quoting from sources

3- Follow the appropriate research approach in using data, methods of presenting it, and analyzing the results

10. Evaluation methods

Implemented at all stages of the program in general.

Weekly, monthly, daily exams and the end of the year exam.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
assistant teacher	chemistry	Physical chemistry			staff	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. **The most important sources of information about the program**
State briefly the sources of information about the program. Prof. Dr. Jabbar Khattar Al-Zuwar, Scientific Research Methodology - 2014. Dr. Younis Crowe Al-Azzawi, Introduction to Scientific Research Methodology, 2008. Dr. Kamal Dashli, Scientific Research Methodology, 2016. Dr.. Imad Khalil Eidan, Rules and foundations of citation and documentation in scientific research, 2021. A, Nabila Brik, Dr. Sulaf Mishri, Citation Controls and Respect for Intellectual Property, 2019.

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		The scientific research method	Basic												

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
The scientific research method
2. Course Code:
3. Semester / Year:
yearly
4. Description Preparation Date:
24/ 02/ 2024
5. Available Attendance Forms:
presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours yearlly. 2 hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Maitham Najim Abbood Email: maytham.abbood@uobasrah.edu.iq
8. Course Objectives

Course Objectives 1-The student learns the methodology o scientific research 2-The student learns how to obtain sources 3-The student learns how to present a publish scientific research	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
			The scien research meth	1-Explaining scientific	Weekly, monthly, da

		1- Providing students with t skill of analyzir information 2-Learn the ste of writing scientific resea 3-How to different meth to disp information		material by providing examples 2- Clarifying t basic points f finding sourc and how to quote them t write scientif research 3- How review information obtained	written exa and the end year exam.

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Prof. Dr. Jabbar Khattar Al-Zuwar, Scient Research Methodology - 2014. Dr. Younis Crowe Al-Azzawi, Introduction Scientific Research Methodology, 2008. Dr. Kamal Dashli, Scientific Resea Methodology, 2016.
Recommended books and references (scientific journals, reports…)	Dr.. Imad Khalil Eidan, Rules and foundati of citation and documentation in scient research, 2021. A, Nabila Brik, Dr. Sulaf Mishri, Citat Controls and Respect for Intellect Property, 2019.
Electronic References, Websites	

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

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Academic Program Description Form

University Name: ……**University of Basrah**…….

Faculty/Institute: …… **College of Education for Pure Sciences**……

Scientific Department: …… **Chemistry**……

Academic or Professional Program Name: … **Bachelors**…….

Final Certificate Name: ….. **Bachelors of Chemistry**……

Academic System: **……Annual……**

Description Preparation Date: **05/10/2023**

File Completion Date: **25/02/2024**

Signature:

Head of Department Name: **Dr. Mouayed Yousif Kadhum**

Date:

Signature:

Scientific Associate

Name:**Prof.Dr.Abdulsatar Jaber Ali**

Date:

Academic lecture names

Dr. Ahmed Majeed Jassem **Dr. Faeza Abdul Kareem Almashal** **Dr. Tahseen Alsalim**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assis.Prof.Dr.Haider Baqir Abdalah

Date:

Signature:

Approval of the Dean

Prof.Dr. Majid Mohamed Jasim

Course description form

Description of the organic diagnosis course for the fourth stage

The course is divided into several chapters for the first and second semesters. The subject of spectroscopic organic diagnosis deals with the basic principles of diagnosis in addition to the use of modern techniques and spectroscopic methods in organic diagnosis, which are: Infrared spectroscopy, nuclear magnetic resonance spectroscopy, ultraviolet and visible spectroscopy, and finally mass spectroscopy, where the topic deals with a description of each technique, its scientific basis, and the composition of the gases, taking multiple models of spectra and teaching students how to benefit from them in knowing the chemical composition of the compound. In addition to linking the four techniques to extract the composition of an unknown substance. As for the practical part, it is a diagnosis using the classical methods used for the purpose of knowing the composition of the unknown substance.

University of Basra/ College of Education for Pure Sciences	Educational institution .1
Chemistry	Scientific department/center .2
Organic diagnosis	Course name/code .3
Official working days	Available forms of attendance .4
Annual/fourth stage	Semester/year .5
46	Number of study hours (total) .6
	The date this description is prepared .7
Course objectives .8	
Explaining to the student the importance of organic diagnosis in our daily lives	
The student gains understanding and understanding of the course chapters through the presentation provided by the instructor.	

The student gains experience in interpreting spectra and components of the devices used.
Knowing and distinguishing different organic compounds through their spectra.

Course outputs, teaching, learning and evaluation methods

Knowledge goals

A- A clarification of the student is the importance of organic diagnosis in our daily life.

B- Explanation of the student how to interconnected organic compounds.

C- A clarification of the student is the most important chemical and physical characteristics of each type of organic chemistry.

D- Explanation of the student how to take advantage of the diagnosis in detecting the installation of materials.

E- Connecting diagnosis and detection of the purity of materials, especially pharmaceutical or non-pure

The skills goals of the course.

A - The student acquires the experience of the role and importance of the classes in our daily life.

B- The student acquires experience in distinguishing between the items of organic compounds m during the diagnosis and the control.

C - The student acquires an experience in how to link spectral techniques by extracting the installation.

Teaching and learning methods

1- Theoretical lectures.

2- Practical lectures.

3- Use the display screen to meet the lectures.

4- Guiding the student to the websites to benefit from them.

5- The student's guidance to the sources that were organized on the basis of the lectures.

Evaluation methods

1- Weekly editorial exams.

2- Questions during the lecture.

3- Confidential editorial exams.

4- Final examinations.

5- Quiz fast exams.

Public and rehabilitation skills (other skills related to employment and personal development). The student's acquisition of experience in how to deal with spectra, interpret her, and extract information from them, which is essential and specific, to develop the student's ability to complete postgraduate studies for master's and doctorate.

The course development plan
Add practical scientific laboratories that link theoretical to the practical so that the students fully benefit in theoretical and practical and inserting sub -infrared devices to the laboratories to connect the practical to the theory.

Infrastructure

1- The required books required: **Organic Chemistry**, Dr. Muhammad Shaker
2- The main references (sources) **Introduction of Spectroscopy** : Donald L. Pavia
3- The books and references recommended (scientific journals, reports, ...etc)
4- There is no specialized book in Arabic, so we recommend that we translate the Pavia book because it is a comprehensive book for organic diagnosis.

Rapporteur structure					
Evaluation methods	**Teaching method**	**Unity Name / Or Topic**	**Required learning outcomes**	**Hours**	**Week**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	A neighborhood through which electromagnetic radiation, radiation types, frequencies, wavelengths are clarified and their energies	Electromagnetic radiation	2	1
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Learn about energy levels and how the electronic transition occurs and the vulnerability depends on the powerful energy	Electronic transfers between the levels	2	2
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	A basic and detailed explanation of this infrared rays and how to benefit from it in the spectra	Infrared	2	3
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	A detailed clarification to an infrared technique that deals with the scientific basis and an explanation of the Hijazar spectra and how to divide the frequencies	Redly	2	4
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	An explanation of the Hook and its derivation law and the relationship between the constant of the power of the basis and the scattered block with the frequency	Hook Law	2	5
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and	Each group is effective	Explain the ribs of the stretching and bending that occurs due to the infrared radiation	2	6

	discussion Lectures				
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where it is divided into several homogeneous and incomplete types in addition to the number of bends that urge a specific group and the difference between written and non -linear molecules in the number of vibration patterns	Interpretation of a spectrum under the red	2	7
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where the spectrum is divided into two regions, the first is vibrating and clarifying the location of each effective group and the other region, which is the fingerprint with the explanation of the types of vibratory beams and how to distinguish between a job group and another	Various examples of sub -shades	2	8
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Various types of sub -shades are displayed, the interpretation of each spectrum, and the chemical composition is extracted.	Magnetic nuclear resonance	2	9
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	A general explanation of technology and radio radiology and how electronic transition is done	Factors affecting chemical displacement	2	10
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where the factors affecting the chemical displacement are clarified, through which it is possible to distinguish between the types of bronons in the organic molecule	Doubt and environments	2	11
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where the types of environments in which the proton is clarified and how duplication occurs between protons and distinguish between them	Examples of resonance	2	12
Daily,	Lectures	View a set of spectra and student education on how to extract	Connecting infrared and magnetic	2	13

monthly, and final tests, and daily reports	Theoretical and practical + Display methods +Dialogue and discussion Lectures	information from the spectrum and determine the type of installation	nuclear resonance		
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Examples show Keqia extracting an unknown material through the spectra	Carbon magnetic nuclear resonance	2	14
Half a year holiday					
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Half a year holiday	Ultraviolet conquest	2	**15**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Introduction to ultraviolet and electronic transfers and explaining the Bir Lambert Law	Visual	2	**16**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Electronic transfers and their types between electronic orbits, the permitted statement, location, and wavelengths of each transition	Types of electronic transfers	2	**17**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	How the electronic transition and the factors affecting the red and blue displacement occurred	Effecting Factors on electronic transfers	2	**18**

Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where the nature of the transfers is clarified in the visible spectra and the relationship between the absorbed light and the color	Smalls of the visual area	2	**19**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where types of examples are displayed on the electronic spectra of the visible area and above purple and information is extracted from the spectrum	Examples of electronic spectra	2	**20**
Daily, monthly, and final tests, and daily reports	Lectures Theoretical and practical + Display methods +Dialogue and discussion Lectures	Where the sub -shades are displayed, nuclear resonance, and electronic drums for an unknown compound only the formula of positivism, and through the interpretation of each type of spectra and linking it, we can know the chemical composition of the unknown boat	Applications	2	**21**

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

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In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

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Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

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Academic Program Description Form

University Name: **University of Basrah**……

Faculty/Institute: …**College of Education for Pure Sciences**…….

Scientific Department: **Chemistry**

Academic or Professional Program Name: **MSc**. **Chemistry**

Final Certificate Name: **MSc**. **Chemistry**

Academic System: Annual

Description Preparation Date: **25/2/2024**

File Completion Date: **25/2/204**

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of general science education.

2. Program Mission

To prepare and graduate leading scientific and leadership competencies in chemistry and to develop the balance of knowledge in the field of scientific research to serve the local, regional, and international community, as well as training and refining the minds of students scientifically and cognitively, and emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

1. Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance. 2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations. 3. Spreading the culture of human diversity in society, transferring scientific knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities. 4. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation. 5. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of languages, literature and translation. Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

Non-available

5. Other external influences

Non-available

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	44	44		Basic course
College Requirements				
Department Requirements				
Summer Training	Non			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/4th		Physical chemistry	theoretical	

8. Expected learning outcomes of the program

Knowledge	
Informing students about the importance of physical chemistry - quantum chemistry in explaining the atomic and molecular structure of chemical compounds.	
Skills	
The student gains experience in dealing with the various theories available to explain atomic structure and spectra.	
Learning Outcomes 3	The student gains experience in dealing with the various theories available to explain atomic structure and spectra.
Ethics	
	Learning Outcomes Statement 4
	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

1. Explanation of the material based on available scientific, methodological and auxiliary sources. 2- Linking the theoretical foundations presented with the various disciplines of chemistry and highlighting the importance of the course as a basis for understanding them.

10. Evaluation methods

Monthly exams and the end-of-year exam.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	Chemistry	Physical Chemistry				

Professional Development

Mentoring new faculty members

Orienting new faculty members

Professional development of faculty members

Professional development for faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

Quantum Chemistry and Molecular Spectroscopy. By Q. Abdul Kareem

Basics of Quantum Chemistry. By S. Salim.

14. Program Development Plan

1- Increasing the number of teaching hours for the subject to three hours due to the importance of the subject, especially since the trend of global scientific research now is towards computational chemistry, for which quantum chemistry is the basis, even if it is at the expense of some lessons, more than 85% of which are completed during the first semester. Of the school year. The theoretical aspect must be supported by the practical aspect by making the subject into two parts, theoretical and practical, which are conducted in the laboratory to complete the benefit of the subject.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name: Physical Chemistry

2. Course Code:

3. Semester / Year: Year

4. Description Preparation Date: 24/2/2024

5. Available Attendance Forms: Attendance only.

6. Number of Credit Hours (Total) / Number of Units (Total) 44, 2 hourse weekly.

7. Course administrator's name (mention all, if more than one name)

Name: Dr. Bahjat Ali Saeed
Email: bahjat.saeed@uobasrah.edu.iq

8. Course Objectives

A1- Explain to the student the following The importance of quantum chemistry in understanding the universe. There are two principles to explain the nature of energy: the principle of continuous energy and quantized energy, the principle of quantized energy is the correct principle. A3- The most important equations on which class mechanics and quantum mechanics are based. A4- How to derive the Schrodinger equation. A5- Principles quantum mechanics. A6- How to use quantum mechanics in studying and interpreting molecular spectra.

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1 2 3	2 2 2	Understandin the structure bodies and v surrounds	Physical Chemistr	Learning method Explaining scientific material ba	Monthly exams and the end-of-year exam

4 5 6 7 8 9 10 11 12 13 14 15 Holid 16 17 18 19 20 21 22	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	humans understandin the theoret foundations necessary explain chem composition		on available methodolog and auxil books	

11. Course Evaluation

As follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Quantum Chemistry a Molecular Spectroscopy
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Basics of Quantum Chemistry
Electronic References, Websites	

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

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2024

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This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Basrah
Faculty/Institute: College of education for pure science
Scientific Department: Department of chemistry
Academic or Professional Program Name: Chemistry
Final Certificate Name: Bachelors of science in chemistry
Academic System: Annual system
Description Preparation Date: 23/2/2024
File Completion Date: 23/2/2024

Signature:
Head of Department Name:

Date:

Signature:
Scientific Associate Name:

Date:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basrah in the field of modern education and scientific research through its scientific, research and administrative activities, and also works to provide an integrated path for its students and professors to make them active and creative in community service in the fields of applied sciences and education.

2. Program Mission

The Department of Chemistry was established in the academic year 1975-1976 and together with the Department of Life Sciences formed one department and in 1982-1983 it became an independent department. The department awards a Bachelor's of Science degree in chemistry where the graduate is qualified to teach chemistry in public secondary schools. Accordingly, pioneering scientific and leadership competencies will be prepared and graduated in applied sciences and in an attempt to develop the knowledge balance in the field of scientific research to serve the local and international community, as well as training and refining students' minds scientifically and cognitively, and emphasizing social and cultural values.

3. Program Objectives

1. Embodying the vision, mission and objectives of the University of Basra, and applying the best educational practices with a focus on quality assurance and performance and enhancement.
2. Preparing specialized staff capable of serving the community and preparing for the preparation of future specializations. These staff are qualified to contribute to the service of development and comprehensive development that Iraq seeks and witnesses in various areas of life through the ability to occupy specialized positions in the public and private areas.
3. Spreading the culture of human diversity in society, transferring scientific knowledge and skills, writing academic research and achievement.
4. The college seeks to conclude scientific and cultural cooperation agreements with the corresponding colleges and the corresponding departments in the various colleges to achieve the best practices in the fields of teaching and learning.

4. Program Accreditation

Depend on the programs offered by the Ministry of Higher Education and Scientific Research, the University of Basra, the College of Education for Pure Sciences and the Department of Chemistry in line with and develops the educational process.

5. Other external influences

Non

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training	Non			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/ 4th		**Environmental pollution**	**theoretical**	
2023-2024/ 2nd		**Analytical chemistry**	**theoretical**	**practical**
2023-2024/ 1st		**English**	**theoretical**	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	1. Teaching and clarifying students analytical chemistry and instrumental analysis 2. Teaching and clarifying organic chemistry students 3. Teaching and clarifying inorganic chemistry students 4. Teaching and clarifying physical chemistry students 5. Teaching and clarifying biochemistry students

	6. Teaching and clarifying nuclear chemistry students 7. Teaching and clarifying students industrial chemistry 8. Teaching and clarifying students organic diagnosis 9. Teaching and clarifying quantum chemistry students 10. Teaching and clarifying polymer chemistry students 11. Teaching and clarifying electrochemistry students 12. Teaching and clarifying environmental pollution students
Skills	
Learning Outcomes 2	Teaching students ways to control and get cleared of types of pollution.
Learning Outcomes 3	1. Program-specific skills objectives 2. Conducting practical experiments in scientific laboratories according to each specialty. 3. The student acquires scientific skill in conducting scientific experiments. 4. The student acquires practical experience in conducting scientific experiments and how to address errors during the experiment. 5. The student acquires the skill and practical experience in analyzing and discussing the results of practical experiments after the end of each experiment. 6. Viewing and applying students of the finished stage in middle and high schools.
Ethics	
Learning Outcomes 4	1.Developing students' abilities to solve environmental problems in simple ways and focusing on the theoretical scientific aspect to serve the environment and develop knowledge in this field. 2. Providing studies and consultations in the field of chemistry to various scientific and industrial institutions. 3. Contribute to the scientific progress of chemistry through scientific research or participation in local, Arab and international conferences.
Learning Outcomes 5	Enriching the Arabic library by contributing to the writing of chemistry books in Arabic and translating many international books in this field into Arabic, as well as writing scientific books in Arabic

9. Teaching and Learning Strategies

1- Explanation of the scientific material of equations, shapes and related tables.
2- Reviewing previous lectures and linking ideas through discussions on the topics presented to students and using references and electronic resources.
3- Focusing on how to get rid of the damage of environmental pollution of all kinds in environmentally friendly ways and focusing on green chemistry.

10. Evaluation methods

1- Weekly written exams.
2- Questions during the lecture.
3- Quarterly written exams.
4- Final written exams.
5- Writing scientific reports.
6- Rapid quiz exams.
7- Homework.
Committees to discuss graduation projects for students of the finished stage.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor	Chemistry	Analytical Chemistry/ Instrumental Analysis			Staff	

Professional Development

Mentoring new faculty members

Mentoring new faculty members.

Professional development of faculty members

Professional development of faculty members.

12. Acceptance Criterion

First, the conditions for admission to the college:
1- Approving the admission requirements for students in accordance with the regulations of the Ministry of Higher Education and Scientific Research (Central Admission)
2- To successfully pass any special test or personal interview that the College or University Council deems appropriate.
3- To be medically fit for the specialization applied for.

Second: Admission requirements in the scientific department:
1- Choose the student's desire from more than one desire arranged according to preference.
2- High school acceptance rate.
3. The average of the course of the department in which the student wishes to study.
4- The absorptive capacity of the scientific department.

13. The most important sources of information about the program

1 - The needs of secondary and middle schools for chemistry.
2 - Local trends.
3- Industrial and economic trends.
4 - Studies and questionnaires.
5- Specialized seminars and workshops with the beneficiary parties.

14. Program Development Plan

1. Clarifying the scientific material and reviewing many recent research in the field of pollution and linking the scientific side and the applied side and understanding the standards and methods adopted in solving the problems of natural and industrial environmental pollution of all kinds. Taking care of the practical aspect is through the addition of practical scientific laboratories that link the theoretical with the practical in order for students to fully benefit in theory and practical.

2. Conducting scientific trips to different areas that include access to industrial and radioactive air and water pollution in Basrah Governorate with a research that includes those observations and values obtained from the direction, that is visited and the measurement method used and make it as a contribution from the College of Education for Pure Sciences in this field, and accordingly the percentages obtained from the areas visited are included as an assistant to the old curriculum.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024		Environmental pollution	essential												
2023-2024		Analytical chemistry	essential												
2023-2024		English	Secondary												

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name: Environmental pollution
2. Course Code:
3. Semester / Year: Year
4. Description Preparation Date: 23/2/2024
5. Available Attendance Forms: Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: Hanan Murtada Ali Email: hanan.murtada@uobasrah.edu.iq
8. Course Objectives

1- Explain to the student the importance of recognizing the seriousness of environmental pollution in our lives. And clarify the most important modern ideas in understanding th natural and industrial environmental pollution of air, water and soil, as well as noise pollution and the causes of each o these types and control them. 2- Providing students with the skill of developing construct concepts and ideas to reach the crystallization of knowledg among students about trying to control various types of pollution or reduce their impact. 3- The student acquires the understanding, awareness and ability to clarify the prescribed classes through the presentation provided by the teacher. 4- Knowing and distinguishing different chemical compour in the course chapters and thus identifying what is useful ar harmful to the environment. 5- The student acquires theoretical experience in dealing wi the safety of his environment and how to avoid various diseases and environmental disasters. 6- Finding new solutions to get rid of pollution thro discussions, construction and writing reports on various to on pollution.	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	1- Education strategy using the cooperative concept. 2- Education strategy by developing a series of observations and logical thinking to solve problems. 3- Education strategy by developing solutions and linking the theoretical concept with practical application intelligently.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Environmental pollution and its relationship to the natural balance.	Clarifying the concept of pollution, its definition and types with examples and observations.	Theoretical	Quick exams
2 and 3	4	Air pollution	Its definition, types, air components, the cross-effects of its components, and the consequent environmental disasters.	Theoretical	Quick exams
4	2	Diseases resulting from air pollution.	Types and causes	Theoretical	Quick exams
5	2	Some natural phenomena.	Their effects on the environment	Theoretical	Quick exams
6	2	Air pollution by radiation.	Its definition and effects on living organisms and the environment	Theoretical	Quick exams
7	2	Air pollution with oxides	its destructive effects on humans - property and plants and ways to control	Theoretical	Quick exams

			them		
8 and 9	4	Water pollution	Definition, types and basic water pollutants	Theoretical	Quick exams and provide a theoretical report on a specific environmental problem.
10 and 11	4	Methods used to measure the amount of pollutants consuming oxygen.	Their importance and types, a comparison between the two methods, a discussion of the submitted report with students and some observations	Theoretical	Quick exams
12	2	Aerobic and anaerobic bacteria.	Their types, their relationship to the methods used, and the chemical equations for each of them	Theoretical	Quick exams
13	2	Water pollution with washing powders.	Its types, mechanism of action, the effect of the activating agent on it, and how to control this type of pollution	Theoretical	Quick exams
14	2	Water pollution with crude oil and petroleum materials and water pollution with radiation.	Definition, causes and methods of control	Theoretical	Quick exams
Midyear holiday					

17	2	Thermal pollution of water and pollution with suspended materials and sediments.	Explained in detail	Theoretical	Quick exams
18	2	Water pollution with mineral acids, water pollution with salinity and water pollution with disease germs.	Explained in detail	Theoretical	Quick exams
19	2	Application			
20	2	Application			
21	2	Application			
22	2	Application			
23	2	Application			
24	2	Application			
25	2	Water pollution with radioactive materials and the generation of electrical energy by nuclear fuel.	Explained in detail	Theoretical	Quick exams
26 and 27	4	Methods of controlling water pollutants.	Explained in detail	Theoretical	Quick exams
28 and 29	4	Solid waste pollution.	Definition, types, importance and disposal methods	Theoretical	Quick exams

30	**2**	**Noise pollution.**	**Definition and types with examples and observations**	**Theoretical**	**Quick exams**
31	**2**	**Causes of noise pollution and methods of noise control.**	**Explained in detail with a presentation of some related pathological conditions**	**Theoretical**	**Quick exams**

11. Course Evaluation

The distribution is as follows: 25 degrees monthly and daily exams for the first semester. 25 degrees monthly and daily exams for the second semester. 50 marks for final exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Dr. Latif Hamid Ali, Industrial pollution sources, Pollution Chemistry, Control Methods, 1987.
Main references (sources)	1- Dr. Hamed Al-Saad (air pollution). 2- Selected articles from the net.
Recommended books and references (scientific journals, reports…)	1. J. Jeffrey P., P. Aarne V., Ruth F. W., Environmental pollution and control, 4th ed., 1997 2.Richard W. B., Donald L. F., D. Bruce T. and Arthur C. S., Fundamentals of air pollution 4th edition, 2008. 3.P. K. Goel, 2006, Water Pollution: Causes, Effects and Control. 4.D. Vallero, 2014, Fundamentals of Air Pollution 5th Edition. 5.J. Trevors, 1972 – 2017, Water, Air, & Soil Pollution. 6. Try to summarize some new articles and research related to the subject in a book to be used within the curriculum. 7. Translating articles and research on the subject and placing them in a book to be used within the curriculum. 8. All modern electronic sources and accredited and sober magazines.

Electronic References, Websites	https://researchgate.net/ https://core.ac.uk/

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

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Academic Program Description Form

University Name: .... **university of basrah**.....

Faculty/Institute: ..... **collage of education for pure science**.....

Scientific Department: ..... **chemistry**.....

Academic or Professional Program Name: ..... **instrumental analysis**.....

Final Certificate Name: ..... **BSc**.....

Academic System: ..... **Annual** .....

Description Preparation Date:**5 /10/2023**

File Completion Date: 2024/02/4

Signature:
Head of Department Name:

Date:

Signature:
Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. **Program Vision**
Program vision is written here as stated in the university's catalogue and website.

2. Program Mission

Program mission is written here as stated in the university's catalogue and website.

3. Program Objectives

General statements describing what the program or institution intends to achieve.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

no

5. Other external influences

Is there a sponsor for the program?

no

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**90h**	**90 h**	**essential**	
College Requirements	**yes**			
Department Requirements	**yes**			
Summer Training	**No**			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
Fourth class		**Instrumental analysis**	**theoretical**	**practical**

8. **Expected learning outcomes of the program**	
Knowledge	
Learning Outcomes 1	Introducing students to the analytical techniques necessary to analyze chemical models of unknown concentration
Skills	
Learning Outcomes 2	Expanding the skill of working on automated devices
Learning Outcomes 3	
Ethics	
Learning Outcomes 4	Developing students' abilities to understand the basis of estimating different models
Learning Outcomes 5	

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

-Explaining the scientific material using modern methods, represented by a presentation of the material

-2Do quick and short exams during the lecture

-3Linking ideas to reality

10. Evaluation methods

Implemented at all stages of the program in general.

Weekly, monthly, daily exams and the end of the year exam

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Proff.	chemistry	Instrumental analysis			Essential	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. The most important sources of information about the program

State briefly the sources of information about the program.

Theoretical basics in organic analytical chemistry, quantitative, volumetric and gravimetric analysis
Dr. Hadi Kazem Awad

14. Program Development Plan

A comparative study between devices, then a study of devices that have recently appeared in the same field

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
		Instrumental analysis	Essential												

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name: analytical chemistry-instrumental analysis
2. Course Code:
3. Semester / Year: Anual
4. Description Preparation Date: : 14/ 02/ 2024
5. Available Attendance Forms: By lecture
6. Number of Credit Hours (Total) / Number of Units (Total) 90 hours in year
7. Course administrator's name (mention all, if more than one name)
Name: proff. Dr. Zainab taha Yassin Alabdullah Email: Zainab.yassin@uobasrah.edu.iq
8. Course Objectives

Course Objectives	○ Providing students with the skill of applying the studied ideas to reality ○ Expanding the skill of working with available laboratory equipment • Explaining the most importa modern ideas in automat analysis..... •
9. Teaching and Learning Strategies	
Strategy	1- Educational strategy, collaborative concept planning.

	2 –Brainstorming education strategy. 3 –Education Strategy Notes Series

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	3 h	Concept of analytical chemistry Electromagnatic radiation Absorption Electromagnatic radiation spectroscopy application absorption half year exam nephelometer a turbidometry IR Spectra Poloarograp			

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Distribution is as follows: 25 marks for monthly and practical exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams, including 15 marks for practical

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	English Victorian and Modern Poetr
Main references (sources)	Dr. Abdul Mohsen Al-Haida analytical analysis
Recommended books and references (scientific journals, reports…)	All automated analysis books are written on the basis that it is a methodology.
Electronic References, Websites	

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

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This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

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Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ..... University of Basrah.
Faculty/Institute: . Education for Pure Sciences
Scientific Department: ....chemistry.....
Academic or Professional Program Name: . Bachelor.....
Final Certificate Name: ..BSc in chemistry.....
Academic System: Annual
Description Preparation Date: 5/10/2023
File Completion Date: 24/02/2024

Signature:
Head of Department Name:

Date:

Signature:
Scientific Associate Name:

Date:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in community service in the fields of teaching and teaching sciences.

2. Program Mission

Preparing and graduating leading scientific and leadership competencies in chemistry and its sciences and in developing the knowledge balance in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

1- Explains for students the importance of industrial chemistry in our daily lives.

2 Introducing the student to the polymerization processes followed in preparing polymers.

3- Classification of polymers according to polymerization reactions such as chain polymerization, including free radical, condensation and ionic polymerization.

4. Clarify the problems and factors affecting the polymerization process.

4. Program Accreditation

None.

5. Other external influences

None.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	**none**			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024 / Fourth		Industrial Chemistry	Theoretical	Practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

1- Theoretical lectures.

2- Use the display to give lectures.

3- Guide the student to the websites to benefit from them.

4– Guide the student to the sources on the basis of which the lectures were organized.

10. Evaluation methods

Weekly, monthly, daily and end-of-year exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor and Professor	chemistry	Polymer Chemistry			✓	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

14. Program Development Plan
Adding scientific and practical vocabulary in the laboratory that links theory with practice in order for students to benefit fully in theory and practice.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Industrial Chemistry
2. Course Code:
3. Semester / Year:
Annual
4. Description Preparation Date:
24/02/2024
5. Available Attendance Forms:
In-person only
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours per year. 3 hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Dhiaa Abdel Mohsen Hassen Asst. Prof. Dr. Mohammed Qasim Mohammed

8. Course Objectives	
Course Objectives	- The student acquires theoretical experience about the role and importance of industrial chemistry in our daily lives. 2- The student acquires experience in distinguishing between some polymers such as linear and interlocking polymers, natural and industrial, through knowledge of the thermal and mechanical properties of polymers . 3- The student must be proficient in writing and naming polymers •

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
11	Theoretical	INTRODUCTi PROFILE	Identifying industrial chemistry and its importance	Theoreti	Questions and Discussions
2	Theoretical	Polymer Chemi and Technology	The concept of polymerization, polymerization, the process of polymerizat and the degree of polymerization	Theoreti	Questions and Discussions
3	Theoretical	Classification o Polymers	Natural, synthetic, line branched, interlocking polymers, fibers, plasti ...	Theoreti	Questions and Discussions
4	Theoretical	Molecular Strengths of Polymers	Types of chemical and physical forces that bir synthetic units together	Theoreti	Quiz
5	Theoretical	Polymerization processes	Polymerization system and conditions	Theoreti	Quiz
6	Theoretical	Additive polymerization	**1-Free radical polymerization**	Theoretical	Questions and Discussions
7	Theoretical	Additive polymerization	Positive and negative ionic polymerization	Theoretical	Questions and Discussions Homework
8	Theoretical	Exam			
9	Theoretical	Condensate Polymerization	Explanation o condensate polymerization in detai	Theoretical	Homework
10	Theoretical	Condensation Polymerisation	Explain all chemical reactions leading to condensation polymerization	Theoretical	Quiz
11	Theoretical	Resins	Preparation of phenol-formaldehyde resins with mention of equations	Theoretical	Questions and Discussions

12	Theoretical	Types of molecular weight and methods used in measuring molecular weight	Mentioning the types c molecular weight such numerical, weight and even with equations an solving problems relate to how to calculate molecular weight	Theoretical	Questions and Discussions
13	Theoretical	Polymers Label	Nomenclature by sourc ,by structural unit, trad and familiar nomenclat and nomenclature by global system	Theoretical	Homework
14	Theoretical	Petrochemical copolymerization	Definition of copolyme and giving several examples and types an deriving the equation c co-polymerization and importance in determir the type of copolymer produced	Theoretical	Homework
15	Theoretical	First Semester Examination			
half years					
17	Practical training in schools				
18					
19					
20					
21					
22					
23	Theoretical	Ring opening polymerization	Polymerization of the r opening and its reactio	Theoreti	Questions and Discussio
24	Theoretical	Physical Properties	Crystallization and fac affecting the crystallization of polyr	Theoreti	Questions and Discussio
25	Theoretical	Physical Properties	Degree of vitreous transition and factors affecting it	Theoreti	Questions and Discussio
26	Theoretical	Physical Properties	The degree of fusion, its definition, th factors affecting it, and relationship to the degr of crystallization	Theoreti	Quiz

27	Theoretical	Rubber	Definition ,types , vulcanization and the most important additiv	Theoreti	Question and Discussic
28	2 Theoretical	Plastic	Studying the physical properties of plastics, methods of its preparat and additives	Theoreti	Question and Discussic
29	2 Theoretical	Fibres & Folies	Industrial processes the production of fib their properties, feat and factors affecting th	Theoreti	Question and Discussic
30	2 Theoret	Fibres & Folies			
End of course					

1. Course Evaluation

Weekly, monthly, daily and end-of-year exams.

2. Learning and Teaching Resources

Required textbooks (curricular books, if any)

كيمياء الجزيئات الكبيرة

Main references (sources)الكيمياء الصناعية وخاماتها

Recommended books and references (scientific journals, reports…)

Electronic References, Websites

Chemistry of Polymers

Principles OF polymerization

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ….**Basrah**……

Faculty/Institute: … *College of Education of Pure Science*……

Scientific Department: ……**Chemistry**……

Academic or Professional Program Name: …. **Bachelor's degree in Biochemistry**……

Final Certificate Name: …. **Bachelor of Science in Chemistry**……

Academic System: …yearly……

Description Preparation Date: **24/2/2024**

File Completion Date: **24/2/2024**

Signature:
Head of Department Name:

Date:

Signature:
Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving society in the fields of learning and teaching living languages.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in the life and applied sciences and their sciences and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, and emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

1- Explaining to the student the importance of biochemistry in our lives and its important role in building and maintaining the body of a living organism.

2- The student gains a healthy understanding and understanding of the course chapters through the presentation provided by the instructor.

3- The student gains theoretical experience in dealing with the health of his body and how to avoid diseases.

4- Knowing and distinguishing the different chemical compounds in the course chapters and thus determining what is beneficial and harmful to the human body.

4. Program Accreditation

nothing

5. Other external influences

nothing

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	48	48		Basic course
College Requirements	yes			
Department Requirements	yes			
Summer Training	nothing			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024/fourth		Biochemistry	theoretical	practical
			theoretical	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Informing students about the importance of carbohydrate

	metabolism, the paths of aerobic and anaerobic reactions, as well as the metabolism of fats and cholesterol, the decomposition of fatty acids, and their benefits and harms to the body.
Skills	
Learning Outcomes 2	1 - The student gains theoretical experience about the role and importance of the course chapters in our daily lives. 2 - The student gains experience in distinguishing between beneficial and harmful in the course chapters. 3 - The student gains experience in building his body in terms of health and avoiding diseases as much as possible.
Learning Outcomes 3	
Ethics	
Learning Outcomes 4	Developing students on a healthy body system .
Learning Outcomes 5	

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Weekly, monthly, daily exams and the end of the year exam.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Teacher	chemistry	Biochemistry			Ministerial contract	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(**Setting regulations related to enrollment in the college or institute, whether central admission or others**)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan
1- Adding practical scientific laboratories that link theory and practice so that students can fully benefit from theory and practice.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Biochemistry
2. Course Code:
3. Semester / Year:
yearly
4. Description Preparation Date:
24/2/2024
5. Available Attendance Forms:
My presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
48 hours annually. 2 hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Abbas Dawwas Matter Email: abbas.matter@uobasrash.equ.iq
8. Course Objectives

1 - The student gains theoretical experience about role and importance of the course chapters in daily lives. 2 - The student gains experience in distinguish between beneficial and harmful in the cou chapters. 3 - The student gains experience in building his bo in terms of health and avoiding diseases as much possible.	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	1- Educational strategy, collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2hours	Life energy	Carbohydrate metabolism and Carbose and glycol pathway Pentaglycosylation and hydrolysis And build glycog Fat metabol and glycolysis Fatty acids an Cholesterol metabolism ar Ketone bodies	Explaining scientific material reading selected methodolog books giving metabolic mechanics Explaining material giving mechanics reactions, summarizin the m important ideas presented during lectures, explaining material, giving examples o and cholest metabolism	For wee monthly, da written exa and the end year exam.
2	2hours	Its transmiss and transformatio			
3	2hours	The role of A and ADP transport energy			
4	2hours	Carbohydrate metabolism			
5	2hours	Energy pathw			
6	2hours	Krebs cycle			
7	2hours	Glycoxyl cycle			
8	2hours	Glucose generation			
9	2hours	Pentaglycolys			
10	2hours	Hydrolysis galactose			
11	2hours	Glycogenolysi			
12	2hours	Glycogen generation			
13	2hours	Lactose generation			
15	2hours	Sucrose generation Dark and l interactions			
holiday					
16	2hours	Fat metabolism			
17	2hours	Lipolysis			
18	2hours	Regulation lipase enzyme			
19	2hours	Decomposition of f acids Individual carbon			
20	2hours	Cholesterol metabolism			
21	2hours	Biosynthesis acids Fatty			
22	2hours	Build sc classes Fats			
23	2hours	Life processes			

24	2hours	Ketone bodies			
25	2hours	Digestion Absorption Protein			
26	2hours	Mechanism acid transport Amino			
27	2hours	Deletion carboxyl			
28	2hours	Urea cycle			
29	2hours	Biosynthesis acids Non-essential amino			
30	2hours	And basic			

11. Course Evaluation

Distribution is as follows: 20 marks for monthly and daily exams for the first semester. 20 marks for monthly and daily exams for the second semester. And 5 marks for follow-up and attendance for the first semester, and 5 marks for follow-up and attendance for the second semester. 50 marks for final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Biochemistry book by Dr. Abb Dawas Chemistry book, Introduction Biochemistry, Dr. Khawla Ahmed Qais Atwan Al-Kilani (Biochemistry)
Electronic References, Websites	