Ministry of Higher Education and Scientific Research

Scientific Ssupervision and Evaluation device

Department of Quality Assurance and Academic Accreditation

International Accreditation Department

Academic Program Description For the Department of Chemistry for the Academic year 2025-2024according Bologna process

Academic Program Description Form

University Name: University of Babylon

College/Institute: College of Science for Women

Name of the academic or professional program: Bachelor's in Chemistry

Name of final degree: Bachelor's in Chemistry

Study system: Bologna track

Description preparation date: 8/10/2024

Date of filling out the file: 14/10/2024

Signature:

Name of Department Head

Hazim Yahya Mohammed Ali

Date: 14/10/2024

Signature:

Name of Scientific Assistant

Dr. Kawthar Mohammed Ali Hassan

Date: 14/10/2024

The file is checked by

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Mohammed J.Jader

Date: 14/10/2024

Approval of the Dean

Program Description – Introduction

The Bachelor's program in the Department of Chemistry aims to prepare qualified scientific and research-oriented graduates with a solid knowledge base in various branches of chemistry, including analytical, physical, biological, inorganic, and organic chemistry. The program equips students with the ability to contribute to advancing the scientific and research level in our country, with special emphasis on developing skills in modern laboratory techniques such as spectroscopic methods (UV, visible, and infrared) and other advanced analytical tools.

The program combines strong theoretical foundations with advanced practical training and is distinguished by its well-equipped laboratories containing state-of-the-art instruments. It adopts a learning approach based on research and applied projects, which enhances students' ability to innovate and solve complex scientific and technical problems, preparing them to engage in research and development or work in advanced scientific sectors.

The curriculum undergoes regular review to ensure alignment with international academic standards and labor market requirements. It also includes field training opportunities, providing graduates with a competitive advantage in the job market or when pursuing postgraduate studies at prestigious international universities.

Academic Program Description

1. Program Vision

Preparing a scientific and technical staff specialized in chemical analysis techniques with the ability to deal with all techniques in chemical analysis with high professionalism, including analyzes concerned with treating pollution from heavy chemical substances and elements such as lead and mercury that affect the lives of citizens. The department also contributes to the scientific research movement and introductory, developmental and advisory conferences. The unified curricula have been adopted with most Iraqi universities - the Department of Chemistry for the purpose of easy movement between departments in addition to scientific benefit from them, taking into account the requirements of the college as a scientific college according to Bologna process.

2. Program Mission

The Department of Chemistry at the College of Science for Girls seeks, in integration with the college's mission, to meet the community's needs for cadres specialized in chemistry, such as pathological analyzes and the use of modern techniques in the field of analysis of toxic and non-toxic elements in all scientific and practical applications, especially in the medical and industrial fields, and the preparation of cadres required by this. Specialized research to work in this field and keep up with the latest developments in it Bologna process.

In order to achieve the vision of the College of Science for Girls and to carry out its pioneering role in assuming a prominent scientific position among local, Arab and foreign colleges, the Department of Chemistry seeks to disseminate and consolidate the latest information about chemistry in Iraqi society to keep pace with the tremendous development that has been achieved during the last three decades in this field and at all levels of Nanotechnology and even outer space.

3. Program Objectives

.1Preparing efficient cadres in the field of chemistry sciences

.2 Contribute to the development of cadres working in the field of chemical sciences in various sectors such as the manufacture of fertilizers, oils and dairy.

.3 Developing the work system in the field of chemistry

.4 Spreading scientific awareness in the field of chemistry

5. Calculation of work in the industrial field related to chemistry according to Bologna process.

4. Programmatic Accreditation

nothing

5. Other External Influences

nothing

6. Program Structure

Program Structure	*Number of courses*	*Study unit*	*Percentage*	*Notes*
Institution Requirements	13	19	13.57 %	Basic
College Requirements	2	4	2.85 %	Basic
Department Requirements	46	117	83.57 %	Basic
Summer Training	nothing	nothing	/	/

7. Program Description

Year/level	course code	Name of the course	Credit hours	
			Theoretical	Practical

First stage

Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Babylon
Bachelor's degree in chemistry science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2024 - 2025)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة بابل
بكالوريوس في علوم الكيمياء (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٤-٢٠٢٥

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL	ect	ab	Pr	Tut	emn	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	One	1	CHEM1111	Qualitative Analysis Chemistry	كيمياء التحليل النوعي	English	2	0	2	0	0	0	3	63	137	200	8.00	C	
		2	CHEM1112	Inorganic1	اللاعضوية ١	English	2	0	0	0	0	0	3	33	142	175	7.00	C	
		3	CHEM1103	Cytology	علم الخليه	English	2	0	2	0	0	0	3	63	87	150	6.00	S	
		4	CHEM1104	Labortary Safty	السلامة والامن الكيمياي	English	2	0	0	0	0	0	3	33	92	125	5.00	S	
		5	UOBAB1104	Human and Democracy	حقوق الانسان والديمقراطيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
		6	UOBAB1102	Arabic Language	اللغة العربيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	4	0	0	0	18	258	492	750	30.00		

UGl	Semeste	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL	ect	ab	Pr	Tut	emn	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
		1	CHEM1201	Volumetric Analysis Chemistry	كيمياء التحليل الحجمي	English	2	0	2	0	0	0	3	63	137	200	8.00	C	CHEM1111
		2	CHEM1202	Inorganic 2	اللاعضوية ٢	English	2	0	0	0	0	0	3	33	142	175	7.00	C	CHEM1112
		3	CHEM1203	Mathematics I	رياضيات I	English	2	0	0	0	0	0	3	33	67	100	4.00	S	
	Two	4	CHEM1204	Physics Science	الفيزياء	English	2	0	2	0	0	0	3	63	87	150	6.00	S	
		5	UOBABb4	Computer I	حاسوب I	Arabic	2	0	0	0	0	0	3	33	42	75	3.00	B	
		6	UOBABb1101	English Language I	لغة الانكليزية I	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	4	0	0	0	18	258	492	750	30.00		

Second stage

Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Babylon
Bachelor's degree in chemistry science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2024 - 2025)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة بابل
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أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٤-٢٠٢٥

Level	Semester	No.	Module Code	Module Name In English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGI	One	1	CHEM2311	Chemistry of represented elements 1	كيمياء العناصر الممثلة١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM2302	Gravimetric analysis	التحليل الوزني	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM2313	Thermodynamics1	الديناميه الحراريه١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		4	CHEM2314	Organic Chemistry1	الكيمياء العضوية١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		5	CHEM2305	Differential equations	المعادلات التفاضلية	English	2	0	0	0	0	0	3	33	42	75	3.00	S	
		6		Computer 2	الحاسوب ٢	English	2	0	0	0	0	0	3	33	42	75	3.00	S	
						Total	12	0	8	0	0	0	18	318	432	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGI	Two	1	CHEM2401	Chemistry of represented elements 2	كيمياء العناصر الممثلة ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2311
		2	CHEM2402	Separation Methods	طرق الفصل	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM2403	Thermodynamics 2	الديناميه الحراريه ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2313
		4	CHEM2404	Organic Chemistry 2	الكيمياء العضوية ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2314
		5	UOBAB2301	Baath Party crimes	جرائم البعث البائد	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	S	
			UOBAB2302	English Languagell	اللغة الانكليزيه II	English	2	0	0	0	0	0	3	33	17	50	2.00	S	
			UOBAB1102	Arabic Language	اللغة العربيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	8	0	0	0	18	318	432	750	30.00		

Third stage

University of Babylon
Bachelor's degree in chemistry science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2025 - 2026)

جامعة بابل
بكالوريوس في علوم الكيمياء (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٥-٢٠٢٦

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequis Module(s)
UGI	One	1	CHEM3501	Electrochemistry	الكيمياء الكهربائيه	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM3502	Coordination chemistry1	الكيمياء التناسقية١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM3503	Organic Chemistry 3	الكيمياء العضوية ٣	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		4	CHEM3504	Biochemistry1	الكيمياء الحياتية ١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		5	CHEM3505	Industrial Chemistry	الكيمياء الصناعية	English	2	0	0	0	0	0	3	33	67	100	4.00	B	
		6	CHEM3506	Environmental Chemistry	كيمياء البيئه	English	2	0	0	0	0	0	3	33	17	50	2.00	S	
						Total	12	0	8	0	0	0	18	318	432	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequis Module(s)
UGI	Two	1	CHEM3601	Chemical kinetics	الكيمياء الحركيه	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM3602	Coordination chemistry2	الكيمياء التناسقية٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM3603	Organic Chemistry 4	الكيمياء العضوية ٤	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		4	CHEM3604	Biochemistry2	الكيمياء الحياتية ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		5	CHEM3605	Industrial chemistry applications	تطبيقات الكيمياء الصناعية	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
		5	CHEM3606	Research Methodology	منهج بحث	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	S	
		6	CHEM3607	Nanotechnology	كيمياء النانو	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	14	0	8	0	0	0	18	351	399	750	30.00		

Four stage

Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Babylon
Bachelor's degree in chemistry science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2026 - 2027)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة بابل
بكالوريوس في علوم الكيمياء (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٦-٢٠٢٧

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	One	1	CHEM4701	Instrumental analysis 1	التحليل الالي ١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM4702	Clinical Biochemistry1	الكيمياء السريرية١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM4703	Quantum Chemistry	كيمياء الكم	English	2	0	0	0	0	0	3	33	67	100	4.00	C	
		4	CHEM4704	Photochemistry	كيمياء الضوء	English	2	0	0	0	0	0	3	33	67	100	4.00	C	
		5	CHEM4705	Polymer Chemistry	كيمياء البوليمرات	English	2	0	2	0	0	0	3	63	87	150	6.00	B	
		6	CHEM4706	Research project	مشروع بحث تخرج	Arabic	2	0	0	0	0	0	3	33	67	100	4.00	B	
						Total	12	0	8	0	0	0	18	510	290	800	30.00		

UGl	emest	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) :L (hr/w	ect (hr/w	ab (hr/w	r (hr/w	ut (hr/w	mn (hr/	Exam hr/sem	SSW L hr/se m	USS WL hr/se m	SWL hr/se m	ECTS	Modu le Type	Prerequisite Module(s) Code
		1	CHEM4801	Instrumental analysis 2	التحليل الالي ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM4802	Clinical Biochemistry2	الكيمياء السريرية٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM4803	Spectroscopy	الاطياف الجزيئية	English	2	0	0	0	0	0	3	33	42	75	3.00	C	
	Two	4	CHEM4804	Identification of organic chemistry	التشخيص العضوي	English	2	0	3	0	0	0	3	78	97	175	7.00	C	
		5	CHEM4805	Petroleum Chemistry	كيمياء النفط	English	2	0	2	0	0	0	3	63	87	150	6.00	B	
		6	CHEM4806	Hetrocyclic	حلقيه غير متجانسه	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	9	0	0	0	18	333	417	750	30.00		

8.The expected learning outcomes of the program	
Knowledge	
Knowledge and Understanding	1- 1. The student gets to know the concept of chemistry 2- 2. To classify the needs for developing chemistry 3- 3. To separate the chemical specifications according to the ISO system 4- 4. To evaluate the cost of maintaining chemical manufacturing equipment
Skills	
Subject-Specific Skills	.1The student's knowledge of the concept of chemistry .2The importance of chemistry in areas of life 3. Enabling female students to analyze the costs of working in the chemical industry
Thinking Skills	.1Thinking skill according to the student's ability (the goal of this skill is for the student to believe in what is tangible (the student's abilities) and understand when, what and how he should think and work to improve the ability to think reasonably(.2 High thinking skill (the goal of this skill is to teach thinking well before making the decision that determines the student's life(3. Critical thinking skills (a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it

Ethics	
Evaluation methods	1- Exams 2- Learning Matrix 3- Which Face 4- CAT (student feedback) 5- Learning Triangle 6- Seminars 7- On line lecture

9. Teaching and Learning Strategies

Learning strategies

1-Thinking strategy according to the student's ability (for example: if the student is able to learn the correct concept of management, he will acquire the skill of managing and organizing his personal life).

2- High thinking skill strategy (for example, if the student wants to make a good decision, it is important that he thinks well before he makes the decision, and if he decides without thinking, or if he cannot think well, or if he cannot decide, or perhaps he will not decide, then this This means he does not have high thinking skills.)

3- Critical thinking strategy in learning (Critical Thanking) (It is a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it logically to reach the desired solution).

4-Brainstorming

Methods of teaching and learning

1- Method of giving lectures.

2- Student Center

3- Student groups

4- Workshops

5- (Scientific trips to follow up on the environmental reality)

6- Learning Technologies on Campus

7- (Experiential learning)

8- Application Learning)

10. Evaluation methods

1- Exams

2- Learning Matrix

3- Which Face

4- CAT (student feedback)

5- Learning Triangle

6- practical

8- tutorial

11. Faculty

Faculty Members

Academic Rank	*Instructor's name*	*Specialization*		*Special Requirements/skills (it applicable)*	*Number of the teaching staff*	
		General	*Special*		*staff*	*lecturer*
Professor	Dr. Hazim Yahya Mohammed Ali	Chemistry	Physical Chemistry		√	
Professor	Dr.Ayad Fahdil Mohammed	Chemistry	Physical Chemistry		√	
Prof	Dr. Mohmmed Hamid Saaid	Chemistry	Inorganic Chemistry		√	

essor						
Professor	Dr. Talat Tariq Kahlil	Chemistry	Bio Chemistry		√	
Professor	Dr. Sadiq Abed Al hussain	Chemistry	Organic Chemistry/Polymer		√	
Professor	Dr.Fuad Fahdil Mohammed	Chemistry	Analytical Chemistry		√	
Profess	Dr. Assyl Moshtaq Kahdim	Chemistry	Analytical Chemistry		√	

or						
Assistant Professor	Dr. Noor Abed Al razaq	Chemistry	Organic Chemistry		√	
Assistant Professor	Dr. Suad Taha Saad	Chemistry	Inorganic Chemistry		√	
As	Dr. Ahmed Hassan Shintaf	Chemistry	Organic Chemistry		√	

sistantProfessor						
Assistant Professor	Dr. Ali Talib Bader	Chemistry	Inorganic Chemistry		√	
Assista	Dr. Zainab Hashim Khudaier	Chemistry	Analytical Chemistry		√	

ntProfessor						
AssistantProfessor	Dr. Ziyad Omran Musaa	Chemistry	Organic Chemistry		√	
Teacher	Shiren Hamza Abbas	Chemistry	Bio Chemistry		√	
Teac	Mohammed Edan Hassan	Chemistry	Analytical Chemistry		√	

her						
Teacher	Ali Mohsum Mohammed	Chemistry	Physical Chemistry		√	
assistant teacher	Rana Salah Norri	Chemistry	Bio Chemistry		√	

Professional Development

Mentoring new faculty members

Teaching, like any other art, can be acquired by practicing and following its methods and principles, provided that there is a sincere desire to practice the teaching profession, and the method in education means taking interconnected steps to reach a specific goal that you hope to achieve. Therefore, it must follow the basic principles of good teaching, which are:

1- Directing and guiding learners by creating educational situations that lead to desirable activities.

2- Providing an atmosphere of love, kindness and cooperation between the teacher and the learners and between the learners themselves through his love for his students without discrimination and not excessive feminization.

3- Adopting democratic leadership through the emotional relationship between the teacher and his students, which leads them to control based on mutual respect and creating a cooperative atmosphere between the students and between the teacher and his students.

Professional development for faculty members

1- Thinking strategy according to the student's ability (for example: if the student is able to learn the correct concept of management, he will acquire the skill of managing and organizing his personal life). And the high thinking skill strategy (for example, if the student wants to make a good decision, it is important that he thinks well before he makes the decision, and if he decides without thinking or if he cannot think well or if he cannot decide or perhaps he will not decide, this means He does not have high thinking skills.)

2- General and transferable skills (other skills related to employability and personal development).

3- Verbal communication.

4- Teamwork.

5- Analysis and investigation (collecting information systematically and scientifically to establish facts and principles for solving the problem).

12. Acceptance criterion

Central acceptance and parallel acceptance

13. The most important sources of information about the program

1- The website of the college and university.

https://csg.uobabylon.edu.iq/
https://csg.uobabylon.edu.iq/department/?cdid=4

https://csg.uobabylon.edu.iq/department/dep_lectures.aspx?cdid=4

2- University guide .https://systems.uobabylon.edu.iq /

3- The most important books and resources in the college library.

14. Program development plan

The Bologna Process was applied to the students of the first stage, and work is being done to apply it to the next stages, along with conducting workshops and seminars to familiarize faculty members with the requirements of the Bologna Process and how to work with it, and to discuss the negatives and obstacles and find solutions for them. The electronic system was applied in the education process.

Program skills Outline																		
				Required program learning outcomes														
Year/Level	*Course Code*	*Course Name*	*Basic or optional*	*Knowledge*				*Skills*				*Ethics*				*Other skills related to employability and personal development*			
				A_1	A_2	A_3	A_4	B_1	B_2	B_3	B_4	C_1	C_2	C_3	C_4	D_1	D_2	D_3	D_4
The first stage, Course (1), according to the Bologna system	UOBAB0603011	Qualitative Analytical chem.	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603012	Inorganic -1	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603013	Cytology	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603014	Laboratory safety	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBABb3	Human and Democracy	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB1102	Arabic Language	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Program skills Outline																			
				Required program learning outcomes															
Year/Level	*Course Code*	*Course Name*	*Basic or optional*	*Knowledge*				*Skills*				*Ethics*				*Other skills related to employability and personal development*			
				A_1	A_2	A_3	A_4	B_1	B_2	B_3	B_4	C_1	C_2	C_3	C_4	D_1	D_2	D_3	D_4
The first stage, Course (2), according to the Bologna system	UOBAB0603021	**Volumetric Analytical chem.**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603022	**Inorganic -2**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603023	**Mathematics**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603024	**Physics Sciences**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603025	**Computers Program**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603026	**English Language**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

مخطط مهارات المنهج																							
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																							
			مخرجات التعلم المطلوبة من البرنامج																				
السنة / المستوى	رمز المقرر	اسم المقرر	اساسي ام اختياري	المعرفة والفهم				المهارات الخاصة بالموضوع				مهارات التفكير				المهارات العامة والمنقولة (أو) المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي							
				أ1	أ2	أ3	أ4	ب1	ب2	ب3	ب4	ج1	ج2	ج3	ج4	د1	د2	د3	د4				
المرحلة الاولى (الكورس الاول)	UOBAB0603011	كيمياء التحليل النوعي	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603012	اللاعضوية-1	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603013	علم الخليه	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603014	السلامه والامن الكيمياوي	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBABb3	حقوق الانسان والديمقراطيه	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB1102	اللغة العربيه	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				

مخطط مهارات المنهج																							
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																							
			مخرجات التعلم المطلوبة من البرنامج																				
السنة / المستوى	رمز المقرر	اسم المقرر	اساسي ام اختياري	المعرفة والفهم				المهارات الخاصة بالموضوع				مهارات التفكير				المهارات العامة والمنقولة (أو) المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي							
				أ1	أ2	أ3	أ4	ب1	ب2	ب3	ب4	ج1	ج2	ج3	ج4	د1	د2	د3	د4				
المرحلة الاولى (الكورس الثاني)	UOBAB0603026	اللغة الانكليزية	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603021	كيمياء التحليل الحجمي	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603022	اللاعضوية-2	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603023	الرياضيات	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603024	الفيزياء	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
	UOBAB0603025	برمجة الحاسوب	اساسي	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	COMPUTERS PROGRAM			**Module Delivery**	
Module Type	B			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603025				
ECTS Credits	4.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**HazimYahya**		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Teaching the student to be familiar with the basic rules for dealing with and managing a computer to help him complete projects Printing matters, preparing statistics and graphs, creating presentations and designing engineering plans And others, and the emergence of the Internet as a means of communication available to everyone, it has become very necessary for students to learn to use Computer due to the role of the Internet in many fields, including education, scientific research, trade and marketing		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1. The student's understanding of the material 2. The ability to analyze and apply what you have learned practically on the calculator 3. The evaluation should be done by presenting the material to the students in the laboratory and then applying it		
Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64

Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Phases of the computer course And its generations and data And information
Week 2	**Computer features** **And areas of its use** **And its components**
Week 3	Types of computers And its classification
Week 4	Computer components and parts Physical input devices And the output
Week 5	Computer box and software entity
Week 6	Preparation systems and personal computers
Week 7	first exam

Week 8	Computer platform and factors Which should be considered when purchasing the computer
Week 9	Main features of a personal computer
Week 10	viruses the computer
Week 11	Damage resulting from Viruses
Week 12	• The most important steps • Viruses- • Necessary to protect against hacking •
Week 13	• Virus components • Computer damage • And its types •
Week 14	• Second Exam.
Week 15	• Sources of hacking and risks

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

[1] Mars climate orbiter. http://mars.jpl.nasa.gov/msp98/orbiter/, 1999. [Online; accessed 17-March-2015].

[2] Moth in the machine: Debugging the origins of 'bug'. Computer World Magazine, September 2011. [3] errno.h: system error numbers - base definitions reference. http://pubs.opengroup.org/onlinepubs/9699919799/basedefs/errno.h.html, 2013. [Online; accessed 13-September-2015].

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	MATHEMATICS I	**Module Delivery**	
Module Type	S	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603023		
ECTS Credits	4.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**Zyiad Khalaf**	**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	1-To know the cardinal factor, homology, and Asian functions. 2- Learn how to calculate limits. 3- Be able to perform differentiation. 4- Distinguish between partial differentiation and ordinary differentiation. 5- Learn about the Cauchy-Riemann equations. 6- Learn how to integrate. 7- Learn about Integration methods. 8- Can implement the multiplier. 9- Distinguish between partial integration and arbitrary integration.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	4. Functions in a real variable - objectives - continuity - differentiation - integration.		
Indicative Contents **المحتويات الإرشادية**	Learn how to integrate. Learn about Integration methods. Can implement the multiplier. Distinguish between partial integration and arbitrary integration.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Real numbers
Week 2	Functions in a real variable
Week 3	Trigonometric functions
Week 4	Logarithmic functions
Week 5	Exponential functions
Week 6	The ends of real functions
Week 7	first exam
Week 8	Objectives of trigonometric functions

Week 9	Goals at infinity
Week 10	Exercise solutions
Week 11	Continuity
Week 12	Definition of derivation • .
Week 13	Derivation of real functions •
Week 14	• Second Exam.
Week 15	Derivation of trigonometric functions • Derivation of logarithmic and exponential functions

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس
Anton howard."calculus".J on wiley and sons.Inc.4th edition.1992

	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	LABORTARY SAFTY			**Module Delivery**	
Module Type	S			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603014				
ECTS Credits	5.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Mohammed Hamed Saaed**		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	The ignorance of the chemical safety principles lead to expose the laboratory workers and students to great dangerous situations and in some cases lead to death. Knowledge of the applications of best practices for handling chemicals materials will minimize risks, whether to individuals, facilities or community. Chemical and biological safety involves understanding the physical, chemical and toxicological hazards of chemicals.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	5. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 6. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 7. Students can handle the chemicals with good experience. 8. Students can develop their thoughts to create some projects that are useful in the field.
Indicative Contents **المحتويات الإرشادية**	1. Safety for university teaching staff, coworkers and students. 2. Protection of university facilities, during study and workplace in future. 3. Protection of the society and the environment.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem)	150		

الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	1- Introduction and Definitions 2- Roles and responsibilities 2-1-Institutional chemical safety Committee, 2-2-Principal Investigators, 2-3-Laboratory workers, 2-4-Occupational Health Program, 2-5-Office of Environmental Health and Safety, and the chemical l Safety Officer
Week 2	3. WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM 3.1 Material Safety Data Sheets . 3.2 Understanding hazard warning information 3.3 Toxicological properties: 3.3.1 Flash point . 3.3.2 Auto ignition temperature . 3.3.3 Flammable limits
Week 3	4. GENERAL CHEMICAL SAFETY 4.1 Good Work Practices/General Safety . 4.2 Personal Hygiene
Week 4	5. PERSONAL PROTECTIVE EQUIPMENT 5.1 Eye and face protection . 5.2 Hand protection . 5.2.1 Selection of Gloves for Work with Chemicals . 5.2.2 Use and Care of Gloves . 5.3 Body Protection – Protective clothing. 5.4 Respiratory Protection

	6. EMERGENCY PROCEDURES 6.1 Equipment . 6.2 Chemical Related Emergency Procedures . 6.2.1 Chemical Contact . 6.2.2 Poisoning . 6.2.3 Power failure . 6.2.4 Domestic Water Interruption . 6.2.5 Chemical Spills
Week 5	CHEMICAL SPILL PREVENTION AND PREPAREDNESS 7.1 Spill Kits . 7.2 Spill Classification . 7.3 Spill Response
Week 6	8. SPECIFIC CHEMICAL HAZARDS 8.1 Flammables . 8.2 Oxidizers . 8.3 Corrosives . 8.4 Highly Reactive Materials . 8.5 Cryogenic Materials. 8.6 Designated Substances . 8.7 Other Toxic Materials **.**
	9- Laboratory ventilation and containment for chemical safety - Laboratory chemical ("fume") hood
Week 7	first exam
Week 8	10. CHEMICAL HANDLING AND STORAGE 10.1 Chemical Inventory . 10.2 General Transport Practices. 10.3 General Storage Practices . 10.4 Storage of Flammables and Combustibles . 10.4.1 Storage Rooms for Flammable and Combustible Liquids . 10.4.2 Approved Flammable Storage Cabinets . 10.5 Chemical Segregation . 10.6 Storage of Gas Cylinders . 10.7 Containment
Week 9	11. HAZARDOUS WASTE MANAGEMENT 11.1 Minimization of Hazardous Waste 11.2 Packaging and Labelling Requirements . 11.3 Chemical Waste . 11.3.1 Unknown Waste. 11.3.2 Explosive Waste .
Week 10	12-Radiation Safety - Basic concepts and definitions - Types of ionizing radiation - Sources of radiation - Contamination and exposure - Chemical effects of radiation - Principles of exposure control

	- Labelling
Week 11	12-Radiation Safety - Basic concepts and definitions - Types of ionizing radiation - Sources of radiation - Contamination and exposure - Chemical effects of radiation -
Week 12	• Contamination • Radiation safety instrumentation
Week 13	Chemical ethics • What is ethics? • Why ethics? • Applying chemical ethics in research •
Week 14	• Second Exam.
Week 15	• Principles of exposure control • Labelling

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the**

		Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
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	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ARABIC LANGUAGE			**Module Delivery**	
Module Type	S			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBABB2				
ECTS Credits	4.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Amina Ameer**		**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	1- Introducing students to the concept of the Arabic language 2 - Evaluation of speech in terms of recognizing the exits of letters 3- Inculcating the student's interest in the Arabic language and going beyond the practical dialect 4- Developing the student's spelling and handwriting ability and skill so that he can write correctly in all aspects 5-Helping the student understand complex structures and ambiguous methods 6 - Developing the student's literary and creative abilities so that he can express himself correctly 7_ Accustoming students to the method of logical thinking in presentation and analysis, especially in exercises on correct reading. 9_Course outcomes and methods of generalization, learning and evaluation		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	9. The student's understanding of the material 10. The ability to analyze and apply what you have learned practically on the Arabic 11. The evaluation should be done by presenting the material to the students in the laboratory and then applying it		
Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	The concept of Arabic language
Week 2	Characteristics of the Arabic language
Week 3	Factors of richness in language Arabic
Week 4	Levels of seductive expression
Week 5	Sections of speech (Noun, verb, and letter.)
Week 6	Pronouns
Week 7	Interrogative nouns
Week 8	Demonstrative names

Week 9	Relative nouns
Week 10	First Exam
Week 11	Verbs – past tense
Week 12	The present tense
Week 13	Letter
Week 14	Syntactic signs
Week 15	• Second Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

عبد اللطيف الصوفي ، اللغة ومعاجمها في المكتبة العربية ، الطبعة الأولى 1986 ، طلسدار للدراسات والترجمة والنشر ، دمشق .

عز الدين إسماعيل ، المصادر الأدبية واللغوية في التراث العربي ، مكتبة غريب ، الفجالة ، مصر .

محمد عجاج الخطيب ، لمحات في المكتبة والبحث والمصادر ، الطبعة الرابعة عشر 1413هـ - 1993م، مؤسسة الرسالة بيروت.

محمد ماهر ، المصادر العربية والمعربة ، الطبعة السادسة 1407، هـ - 1987م ، مؤسسة الرسالة ، بيروت.

	Text	**Available in the**

		Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	PHYSICS SCIENCE			**Module Delivery**	
Module Type	S			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603024				
ECTS Credits	4.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Ziyad Khalaf**		**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Physics is one of the ancient sciences that man has begun to understand and understand all its phenomena. Optics, electricity, mechanics, and heat are all focused on his daily applications, so there is nothing surprising in that. He sees the sun, the moon, and surrounding things, and sees his image in the water, so he tries to understand that, and with development: the laws of reflection and refraction provided a solution to all his questions, and electricity and heat known at this time are only results of causes. These are questions created by man and whose foundations were laid by a group of scientists in the service of humanity		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After completing the course, the student will be able to: The course aims to introduce the student to waves, light, reflection, and refraction 2- Introducing students to the eye, the observer, defects in lenses and optical devices, interference, and diffraction 3- Explaining the phenomenon of spectra, polarization, the speed of light and its nature 4-The concept of electricity, charge and matter, Coulomb's law 5-Magnetism and magnetic properties, induction, lines of induction, and magnetic flux		

Indicative Contents **المحتويات الإرشادية**	Physics is one of the ancient sciences that man has begun to understand and understand all its phenomena. Optics, electricity, mechanics, and heat are all focused on his daily applications, so there is nothing surprising in that. He sees the sun, the moon, and surrounding things
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Waves and their nature
Week 2	Light and its properties
Week 3	Lenses and their applications
Week 4	Spectra and polarized light
Week 5	General discussion and review
Week 6	Electricity and Coulomb's law
Week 7	first exam
Week 8	Electric field and Gauss's law
Week 9	Magnetism and magnetic properties
Week 10	Magnetic force, electric current
Week 11	Faraday's law and Lenz's law .
Week 12	Ampere's law and some of its applications
Week 13	Discussion and review
Week 14	• Second Exam.
Week 15	• Physics of semiconductor materials

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Surface tension**
Week 2	**Ohm's law using a dilatant**
Week 3	**Find the frequency of a tuning fork**
Week 4	**Finding the refractive index of a liquid using a lens**

Week 5	**Compound pendulum**
Week 6	**Resonance in series alternating current circuits**
Week 7	**Helical spring**

Learning and Teaching Resources
مصادر التعلم والتدريس

1- كرجيه،امجد عبد الرزاق وآخرون.الفيزياء العامة،دار الكتب للطباعة والنشر،جامعة الموصل،1988

2- الحسون عباس محمد وآخرون، البصريات، المكتبة الوطنية،جامعة بغداد 1980

3- مظفر أنور النعمة، فيزياء الالكترونيات ، كلية الهندسة،جامعة الموصل،2001 م .

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	INORGANIC1	**Module Delivery**	
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603012		
ECTS Credits	6.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**Ali Talib Bader**	**e-mail**	
Module Leader's Acad. Title	Asst. Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry. The relationship between chemical elements and their compounds is based primarily on atomic structures and electronic configurations. Chemical bonding of different types are found in molecular and ionic compounds, and these bonding types are discussed in terms of the latest theories and experimental results. Topics such as coordination compounds, boron hydrides, metal cluster compounds, metal carbonyls, solid state structures, and the geometry of finite molecular species are presented. The correlation of physical properties with structure, composition, and electronic states of the metal ionics are developed, based on theoretical considerations.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	12. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 13. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 14. Students can handle the chemicals with good experience. 15. Students can develop their thoughts to create some projects that are		

	useful in the field.
Indicative Contents **المحتويات الإرشادية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Atomic Structure, history of quantum theory , photoelectric effect and transition of atomic

Week 2	**Bohr theory, Bohr atom and Sommerfeld theory**
Week 3	Zeeman effect ,rule of wave mechanics
Week 4	Schrödinger equation
Week 5	Quantum number
Week 6	Electron Orbital: Definition, Shells & Shapes
Week 7	first exam
Week 8	Electronic structure and periodic ,Shielding effect
Week 9	Ionic compound ,Born –Harber cycle
Week 10	Polarizable of ionic compound
Week 11	Structure of ionic crystals.
Week 12	• Structure of some ionic and covalent crystals.
Week 13	• Valance bond theory and molecular theory
Week 14	• Second Exam.
Week 15	• VSPER

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

1- د. نعمان النعيمي "الكيمياء اللاعضوية" الجزء ألاول و الثاني ، مطبعة جامعة بغداد،

2- P.J.Durrant " General and inorganic chemistry" , 3rd edition,Dai Nippon Printing Co(H.K) Ltd, 1964.

3- P.J.Gillespie and P.L.A.Popelier" Chemical Bonding and Molecular Geometry " ,Oxford university press, 2001.

	Text	**Available in the**

		Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	INORGANIC 2			**Module Delivery**	
Module Type	C			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603022				
ECTS Credits	6.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Ali Talib Bader**		**e-mail**		
Module Leader's Acad. Title	Asst. Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry. The relationship between chemical elements and their compounds is based primarily on atomic structures and electronic configurations. Chemical bonding of different types are found in molecular and ionic compounds, and these bonding types are discussed in terms of the latest theories and experimental results. Topics such as coordination compounds, boron hydrides, metal cluster compounds, metal carbonyls, solid state structures, and the geometry of finite molecular species are presented. The correlation of physical properties with structure, composition, and electronic states of the metal ionics are developed, based on theoretical considerations.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	16. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 17. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 18. Students can handle the chemicals with good experience. 19. Students can develop their thoughts to create some projects that are useful in the field.		
Indicative Contents **المحتويات الإرشادية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Method of repulsion of electronic pairs in the valence layer
Week 2	Hydrogen, hydrogen bond
Week 3	Hydration, hydrogen ion, oxime ion
Week 4	hydrides
Week 5	Solubility, complex compounds
Week 6	Boron, boron oxides, borates and hydrides
Week 7	First Exam
Week 8	Aluminum compounds, calcium and indium halides

Week 9	Divalent carbon compounds, carbides and hydrogen cyanide
Week 10	Divalent carbides and hydrogen cyanide
Week 11	Double bonds
Week 12	Preparation of the rest of the group elements,
Week 13	Preparation of the silicon halides
Week 14	Second Exam
Week 15	Silicone uses

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

1- د. نعمان النعيمي "الكيمياء اللاعضوية" الجزء ألاول و الثاني ، مطبعة جامعة بغداد،

2- P.J.Durrant " General and inorganic chemistry" , 3rd edition,Dai Nippon Printing Co(H.K) Ltd, 1964.

3- P.J.Gillespie and P.L.A.Popelier" Chemical Bonding and Molecular Geometry " ,Oxford university press, 2001.

	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ENGLISH LANGUAGE			**Module Delivery**	
Module Type	B			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603026				
ECTS Credits	4.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Amina Ameer**		**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	1- Explaining the material in a clear and understandable way for all students. 2. Involve students in discussing and solving exercises. 3- Explaining the study material using various methods An explanation to develop students' abilities and break boredom in the classroom
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	20. The student's understanding of the material 21. The ability to analyze and apply what you have learned practically on the English 22. The evaluation should be done by presenting the material to the students in the laboratory and then applying it
Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Present simple (I Do)
Week 2	Present continuous and simple 1
Week 3	Present continuous and simple 2
Week 4	Past simple (IDid)
Week 5	Past continuous (I was doing)
Week 6	Present perfect 1(have done)
Week 7	Present perfect 2(I have done)
Week 8	Present perfect continuous (I have been doing)
Week 9	Present perfect continuous and simple
Week 10	First Exam
Week 11	For and since When ..? and how long
Week 12	Present perfect and past 1(I have done and Did)
Week 13	Past perfect (I had done)
Week 14	Past perfect continuous (I had been doing)
Week 15	• Second Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	لايوجد عملي في هذه الماده
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

Austin J.D. (2003). The Grammar Translation Method of Language Teaching. London: Longman.
Hell, Gy. (2009). A fordításhelye a rómaioktatásban (és Cicero fordításai). Modern Nyelvoktatás XV. 1-2, 3-12.

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	HUMAN AND DEMOCRACY	**Module Delivery**

Module Type	B	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBABB3		
ECTS Credits	2.00		
SWL (hr/sem)	150		

Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	**Kareem Mohmmed**	**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	1 – التعرف على افكار اساسية بخصوص حقوق الانسان وحرياته . 2 – تعريف حقوق الانسان وحرياته . 3 – التعرف على مصادر حقوق الانسان 4 – معرفة بعض ملامح حقوق الانسان في الحضارات القديمه 5 – التعرف على حقوق الانسان في حضارة العراق القديم 6 – معرفة حقوق الانسان في حضارة مصر الفرعونية 7 – معرفة حقوق الانسان في الحضارة اليونانية 8 – معرفة حقوق الانسان في الحضارة الرومانية 9 – التعرف على المفهوم الاسلامي لمفهوم حقوق الانسات 10 – معرفة الحقوق الفردية 11 – معرفة الحقوق المشتركة (فئوية) 12 – التعرف على الحقوق الجماعه 13 – معرفة الاهتمام الدولي المعاصر لحقوق الانسان وحرياته 14 – التعرف على سمات حقوق الانسان وحرياته

	15 – سمات حقوق الانسان في الحضارات القديمة
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	23. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 24. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 25. Students can handle the chemicals with good experience. 26. Students can develop their thoughts to create some projects that are useful in the field.
Indicative Contents **المحتويات الإرشادية**	ترتبط قضية حقوق الانسان وحرياته الاساسية وبشكل جذري ومباشر بقضية وجودنا وقد نشطت جميع العلوم وسخرت نظرياتها ومناهجها للنظر في ماهية الانسان حقوق النسان ثمرة من ثمار العلاقة بين السلطه والفرد ولذا فان مدار البحث فيها يظل قائما حيثما وجد الانسان ووجدت السلطه .
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	افكار اساسية بخصوص حقوق الانسان وحرياته
Week 2	حقوق الانسان مادة للفكر السياسي والقانون
Week 3	الدمج بين حقوق الانسان وحرياته
Week 4	تعريف حقوق الانسان وحرياته
Week 5	الفصل بين حقوق الانسان وحرياته
Week 6	مصادر حقوق الانسان وحرياته الاساسية
Week 7	المدارس الفكرية والسياسية والقانونية لحقوق الانسان
Week 8	المصادر الوطنية لحقوق الانسان
Week 9	المصادر العالمية لحقوق الانسان
Week 10	حقوق الإنسان في الدساتير العراقية بين النظرية والواقع
Week 11	العلاقة بين حقوق الإنسان والحريات العامة
Week 12	في الإعلان العالمي للحقوق الإنسان والمواثيق الدولية
Week 13	ملامح حقوق الإنسان في ظل الملكية المركزية
Week 14	اشكال واصناف حقوق الانسان والترابط بينها
Week 15	حقوق الانسان الفردية وحقوق الانسان الجماعية

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	لايوجد مختبر عملي لهذه الماده
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

- د.احمد جمال ظاهر ، حقوق الانسان ،عمان ، مركز النهضة 1988
2- د.نعيم عطية ،النظرية العامة للحريات الفردية ،القاهرة ،الدار القومية 1965
3- د.عزة سيد البرعي ، حماية حقوق الانسان في ظل التنظيم الدولي ،القاهرة ،مطبعة العاصمة 1985

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	CYTOLOGY	**Module Delivery**	
Module Type	S	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603012		
ECTS Credits	5.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**Hassanin Kahlil**	**e-mail**	
Module Leader's Acad. Title	Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	This course aims to introduce the cell as the primary unit in building a living organism and give the student information And the basic knowledge about the cell structure that enables one to know and understand the function and basic structure of the unit. Cellular cells and their various contents, as well as knowledge of the various vital activities that take place at the level of each cell Bite. This course also aims to enable the student to conduct the necessary laboratory experiments to consolidate concepts the theory		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After completing the course, the student will be able to: 1 - Reviews the basic scientific principles and concepts in cell science and the basic structure of any cell It clearly explains the differences between prokaryotic and eukaryotic cells, as well as the differences between cellular organelles Structurally and functionally. 2 - Connects the various scientific information and knowledge related to		

	cell science into a whole that reflects a complete understanding and familiarity with the whole body. With this knowledge. 3 - Explains the various biological processes of the various organisms and links them to their structure and biochemical activity. And the physiology of the cell and the organism as a whole.
Indicative Contents **المحتويات الإرشادية**	This course aims to introduce the cell as the primary unit in building a living organism and give the student information And the basic knowledge about the cell structure that enables one to know and understand the function and basic structure of the unit
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	

	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Reviews principles and concepts Basic science in cell science The basic structure of any cell
Week 2	**Clearly explains the differences between cells** **Prokaryotic and eukaryotic cells** **The nucleus as well as the differences between the organelles** **Cellular structure and function**
Week 3	History of science And its importance nd its connection In other sciences And cell theory
Week 4	Differences basic between Types of cells
Week 5	Molecules biological in cell, Its characteristics And its functions
Week 6	Membranes Cellular And the wall Cellular
Week 7	first exam
Week 8	Organelles Cell, its structure And its function
Week 9	The general structure, function and effects of the nucleus In different cells
Week 10	Types of nucleic acids and their differences Structural and functional among them.

Week 11	The nature of genetic material and its genetic structure.
Week 12	• the various nuclear activities are multiplying • And copy and paste it. •
Week 13	• Introduction to the structural structures of the prokaryotic cell • And eukaryotes •
Week 14	• Second Exam.
Week 15	• Models of plant cells that closely illustrate how the cell structure matches • Its function is explained through segments •

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

Cell Biology. S.C.RASTOGI, New Age International, 2002و

	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME

مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	QUALITATIVE ANALYSIS CHEMISTRY		**Module Delivery**		
Module Type	C		**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**		
Module Code	UOBAB0603021				
ECTS Credits	8.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Fouad Fadhil Al-Qaim**		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	First objective of this course is to provide enough information regarding analytical chemistry in term of preparation and instrumental analysis. Second objective is to develop an ability to distinguish between the accuracy and precision of experimental data and to show how to solve some challenges during the lab work. Third objective is to definition the developed and classical analysis methods. Fourth objective is to enable the students in preparation different solutions in different expression and how to related among them. Fifth objective is teaching the students the laboratory skills that will give students confidence in their ability to obtain high-quality analytical data.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	27. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 28. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 29. Students can handle the chemicals with good experience. 30. Students can develop their thoughts to create some projects that are useful in the field.
Indicative Contents **المحتويات الإرشادية**	Analytical chemistry deals with methods for determining the chemical composition of samples of matter. A **qualitative method** yields information about the identity of atomic or molecular species or the functional groups in the sample. A **quantitative method**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68

Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to analytical chemistry, classification, and historical overview
Week 2	- Equilibrium in chemical systems, including the equilibrium state and the equilibrium constant
Week 3	Equilibrium calculations, the effect of changing concentration on equilibrium
Week 4	- Solutions, including the chemical composition of solutions, saturated and supersaturated solutions, solubility,
Week 5	Methods of expressing special concentrations With solutions, chemical calculations
Week 6	- Ionic balance, acid function (pH), ionization constant for weak acids and weak bases
Week 7	Ionic tension, effectiveness and effectiveness constant
Week 8	Uses and calculations of the effectiveness constant. first test#
Week 9	The idea of the solubility product constant

Week 10	Its uses in sedimentation and separation
Week 11	Second Examination
Week 12	The idea of ionization: its uses and calculations
Week 13	Electrolytic solutions, modern theory of acids and bases .
Week 14	Buffer solutions, their types, capacity, and use of the pH of buffer solutions
Week 15	- Hydrolysis of salts, calculations of the pH of aqueous solutions and the degree of decomposition Complex ions and their ionization properties and uses in analytical chemistry
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Principles of precipitation of group II cations Separation and identification of group IIa cations in the mixture Cu2+, Cd2+, Pb2+, Hg2+.
Week 2	Separation and identification of Group II B cations in the mixture Cu2+, Cd2+, Pb2+, Hg2+, Bi3+. Questions and exercises
Week 3	Principles of precipitation of group III cations Separation and identification of group IIIa cations in the mixture Al3+, Cr3+, Mn2+, Fe2
Week 4	Separation and identification of group III B cations in the mixture Ni2+, Co2+, Mn2+, Zn2+. Questions and exercises.
Week 5	Separation and identification of Group IV cations (alkaline earth elements), Ba2+, Ca2+, Sr2+, questions and exercises
Week 6	Separating and identifying group five cations (alkaline elements), Mg2+, K+, Na+, NH4+, questions and exercises

	.
Week 7	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

1Vogel's Textbook of Quantitative Chemical Analysis, John Wiley & Sons fifth edition 1989.

2Douglas A. Skoog and Donald M.West, Fundamentals of Analytical Chemistry, fourth edition,1982.

3Christian G. D. "Analytical Chemistry" sixth edition, John Wiley & Sons,2003.

4Harris, D.C. Quantitative Chemical Analysis, seventh edition, W.H. Freeman, New York, 2007.

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	VOLUMETRIC ANALYSIS CHEMISTRY	**Module Delivery**
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical**
Module Code	UOBAB0603011	
ECTS Credits	8.00	

SWL (hr/sem)	150		**Seminar**		
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Fouad Fadhil Al-Qaim**		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	First objective of this course is to provide enough information regarding analytical chemistry in term of preparation and instrumental analysis. Second objective is to develop an ability to distinguish between the accuracy and precision of experimental data and to show how to solve some challenges during the lab work. Third objective is to definition the developed and classical analysis methods. Fourth objective is to enable the students in preparation different solutions in different expression and how to related among them. Fifth objective is teaching the students the laboratory skills that will give students confidence in their ability to obtain high-quality analytical data.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	31. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 32. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 33. Students can handle the chemicals with good experience. 34. Students can develop their thoughts to create some projects that are		

	useful in the field.
Indicative Contents **المحتويات الإرشادية**	Analytical chemistry deals with methods for determining the chemical composition of samples of matter. A **qualitative method** yields information about the identity of atomic or molecular species or the functional groups in the sample. A **quantitative method**
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Principles of analytical chemistry

Week 2	evaluation of analytical data
Week 3	elementary concepts
Week 4	solubility and concentration
Week 5	molarity *vs* normality
Week 6	Density *vs* specific gravity
Week 7	trace concentration (ppb, ppm and ppt)
Week 8	percentage concentration
Week 9	First examination
Week 10	stoichiometric relationships
Week 11	strong electrolytes *vs* weak electrolytes
Week 12	types of salts
Week 13	buffer solution
Week 14	slightly soluble salts I
Week 15	slightly soluble salts II
Week 16	Second Examination

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation and standardization of hydrochloric acid against borax or sodium carbonate
Week 3	Preparation and standardization of hydrochloric acid against sodium hydroxide
Week 4	Preparation and standardization of sodium hydroxide and sodium carbonate against hydrochloric acid
Week 5	Preparation and determination of acetic acid against sodium hydroxide
Week 6	Preparation and determination of chloride ion by Mohr's method titration.
Week 7	Determination of water hardness.

Learning and Teaching Resources
مصادر التعلم والتدريس

.1Vogel's Textbook of Quantitative Chemical Analysis, John Wiley & Sons fifth edition 1989

.2Douglas A. Skoog and Donald M.West, Fundamentals of Analytical Chemistry, fourth edition,1982

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.4Harris, D.C. Quantitative Chemical Analysis, seventh edition, W.H. Freeman, New York, 2007

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Physical Chemistry-2**			**Module Delivery**	
Module Type	C			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code					
ECTS Credits	4.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	**Hazim Yahya**		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	After careful study of this course the student should be able to: I- List and describe the Thermodynamics . II- Explain the meaning of the System. III- Define First law of thermodynamicst, First law of thermodynamicst,. IV- Calculate the work . V- Explain the Carnot cycle . VI- Derive and use the work equation. VII- Define and calculate the free energy. VIII- Describe the general procedure for calculation of Entroyp. IX- Describe the types of Maxwell relashin ship. Free energy and Helmholtz energy for closed systems		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1. It is well known that Physical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 2. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 3. Students can handle the chemicals with good experience.		
Indicative Contents **المحتويات الإرشادية**	1. It is well known that Physical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Phase and phase balances
Week 2	Clapeyron's equation and its applications
Week 3	Two-component system and types of miscibility
Week 4	Ideal solutions and associative properties: (low vapor pressure, high boiling point, low freezing point, osmotic pressure)
Week 5	Free energy and chemical equilibria
Week 6	
Week 7	First exam.
Week 8	Statistical thermodynamics and Boltzmann's law of distribution
Week 9	The hash function and its calculation for all types of motion (translational, rotational, and

	vibrational)
Week 10	Calculating thermal energy,
Week 11	thermal enthalpy,
Week 12	entropy for all types of motion
Week 13	Calculating free energy and equilibrium constant using partition functions
Week 14	Second Exam.
Week 15	Discussion the home work
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Determination the one phase diagram
Week 3	Phenol- water phase diagram
Week 4	Refractive index
Week 5	Three component system
Week 6	Boiling point elevation
Week 7	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

Physical Chemistry, Atkins, 6th ed. 2001

- **.Problems in physical chemistry 1st , by K.K. Shrma,1994**
- **.Physical chemistry 5th by Walter J. Moor, 1972**
- **.Physical chemistry 7th by Robert Al-Berty, 1987**

	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
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	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Mathematics**	**Module Delivery**	
Module Type	S	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	2.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	**Ziyad Khalaf**	**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	1-To know the cardinal factor, homology, and Asian functions. 2- Learn how to calculate limits. 3- Be able to perform differentiation. 4- Distinguish between partial differentiation and ordinary differentiation. 5- Learn about the Cauchy-Riemann equations. 6- Learn how to integrate. 7- Learn about Integration methods. 8- Can implement the multiplier. 9- Distinguish between partial integration and arbitrary integration.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	4. Functions in a real variable - objectives - continuity - differentiation - integration.
Indicative Contents **المحتويات الإرشادية**	Learn how to integrate. Learn about Integration methods. Can implement the multiplier. Distinguish between partial integration and arbitrary integration.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation
تقييم المادة الدراسية

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome

Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Implicit derivation
Week 2	integration
Week 3	Indefinite integration
Week 4	Integration methods
Week 5	Partial derivation
Week 6	Integration methods
Week 7	Exercise solutions
Week 8	Partial integration
Week 9	Complex numbers
Week 10	Double integration
Week 11	Cauchy_Riemann equations
Week 12	Exercise solutions
Week 13	Cauchy_Riemann equations
Week 14	Double integration
Week 15	Second exam
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
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	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**ORGANIC CHEMISTRY-2**	**Module Delivery**

Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	4.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	د. نور عبد الرزاق	**e-mail**	
Module Leader's Acad. Title	استاذ مساعد	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	After careful study of this course the student should be able to: I- Introduction in organic chemistry, chemical bond, reaction of organic chemistry. II- Explain the meaning of the Alkanes: introduction, properties, names, preparations, mechanism, reactions. III- Define Dienes : introduction, properties, names, Alkynes: introduction, properties, names,,. IV- Alkynes: preparations. V- Explain the Alkynes: , mechanism, reactions. VI- Cyclo alkane: introduction, properties, names, preparations. VII- Cyclo alkane: mechanism, reactions		

Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	5. It is well known that Organic chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 6. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 7. Students can handle the chemicals with good experience.
Indicative Contents **المحتويات الإرشادية**	2. It is well known that Organic chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7

	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Aromatic compounds: (Part Two) Introduction to them, their structure, naming, properties, mechanics of preparation, and interactions.
Week 2	Alkyl halides: introduction, structure, nomenclature, properties, mechanics of preparation, reactions, and analysis. Written exam, semester 2.
Week 3	Alcohols: introduction, structure, nomenclature, properties, mechanics of preparation,, interactions, and analysis.
Week 4	Alcohols:, properties,
Week 5	Alcohols: mechanics of preparation,,
Week 6	Alcohols:, interactions, and analysis.
Week 7	First Exam
Week 8	Ethers: introduction, structure, nomenclature.
Week 9	Ethers: introduction, structure, nomenclature
Week 10	Alkynes: preparations
Week 11	Alkynes: , mechanism, reactions
Week 12	Cyclic ethers: introduction, structure, nomenclature
Week 13	Cyclic ethers:, reactions, mechanics, preparation, interactions, desalination.
Week 14	review
Week 15	Second Examination
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation of alkyl halides
Week 3	Distinction between alcohols
Week 4	Distinguish between aldehyde and ketone
Week 5	Preparing aspirin
Week 6	Preparing soap
Week 7	Month exam

Learning and Teaching Resources
مصادر التعلم والتدريس

.1 **Organic chemistry by R. Morrisn and R. boyd ,4th Edition Allyn and Bacon1998**

2-الكيمياء العضوية فهدعلي حسين وجماعته الجزء الاول جامعة بغداد 1977

Organic reaction mechanisms by Groutas, William 1st edition 2000

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**ORGANIC CHEMISTRY-2**	**Module Delivery**	
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	4.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	د. نور عبد الرزاق	**e-mail**	
Module Leader's Acad. Title	استاذ مساعد	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	After careful study of this course the student should be able to: I- Introduction in organic chemistry, chemical bond, reaction of organic chemistry. II- Explain the meaning of the Alkanes: introduction, properties, names, preparations, mechanism, reactions. III- Define Dienes : introduction, properties, names, Alkynes: introduction, properties, names,,. IV- Alkynes: preparations. V- Explain the Alkynes: , mechanism, reactions. VI- Cyclo alkane: introduction, properties, names, preparations. VII- Cyclo alkane: mechanism, reactions		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	8. It is well known that Organic chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 9. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 10. Students can handle the chemicals with good experience.		
Indicative Contents **المحتويات الإرشادية**	3. It is well known that Organic chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry.		
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**			
Strategies			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Aromatic compounds: (Part Two) Introduction to them, their structure, naming, properties, mechanics of preparation, and interactions.
Week 2	Alkyl halides: introduction, structure, nomenclature, properties, mechanics of preparation, reactions, and analysis. Written exam, semester 2.
Week 3	Alcohols: introduction, structure, nomenclature, properties, mechanics of preparation,, interactions, and analysis.

Week 4	Alcohols:, properties,
Week 5	Alcohols: mechanics of preparation,,
Week 6	Alcohols:, interactions, and analysis.
Week 7	First Exam
Week 8	Ethers: introduction, structure, nomenclature.
Week 9	Ethers: introduction, structure, nomenclature
Week 10	Alkynes: preparations
Week 11	Alkynes: , mechanism, reactions
Week 12	Cyclic ethers: introduction, structure, nomenclature
Week 13	Cyclic ethers:, reactions, mechanics, preparation, interactions, desalination.
Week 14	review
Week 15	Second Examination
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation of alkyl halides
Week 3	Distinction between alcohols
Week 4	Distinguish between aldehyde and ketone
Week 5	Preparing aspirin
Week 6	Preparing soap
Week 7	Month exam

Learning and Teaching Resources
مصادر التعلم والتدريس

1. Organic chemistry by R. Morrisn and R. boyd ,4th Edition Allyn and Bacon1998
2-الكيمياء العضوية فهدعلي حسين وجماعته الجزء الاول جامعة بغداد 1977
Organic reaction mechanisms by Groutas, William 1st edition 2000

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	**Physical Chemistry-1**	**Module Delivery**	
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	4.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**Hazim Yahya**	**e-mail**	
Module Leader's Acad. Title	Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	After careful study of this course the student should be able to: I- List and describe the Thermodynamics . II- Explain the meaning of the System. III- Define First law of thermodynamicst, First law of thermodynamicst,. IV- Calculate the work . V- Explain the Carnot cycle . VI- Derive and use the work equation. VII- Define and calculate the free energy. VIII- Describe the general procedure for calculation of Entroyp. IX- Describe the types of Maxwell relashin ship. Free energy and Helmholtz energy for closed systems		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	11. It is well known that Physical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 12. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 13. Students can handle the chemicals with good experience.		
Indicative Contents	4. It is well known that Physical chemistry is the main subject in		

المحتويات الإرشادية	chemistry which mean it can be taken in all types of chemistry.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Thermodynamics in general
Week 2	Zero law of thermodynamics
Week 3	The first law of thermodynamics

Week 4	Applications of the first law of thermodynamics
Week 5	Isothermal and literary processes
Week 6	The phenomenon of Jules - Thompson and its applications
Week 7	First exam.
Week 8	Hess's law and its applications
Week 9	Enthalpy change the reaction with temperature
Week 10	The second law of thermodynamics - basic concepts
Week 11	Entropy changes (for phase transfer, To expand and compress gases and to change temperatures)
Week 12	Free energy and Helmholtz energy for closed systems
Week 13	Third law of thermodynamics and its applications
Week 14	Second Exam.
Week 15	Discussion the home work
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation and standardization of hydrochloric acid against borax or sodium carbonate
Week 3	Preparation and standardization of hydrochloric acid against sodium hydroxide
Week 4	Preparation and standardization of sodium hydroxide and sodium carbonate against hydrochloric acid
Week 5	Preparation and determination of acetic acid against sodium hydroxide
Week 6	Preparation and determination of chloride ion by Mohr's method titration.
Week 7	Determination of water hardness.

Learning and Teaching Resources

مصادر التعلم والتدريس

Physical Chemistry, Atkins, 6th ed. 2001

- **.Problems in physical chemistry 1st , by K.K. Shrma,1994**

.Physical chemistry 5th by Walter J. Moor, 1972 • .Physical chemistry 7th by Robert Al-Berty, 1987 •		
	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	**Separation Methods**	**Module Delivery**	
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	3.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**د . اسيل مشتاق كاظم**	**e-mail**	
Module Leader's Acad. Title	استاذ مساعد	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	First objective of this course is to provide enough information regarding analytical chemistry in term of preparation and instrumental analysis. Second objective is to develop an ability to distinguish between the accuracy and precision of experimental data and to show how to solve some challenges during the lab work. Third objective is to definition the developed and classical analysis methods. Fourth objective is to enable the students in preparation different solutions in different expression and how to related among them. Fifth objective is teaching the students the laboratory skills that will give students confidence in their ability to obtain high-quality analytical data.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	14. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 15. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 16. Students can handle the chemicals with good experience. 17. Students can develop their thoughts to create some projects that are useful in the field.		
Indicative Contents **المحتويات الإرشادية**	Analytical chemistry deals with methods for determining the chemical composition of samples of matter. A **qualitative method** yields information about the identity of atomic or molecular species or the functional groups in the sample. A **quantitative**		

	method

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Analytical separation methods
Week 2	Analytical class classification
Week 3	Separation by sedimentation

Week 4	Separation by distillation
Week 5	Extraction
Week 6	Ion exchangers
Week 7	Chromatography
Week 8	First Exam
Week 9	Analytical separation methods
Week 10	Analytical class classification
Week 11	Separation by sedimentation
Week 12	Separation by distillation
Week 13	Extraction
Week 14	Second Exam
Week 15	Chromatography
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Determination of aluminum in homogeneous solutions
Week 2	Cement analysis
Week 3	Ion exchange separation methods and testing
Week 4	Preparing the ion exchanger column and estimating the total capacity of the column
Week 5	Determine the ratio of sodium chloride and nitrate in a model
Week 6	Determine the hardness of water using a cation exchanger.
Week 7	Paper and thin layer chromatography.

Learning and Teaching Resources
مصادر التعلم والتدريس

1-Douglas A. Skoog , Funamentals of analytical nchemistry 4th edit. Holt Rinehart - مدخل الى تقنيات الفصل في الكيمياء ، د. سمير عبد الرحيم ، جامعة الموصل 1985 3- طرق الفصل في التحليل الكيميائي ، د. البرتين حبوش ، مطبعة جامعة بغداد 1982 4		
	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	COMPUTER	**Module Delivery**	
Module Type	B	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	2.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	**HazimYahya**	**e-mail**	
Module Leader's Acad. Title	Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Teaching the student to be familiar with the basic rules for dealing with and managing a computer to help him complete projects Printing matters, preparing statistics and graphs, creating presentations and designing engineering plans And others, and the emergence of the Internet as a means of communication available to everyone, it has become very necessary for students to learn to use Computer due to the role of the Internet in many fields, including education, scientific research, trade and marketing		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	18. The student's understanding of the material 19. The ability to analyze and apply what you have learned practically on the calculator 20. The evaluation should be done by presenting the material to the students in the laboratory and then applying it		
Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.		

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Phases of the computer course And its generations and data And information
Week 2	**Computer features** **And areas of its use** **And its components**

Week 3	Types of computers And its classification
Week 4	Computer components and parts Physical input devices And the output
Week 5	Computer box and software entity
Week 6	Preparation systems and personal computers
Week 7	first exam
Week 8	Computer platform and factors Which should be considered when purchasing the computer
Week 9	Main features of a personal computer
Week 10	viruses the computer
Week 11	Damage resulting from Viruses
Week 12	• The most important steps • Viruses- • Necessary to protect against hacking •
Week 13	• Virus components • Computer damage • And its types •
Week 14	• Second Exam.
Week 15	• Sources of hacking and risks

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	**لايوجد عملي في هذه الماده**
Week 2	

Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

[1] Mars climate orbiter. http://mars.jpl.nasa.gov/msp98/orbiter/, 1999. [Online; accessed 17-March-2015]. [2] Moth in the machine: Debugging the origins of 'bug'. Computer World Magazine, September 2011. [3] errno.h: system error numbers - base definitions reference. http://pubs.opengroup. org/onlinepubs/9699919799/basedefs/errno.h.html, 2013. [Online; accessed 13-September-2015].

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	COMPUTER	**Module Delivery**
Module Type	B	**Theory** **Lecture** **Lab** **Tutorial** **Practical**
Module Code		
ECTS Credits	2.00	

SWL (hr/sem)	150	**Seminar**	
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	**HazimYahya**	**e-mail**	
Module Leader's Acad. Title	Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Teaching the student to be familiar with the basic rules for dealing with and managing a computer to help him complete projects Printing matters, preparing statistics and graphs, creating presentations and designing engineering plans And others, and the emergence of the Internet as a means of communication available to everyone, it has become very necessary for students to learn to use Computer due to the role of the Internet in many fields, including education, scientific research, trade and marketing		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	21. The student's understanding of the material 22. The ability to analyze and apply what you have learned practically on the calculator 23. The evaluation should be done by presenting the material to the students in the laboratory and then applying it		

Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Phases of the computer course And its generations and data

	And information
Week 2	**Computer features** **And areas of its use** **And its components**
Week 3	Types of computers And its classification
Week 4	Computer components and parts Physical input devices And the output
Week 5	Computer box and software entity
Week 6	Preparation systems and personal computers
Week 7	first exam
Week 8	Computer platform and factors Which should be considered when purchasing the computer
Week 9	Main features of a personal computer
Week 10	viruses the computer
Week 11	Damage resulting from Viruses
Week 12	• The most important steps • Viruses- • Necessary to protect against hacking •
Week 13	• Virus components • Computer damage • And its types •
Week 14	• Second Exam.
Week 15	• Sources of hacking and risks

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	لايوجد عملي في هذه الماده
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

[1] Mars climate orbiter. http://mars.jpl.nasa.gov/msp98/orbiter/, 1999. [Online; accessed 17-March-2015].
[2] Moth in the machine: Debugging the origins of 'bug'. Computer World Magazine, September 2011. [3] errno.h: system error numbers - base definitions reference. http://pubs.opengroup.org/onlinepubs/9699919799/basedefs/errno.h.html, 2013. [Online; accessed 13-September-2015].

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	ENGLISH LANGUAGE	**Module Delivery**

Module Type	B	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOBAB0603026		
ECTS Credits	2.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	**Amina Ameer**	**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	1- Explaining the material in a clear and understandable way for all students. 2. Involve students in discussing and solving exercises. 3- Explaining the study material using various methods An explanation to develop students' abilities and break boredom in the classroom		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	24. The student's understanding of the material 25. The ability to analyze and apply what you have learned practically on the English 26. The evaluation should be done by presenting the material to the students in the laboratory and then applying it		

Indicative Contents **المحتويات الإرشادية**	The theoretical method and explanation is by presenting the material on the Point Power program in the form of diagrams and pictures This is to attract the student's attention and help him not feel bored. The practical method is to apply what has been presented On the calculator and conduct daily and monthly exams.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered

Week 1	Present simple (I Do)
Week 2	Present continuous and simple 1
Week 3	Present continuous and simple 2
Week 4	Past simple (IDid)
Week 5	Past continuous (I was doing)
Week 6	Present perfect 1(have done)
Week 7	Present perfect 2(I have done)
Week 8	Present perfect continuous (I have been doing)
Week 9	Present perfect continuous and simple
Week 10	First Exam
Week 11	For and since When ..? and how long
Week 12	Present perfect and past 1(I have done and Did)
Week 13	Past perfect (I had done)
Week 14	Past perfect continuous (I had been doing)
Week 15	• Second Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	لايوجد عملي في هذه الماده
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

Stern, H.H. (1992). Issues and options in language teaching (edited posthumously by Patrick Allen & Birgit Harley). Oxford: Oxford University Press. Ur, P. (1996). A Course in Language Teaching.

Cambridge: Cambridge University Press. Vermes, A. (2010). Translation in foreign language teaching: A brief overview of pros and cons, Eger, Journal of English Studies, 10, 83-93.		
	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

Note:

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	**Chemistry of represented elements 1**	**Module Delivery**	
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code			
ECTS Credits	3.00		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department		**College**	

Module Leader	د. محمد حامد سعيد	**e-mail**	
Module Leader's Acad. Title	استاذ	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry. The relationship between chemical elements and their compounds is based primarily on atomic structures and electronic configurations. Chemical bonding of different types are found in molecular and ionic compounds, and these bonding types are discussed in terms of the latest theories and experimental results. Topics such as coordination compounds, boron hydrides, metal cluster compounds, metal carbonyls, solid state structures, and the geometry of finite molecular species are presented. The correlation of physical properties with structure, composition, and electronic states of the metal ionics are developed, based on theoretical considerations.		
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	27. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 28. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 29. Students can handle the chemicals with good experience. 30. Students can develop their thoughts to create some projects that are		

	useful in the field.
Indicative Contents **المحتويات الإرشادية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered

Week 1	1- A general introduction to the periodic table.
Week 2	2- A general review of the basics of periodic change in physical and chemical properties.
Week 3	3- Introduction to methods of preparing and extracting elements and their compounds.
Week 4	4- Division of elements according to properties
Week 5	5- Study of the element hydrogen
Week 6	6- Study of the basic compounds of hydrogen
Week 7	7- Exam1
Week 8	8- Study the first group and methods of preparing it
Week 9	9- Study the uses of the elements of the first group
Week 10	10- Study the second group and methods of preparing it
Week 11	11- Study the uses of the elements of the second group
Week 12	12- Study of the third group and methods of preparing it
Week 13	13- Study the properties of boron and aluminum
Week 14	14- Study the uses of the elements of the third group
Week 15	Exam2
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation and standardization of hydrochloric acid against borax or sodium carbonate
Week 3	Preparation and standardization of hydrochloric acid against sodium hydroxide
Week 4	Preparation and standardization of sodium hydroxide and sodium carbonate against hydrochloric acid

Week 5	Preparation and determination of acetic acid against sodium hydroxide
Week 6	Preparation and determination of chloride ion by Mohr's method titration.
Week 7	Determination of water hardness.

Learning and Teaching Resources
مصادر التعلم والتدريس

د. نعمان ألنعيمي "الكيمياء اللاعضوية" الجزء ألاول و الثاني ، مطبعة جامعة بغداد، 1978.

1- د. أحسان عبد الغني مصطفى " الكيمياء اللاعضوية والتناسقية" ، مطبعة جامعة الموصل، 1988.

2- د. باسم محمد سعيد " الكيمياء اللاعضوية العملي " ، مطبعة جامعة الموصل ، 1987.

3- P.J.Durrant " General and inorganic chemistry" , 3rd edition, Dai Nippon Printing Co(H.K) Ltd, 1964.

4- J.D. Lee " Consice inorganic chemistry", 1970.

5- M.R.Wright " An Introduction to Aqueos Electrolyte Solution" , John wiley and sons, 2007

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Chemistry of represented elements 2**	**Module Delivery**
Module Type	C	**Theory** **Lecture** **Lab** **Tutorial** **Practical**
Module Code		
ECTS Credits	3.00	

SWL (hr/sem)	150	**Seminar**	
Module Level		**Semester of Delivery**	
Administering Department		**College**	
Module Leader	د. محمد حامد سعيد	**e-mail**	
Module Leader's Acad. Title	استاذ	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**			
Module Aims **أهداف المادة الدراسية**	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry. The relationship between chemical elements and their compounds is based primarily on atomic structures and electronic configurations. Chemical bonding of different types are found in molecular and ionic compounds, and these bonding types are discussed in terms of the latest theories and experimental results. Topics such as coordination compounds, boron hydrides, metal cluster compounds, metal carbonyls, solid state structures, and the geometry of finite molecular species are presented. The correlation of physical properties with structure, composition, and electronic states of the metal ionics are developed, based on theoretical considerations.		
Module Learning Outcomes	31. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 32. Students are able to prepare the accurate concentration for the		

مخرجات التعلم للمادة الدراسية	solutions in any lab they do experiment. 33. Students can handle the chemicals with good experience. 34. Students can develop their thoughts to create some projects that are useful in the field.
Indicative Contents المحتويات الإرشادية	Inorganic chemistry is the study of the chemical elements and the reactions which these elements undergo. With the exclusion of carbon, there exist some 90 naturally-occurring chemical elements. The broad classification of these elements, first in the Periodic Table, then in special families, groups, and periods, form the basis of inorganic chemistry.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	64
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	68
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Group VII B elements, compounds of halogens with hydrogen, halides and methods of preparing them.
Week 2	Interstitial halogen compounds, polyhalide ions, semi-halogens.
Week 3	Group II B elements, their electronic structure and tendency to form complexes, mercury compounds (oxides, hydroxides).
Week 4	Mercury halides, mercury complexes, organic compounds of zinc, cadmium and mercury
Week 5	Noble gases, their existence and uses, helium chemistry. .
Week 6	Chemistry of xenon, xenon compounds (fluorides, their preparation and forms, xenon (II) oxide and hydroxide), molecular addition compounds.
Week 7	7- Exam1
Week 8	Xenon (IV) compounds, its fluorides and chlorides.
Week 9	Xenon (VI) compounds, its fluorides, methods of preparation, chemical and physical properties, xenon trioxide
Week 10	Hexa xenes, xenon (VIII) compounds (fluorides, xenon tetraoxide, octa xenes)
Week 11	Chemistry of krypton and its compounds
Week 12	Chemistry and compounds of radon (radon fluorides)
Week 13	Introduction to nuclear chemistry
Week 14	The ratio of isotopes in nature, the ratio of neutrons to protons, radioactive decay. Application areas of accelerators, chemical purity, benefits and harms of radiation.
Week 15	Exam2
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Preparation of ferric hydroxide

Week 2	Preparation of cuprous chloride
Week 3	Preparation of silver oxide
Week 4	Preparation of mercury acetate
Week 5	Detection of carbonate and bicarbonate acid moieties
Week 6	Detection of sulfite acid moiety Detection of the acidic thiosulfite moiety
Week 7	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

د. نعمان ألنعيمي "الكيمياء اللاعضوية" الجزء ألاول و الثاني ، مطبعة جامعة بغداد، 1978.

1- د. أحسان عبد الغني مصطفى " الكيمياء اللاعضوية والتناسقية" ، مطبعة جامعة الموصل، 1988.

2- د. باسم محمد سعيد " الكيمياء اللاعضوية العملي " ، مطبعة جامعة الموصل ، 1987.

3- P.J.Durrant " General and inorganic chemistry" , 3rd edition, Dai Nippon Printing Co(H.K) Ltd, 1964.

4- J.D. Lee " Consice inorganic chemistry", 1970.

5- M.R.Wright " An Introduction to Aqueos Electrolyte Solution" , John wiley and sons, 2007

	Text	Available in the Library?
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	**امتياز**	90 - 100	Outstanding Performance
	B - Very Good	**جيد جدا**	80 - 89	Above average with some errors
	C - Good	**جيد**	70 - 79	Sound work with notable errors
	D - Satisfactory	**متوسط**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**مقبول بقرار**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq University of Babylon College of Science for women Department of Chemistry	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Gravimetric analysis**		**Module Delivery**		
Module Type	C		**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**		
Module Code					
ECTS Credits	3.00				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department			**College**		
Module Leader	د . اسيل مشتاق كاظم		**e-mail**		
Module Leader's Acad. Title	استاذ مساعد		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims **أهداف المادة الدراسية**	First objective of this course is to provide enough information regarding analytical chemistry in term of preparation and instrumental analysis. Second objective is to develop an ability to distinguish between the accuracy and precision of experimental data and to show how to solve some challenges during the lab work. Third objective is to definition the developed and classical analysis methods. Fourth objective is to enable the students in preparation different solutions in different expression and how to related among them. Fifth objective is teaching the students the laboratory skills that will give students confidence in their ability to obtain high-quality analytical data.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	35. It is well known that analytical chemistry is the main subject in chemistry which mean it can be taken in all types of chemistry. 36. Students are able to prepare the accurate concentration for the solutions in any lab they do experiment. 37. Students can handle the chemicals with good experience. 38. Students can develop their thoughts to create some projects that are useful in the field.
Indicative Contents **المحتويات الإرشادية**	Analytical chemistry deals with methods for determining the chemical composition of samples of matter. A **qualitative method** yields information about the identity of atomic or molecular species or the functional groups in the sample. A **quantitative method**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	64	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	68	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	68

Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	A general idea about weight analysis and basic principles
Week 2	Classification of gravimetric analysis methods
Week 3	Types of precipitants and exam
Week 4	solubility
Week 5	Precipitate contamination
Week 6	Precipitation from homogeneous solutions
Week 7	Organic reagents and testing
Week 8	First Exam
Week 9	Analytical separation methods
Week 10	Analytical class classification
Week 11	Separation by sedimentation
Week 12	Separation by distillation

Week 13	Extraction
Week 14	Second Exam
Week 15	Chromatography
Week 16	

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Definition of some laboratory equipment and chemical safety in the lab
Week 2	Preparation and standardization of hydrochloric acid against borax or sodium carbonate
Week 3	Preparation and standardization of hydrochloric acid against sodium hydroxide
Week 4	Preparation and standardization of sodium hydroxide and sodium carbonate against hydrochloric acid
Week 5	Preparation and determination of acetic acid against sodium hydroxide
Week 6	Preparation and determination of chloride ion by Mohr's method titration.
Week 7	Determination of water hardness.

Learning and Teaching Resources
مصادر التعلم والتدريس

1-Douglas A. Skoog , Funamentals of analytical nchemistry 4th edit. Holt Rinehart

- مدخل الى تقنيات الفصل في الكيمياء ، د. سمير عبد الرحيم ، جامعة الموصل 1985

3- طرق الفصل في التحليل الكيميائي ، د. البرتين حبوش ، مطبعة جامعة بغداد 1982

- Hein Morris ,Leo R. Best ,Scott Patinson and Susan , An introduction to general chemistry , 7th edition , 20014

	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts		No
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
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Ministry of Higher Education and Scientific Research

Scientific Ssupervision and Evaluation device

Department of Quality Assurance and Academic Accreditation

International Accreditation Department

Academic Program Description For the Department of Chemistry for the Academic year 2025-2024according Bologna process

Academic Program Description Form

University Name: University of Babylon

College/Institute: College of Science for Women

Name of the academic or professional program: Bachelor's in Chemistry

Name of final degree: Bachelor's in Chemistry

Study system: Bologna track

Description preparation date: 20/11/2024

Date of filling out the file: 19/2/2025

Signature: **Signature:**

Name of Department Head

Hazim Yahya Mohammed Ali

Date: 6 / 3 / 2025

Name of Scientific Assistant

Dr. Kawthar Mohammed Ali Hassan

Date: 6 / 3 / 2025

The file is checked by

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Mohammed J.Jader

Date: 6 / 3 / 2025

Signature:

Approval of the Dean

Academic Program Description

1. Program Vision

Preparing a scientific and technical staff specialized in chemical analysis techniques with the ability to deal with all techniques in chemical analysis with high professionalism, including analyzes concerned with treating pollution from heavy chemical substances and elements such as lead and mercury that affect the lives of citizens. The department also contributes to the scientific research movement and introductory, developmental and advisory conferences. The unified curricula have been adopted with most Iraqi universities - the Department of Chemistry for the purpose of easy movement between departments in addition to scientific benefit from them, taking into account the requirements of the college as a scientific college according to Bologna process.

2. Program Mission

The Department of Chemistry at the College of Science for Girls seeks, in integration with the college's mission, to meet the community's needs for cadres specialized in chemistry, such as pathological analyzes and the use of modern techniques in the field of analysis of toxic and non-toxic elements in all scientific and practical applications, especially in the medical and industrial fields, and the preparation of cadres required by this. Specialized research to work in this field and keep up with the latest developments in it Bologna process.

In order to achieve the vision of the College of Science for Girls and to carry out its pioneering role in assuming a prominent scientific position among local, Arab and foreign colleges, the Department of Chemistry seeks to disseminate and consolidate the latest information about chemistry in Iraqi society to keep pace with the tremendous development that has been achieved during the last three decades in this field and at all levels of Nanotechnology and even outer space.

3. Program Objectives

.1Preparing efficient cadres in the field of chemistry sciences

.2 Contribute to the development of cadres working in the field of chemical sciences in various sectors such as the manufacture of fertilizers, oils and dairy.

.3 Developing the work system in the field of chemistry

.4 Spreading scientific awareness in the field of chemistry

5. Calculation of work in the industrial field related to chemistry according to Bologna process.

4. Programmatic Accreditation

nothing

5. Other External Influences

nothing

6. Program Structure

Program Structure	*Number of courses*		*Credit hours*		*Percentage*	*Reviews*
Enterprise Requirements	The first stage,Course (1), according to the Bologna system	2	The first stage,Course (1), according to the Bologna system	4	%13.3	Basic
	The first stage,Course (2), according to the Bologna system	2	The first stage,Course (2), according to the Bologna system	5	%16.6	
Total summation		10		19		

College Requirements	The first stage,Course (1), according to the Bologna system	1	The first stage,Course (1), according to the Bologna system	5	%16.6	Basic
	The first stage,Course (2), according to the Bologna system	1	The first stage,Course (2), according to the Bologna system	4	%13.3	
Total summation		2		9		
Department Requirements	The first stage,Course (1), according to the Bologna system	3	The first stage,Course (1), according to the Bologna system	21	%70	Basic
	The first stage,Course (2), according to the Bologna system	3	The first stage,Course (2), according to the Bologna system	21	%70	
Total summation		48		143		
Summer Training	1		-			Basic

7. Program Description

Year/level	course code	Name of the course	Credit hours	
			Theoretical	Practical

المرحلة الاولى- نظام بولونيا 2024- 2025

Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Babylon
Bachelor's degree in chemistry science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2024 - 2025)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة بابل
بكالوريوس في علوم الكيمياء (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٤-٢٠٢٥

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w	ect (hr/w	ab (hr/w	Pr (hr/w	Tut (hr/w	emn (hr/w	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	One	1	CHEM1111	Qualitative Analysis Chemistry	كيمياء التحليل النوعي	English	2	0	2	0	0	0	3	63	137	200	8.00	C	
		2	CHEM1112	Inorganic1	اللاعضوية ١	English	2	0	0	0	0	0	3	33	142	175	7.00	C	
		3	CHEM1103	Cytology	علم الخليه	English	2	0	2	0	0	0	3	63	87	150	6.00	S	
		4	CHEM1104	Labortary Safty	السلامة والامن الكيمياي	English	2	0	0	0	0	0	3	33	92	125	5.00	S	
		5	UOBAB1104	Human and Democracy	حقوق الانسان والديمقراطيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
		6	UOBAB1102	Arabic Language	اللغة العربيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	4	0	0	0	18	258	492	750	30.00		

UGl	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w	ect (hr/w	ab (hr/w	Pr (hr/w	Tut (hr/w	emn (hr/w	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Two	1	CHEM1201	Volumetric Analysis Chemistry	كيمياء التحليل الحجمي	English	2	0	2	0	0	0	3	63	137	200	8.00	C	CHEM1111
		2	CHEM1202	Inorganic 2	اللاعضوية ٢	English	2	0	0	0	0	0	3	33	142	175	7.00	C	CHEM1112
		3	CHEM1203	Mathematics I	رياضيات I	English	2	0	0	0	0	0	3	33	67	100	4.00	S	
		4	CHEM1204	Physics Science	الفيزياء	English	2	0	2	0	0	0	3	63	87	150	6.00	S	
		5	UOBABb4	Computer I	حاسوب I	Arabic	2	0	0	0	0	0	3	33	42	75	3.00	B	
		6	UOBABb1101	English Language I	لغة الانكليزية I	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	4	0	0	0	18	258	492	750	30.00		

المرحلة الثانيه –نظام بولونيا 2024 - 2025

Republic of Iraq - Ministry of Higher Education and Scientific Research

University of Babylon

Bachelor's degree in chemistry science (First cycle)

Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr

Program Curriculum (2024 - 2025)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي

جامعة بابل

بكالوريوس في علوم الكيمياء (الدورة الأولى)

أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة

المنهاج الدراسي للعام ٢٠٢٤_٢٠٢٥

Level	Semester	No.	Module Code	Module Name In English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
	One	1	CHEM2311	Chemistry of represented elements 1	كيمياء العناصر الممثلة١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		2	CHEM2302	Gravimetric analysis	التحليل الوزني	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM2313	Thermodynamics1	الديناميه الحراريه١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		4	CHEM2314	Organic Chemistry1	الكيمياء العضوية١	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		5	CHEM2305	Differential equations	المعادلات التفاضلية	English	2	0	0	0	0	0	3	33	42	75	3.00	S	
		6		Computer 2	الحاسوب ٢	English	2	0	0	0	0	0	3	33	42	75	3.00	S	
						Total	12	0	8	0	0	0	18	318	432	750	30.00		

UGl	emest	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							:L (hr/w	ect (hr/w	ab (hr/w	r (hr/w	ut (hr/w	emn (hr/							
	Two	1	CHEM2401	Chemistry of represented elements 2	كيمياء العناصر الممثلة ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2311
		2	CHEM2402	Separation Methods	طرق الفصل	English	2	0	2	0	0	0	3	63	87	150	6.00	C	
		3	CHEM2403	Thermodynamics 2	الديناميه الحراريه ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2313
		4	CHEM2404	Organic Chemistry 2	الكيمياء العضوية ٢	English	2	0	2	0	0	0	3	63	87	150	6.00	C	CHEM2314
		5	UOBAB2301	Baath Party crimes	جرائم البعث البائد	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	S	
			UOBAB2302	English Languagell	اللغة الانكليزيه II	English	2	0	0	0	0	0	3	33	17	50	2.00	S	
			UOBAB1102	Arabic Language	اللغة العربيه	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
						Total	12	0	8	0	0	0	18	318	432	750	30.00		

8.The expected learning outcomes of the program	
Knowledge	
Knowledge and Understanding	1- 1. The student gets to know the concept of chemistry 2- 2. To classify the needs for developing chemistry 3- 3. To separate the chemical specifications according to the ISO system 4- 4. To evaluate the cost of maintaining chemical manufacturing equipment
Skills	
Subject-Specific Skills	.1The student's knowledge of the concept of chemistry .2The importance of chemistry in areas of life 3. Enabling female students to analyze the costs of working in the chemical industry
Thinking Skills	.1Thinking skill according to the student's ability (the goal of this skill is for the student to believe in what is tangible (the student's abilities) and understand when, what and how he should think and work to improve the ability to think reasonably(.2 High thinking skill (the goal of this skill is to teach thinking well before making the decision that determines the student's life(3. Critical thinking skills (a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it
Ethics	

Evaluation methods	1- Exams 2- Learning Matrix 3- Which Face 4- CAT (student feedback) 5- Learning Triangle 6- Seminars 7- On line lecture

9. Teaching and Learning Strategies

Learning strategies

1-Thinking strategy according to the student's ability (for example: if the student is able to learn the correct concept of management, he will acquire the skill of managing and organizing his personal life).

2- High thinking skill strategy (for example, if the student wants to make a good decision, it is important that he thinks well before he makes the decision, and if he decides without thinking, or if he cannot think well, or if he cannot decide, or perhaps he will not decide, then this This means he does not have high thinking skills.)

3- Critical thinking strategy in learning (Critical Thanking) (It is a term that symbolizes the highest levels of thinking, which aims to pose a problem and then analyze it logically to reach the desired solution).

4-Brainstorming

Methods of teaching and learning

1- Method of giving lectures.

2- Student Center

3- Student groups

4- Workshops 5- (Scientific trips to follow up on the environmental reality) 6- Learning Technologies on Campus 7- (Experiential learning) 8- Application Learning)

10. Evaluation methods
1- Exams 2- Learning Matrix 3- Which Face 4- CAT (student feedback) 5- Learning Triangle ***6-*** practical ***8-*** tutorial

11. Faculty

Faculty Members

Academic Rank	***Instructor's name***	***Specialization***		***Special Requirements/skills (it applicable)***	***Number of the teaching staff***	
		General	***Special***		***staff***	***lecturer***

Professor	Dr. Hazim Yahya Mohammed Ali	Chemistry	Physical Chemistry		√	
Professor	Dr.Ayad Fahdil Mohammed	Chemistry	Physical Chemistry		√	
Professor	Dr. Mohmmed Hamid Saaid	Chemistry	Inorganic Chemistry		√	
Professor	Dr. Talat Tariq Kahlil	Chemistry	Bio Chemistry		√	
Professor	Dr. Sadiq Abed Al hussain	Chemistry	Organic Chemistry/Polymer		√	
Professor	Dr.Fuad Fahdil Mohammed	Chemistry	Analytical Chemistry		√	
Professor	Dr. Assyl Moshtaq Kahdim	Chemistry	Analytical Chemistry		√	
Assistant Professor	Dr. Noor Abed Al razaq	Chemistry	Organic Chemistry		√	
Assistant Professor	Dr. Suad Taha Saad	Chemistry	Inorganic Chemistry		√	
Assistant Professor	Dr. Ahmed Hassan Shintaf	Chemistry	Organic Chemistry		√	
Assistant Professor	Dr. Ali Talib Bader	Chemistry	Inorganic Chemistry		√	
Assistant Professor	Dr. Zainab Hashim Khudaier	Chemistry	Analytical Chemistry		√	
Assistant Professor	Dr. Ziyad Omran Musaa	Chemistry	Organic Chemistry		√	
Teacher	Shiren Hamza Abbas	Chemistry	Bio Chemistry		√	
Teacher	Mohammed Edan Hassan	Chemistry	Analytical Chemistry		√	
Teacher	Ali Mohsum Mohammed	Chemistry	Physical Chemistry		√	
assistant teacher	Rana Salah Norri	Chemistry	Bio Chemistry		√	

Professional Development

Mentoring new faculty members

Teaching, like any other art, can be acquired by practicing and following its methods and principles, provided that there is a sincere desire to practice the teaching profession, and the method in education means taking interconnected steps to reach a specific goal that you hope to achieve. Therefore, it must follow the basic principles of good teaching, which are:

1- Directing and guiding learners by creating educational situations that lead to desirable activities.

2- Providing an atmosphere of love, kindness and cooperation between the teacher and the learners and between the learners themselves through his love for his students without discrimination and not excessive feminization.

3- Adopting democratic leadership through the emotional relationship between the teacher and his students, which leads them to control based on mutual respect and creating a cooperative atmosphere between the students and between the teacher and his students.

Professional development for faculty members

1- Thinking strategy according to the student's ability (for example: if the student is able to learn the correct concept of management, he will acquire the skill of managing and organizing his personal life). And the high thinking skill strategy (for example, if the student wants to make a good decision, it is important that he thinks well before he makes the decision, and if he decides without thinking or if he cannot think well or if he cannot decide or perhaps he will not decide, this means He does not have high thinking skills.)

2- General and transferable skills (other skills related to employability and personal development).

3- Verbal communication.

4- Teamwork.

5- Analysis and investigation (collecting information systematically and scientifically to establish facts and principles for solving the problem).

12. Acceptance criterion

Central acceptance and parallel acceptance

13. The most important sources of information about the program

1- The website of the college and university.

https://csg.uobabylon.edu.iq/
https://csg.uobabylon.edu.iq/department/?cdid=4

https://csg.uobabylon.edu.iq/department/dep_lectures.aspx?cdid=4

2- University guide .https://systems.uobabylon.edu.iq /

3- The most important books and resources in the college library.

14. Program development plan

The Bologna Process was applied to the students of the first stage, and work is being done to apply it to the next stages, along with conducting workshops and seminars to familiarize faculty members with the requirements of the Bologna Process and how to work with it, and to discuss the negatives and obstacles and find solutions for them. The electronic system was applied in the education process.

Program skills Outline																			
				Required program learning outcomes															
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				Other skills related to employability and personal development			
				A_1	A_2	A_3	A_4	B_1	B_2	B_3	B_4	C_1	C_2	C_3	C_4	D_1	D_2	D_3	D_4
The first stage, Course (1), according to the Bologna system	UOBAB0603011	Qualitative Analytical chem.	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603012	Inorganic -1	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603013	Cytology	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603014	Laboratory safety	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBABb3	Human and Democracy	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB1102	Arabic Language	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Program skills Outline																			
				Required program learning outcomes															
Year/Level	*Course Code*	*Course Name*	*Basic or optional*	*Knowledge*				*Skills*				*Ethics*				*Other skills related to employability and personal development*			
				A_1	A_2	A_3	A_4	B_1	B_2	B_3	B_4	C_1	C_2	C_3	C_4	D_1	D_2	D_3	D_4
The first stage, Course (2), according to the Bologna system	UOBAB0603021	**Volumetric Analytical chem.**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603022	**Inorganic -2**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603023	**Mathematics**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603024	**Physics Sciences**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603025	**Computers Program**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOBAB0603026	**English Language**	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*