

**Ministry of Higher education and Scientific
Research**

UNIVERSITY OF ANBAR

**COLLEGE OF EDUCATION FOR PURE
SCIENCE**

Department of Chemistry



Department of Chemistry

CATALOUGE

2022/2023

Prepared by:

Vision

A scientific and educational department that seeks to lead in university education and scientific research locally and globally in a way that contributes to the service of society and achieve sustainable development

Mission

Excellence in the preparation of educators and researchers knowledgeable and practitioners and professional ethically committed by creating a stimulating environment and associate to the institutions of society

Programme Educational Objectives (CEOs)

Course Description

Courses are coded as follows:

1. Course code and number
2. Course title
3. Parenthesized numerals, e.g., (4-3-1-3), indicate, in order, the credit hours, the classroom hours (1 hour = 1 credit hour), tutorial hours (credit hour = 0), and the laboratory hours (3 hour = 1 credit hour).

Prerequisites, if any, are indicated at the course description. These have been established to assure an adequate and uniform background for students in advanced classes. Occasionally, students may feel they already have the appropriate background for an advanced course because of previous training, transfer credits, or Credit by examination.

Course Numbering System:

Course code = ...Chem.. (for example **CEM000** represents one of the course of department requirements in the Chemistry)

The CODE consists of specifically three to four english letters which represent the course code and three digits refers to the level as following:-

100-199: First level

200- 299: Second level

300-399: Third level

400-499: Fourth level

If the course is one of the college requirements then the first three or four letters on the course code represent the college code (for example **EPS000** is college requirement in the College of Education for Pure Sciences).

If the course is one of the university requirements then the first three or four letters on the course code represent the college university code (for example **UOA000** is university requirement in any college).

Total credit hours of courses according to the adopted levels

Courses		Levels				Total
		First	Second	Third	Fourth	
University	Compulsory	-	-	-	-	-
	Elective	7	4	2	6	19
Total		7	4	2	6	
College	Compulsory	7	6	4	4	21
	Elective	4	4	2	0	10
Total		11	10	6	4	31
Department	Compulsory	21	24	28	27	100
	Elective	0	2	4	6	12
Total		21	26	32	33	112
Total		39	40	40	43	162

Graduation Requirements

Requirements	Credit
University Requirements	19
College Requirements	31
Department Requirements	100
Elective Courses	12
Total	162

University Requirements: 13 credit hours

Course code	Course Title	Credit hours	Weekly hours	Prerequisite
UOA140	English Language-I	2	2	
UOA240	English Language-II	2	2	
UOA340	English Language-III	2	2	
UOA440	English Language-IV	2	2	
UOA135	Human Rights Democracy	2	2	
UOA137	Arabic Language	2	2	
UOA141	Computer science	2	2	
UOA241	Programing	2	2	
Total		16	16	

Course Code	Course Title	Credit hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab	
EPS101	Educational Psychology	2	2			
EPS102	Fundamentals of Education	2	2			
EPS202	General Psychology	2	2			
EPS201	Educational Administration	2	2			
EPS211	Methods of Scientific Research	2	2			
EPS311	Curricula and Methodology	2	2			
EPS312	Educational Counselling and Psychological Health	2	2			

EPS411	Measurement and Evaluation	2	2			
EPS412	Teaching Practicum	2	2			
EPS413	School Practicum	2		4		
EPS414	Classroom Observation	2	2			
Total		22	22			

College Requirements: credit hours

Prerequisite	Weekly hours			Credit hours	Course Title	Course Code
	Lab	Tut	Lec			
	2	-	2	3	Analytical chemistry 1	CHEM111
	2	-	2	3	Organic chemistry 1	CHEM121
	0	-	2	2	Inorganic chemistry 1	CHEM131
	2		2	2	Biology	BIO120
			1	1	Chemical safety and security	CHEM181
	2	-	2	3	Analytical chemistry 2	CHEM112
	2	-	2	3	Organic chemistry 2	CHEM122
	0	-	2	2	Inorganic chemistry 2	CHEM132
	2		2	2	Biology	BIO120
	2	-	2	3	Analytical chemistry 3	CHEM213
	2	-	2	3	Organic chemistry 3	CHEM223
	2	-	2	3	Inorganic chemistry 3	CHEM233
	2	-	2	3	Physical chemistry 1	CHEM241
	2	-	2	3	Analytical chemistry 4	CHEM214
	2	-	2	3	Organic chemistry 4	CHEM224

Department Requirements: credit hours

	2	-	2	3	Inorganic chemistry 4	CHEM234
	2	-	2	3	Physical chemistry 2	CHEM242
	2		2	3	Biochemistry 1	CHEM351
	2	-	2	3	Organic chemistry 5	CHEM325
	2	-	2	3	Inorganic chemistry 5	CHEM331
	2	-	2	3	Physical chemistry 3	CHEM341
	-	-	2	2	Industrial chemistry 1	CHEM361
	2		2	3	Biochemistry 2	CHEM352
	2	-	2	3	Organic chemistry 6	CHEM326
	2	-	2	3	Inorganic chemistry 6	CHEM332
	2	-	2	3	Physical chemistry 4	CHEM342
	-	-	2	2	Industrial chemistry 2	CHEM362
			2	2	Biochemistry 3	CHEM453
	2		2	3	Organic Identification 1	CHEM427
	2		2	3	Instrumental Analysis 1	CHEM415
			2	2	Physical chemistry (Quantum)	CHEM445
	2	-	2	3	Industrial chemistry 3	CHEM463
			2	2	Biochemistry 4	CHEM454
	2		2	3	Organic Identification 2	CHEM428
	2		2	3	Instrumental Analysis 2	CHEM416
			2	3	Physical chemistry (Quantum)	CHEM446
	2	-	2	3	Industrial chemistry 4	CHEM464
	58	-	73	99	المجموع	

Elective Courses

Course Code	Course Title	Credit hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab	
CHEM371	Pollution	2	2			
CHEM101	Philosophy of science	2	2			
SPE101	Sport	2	1		2	
CHEM211	Chemical safety and security	2	2			
CHEM204	Philosophy of science	2	2			
CHEM201	General health	2	2			
CHEM311	Hormones and glands	2	2			
CHEM312	Sulphur organic compounds	2	2			
CHEM203	Essential of statistical	2	2			
CHEM411	Vitamins	2	2			
CHEM412	Photo chemistry	2	2			
CHEM413	Green chemistry	2	2			
Total		24	23			

Total Credits =

Total In-Touch Hours =

FIRST LEVEL

2	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
CHEM111	Analytical chemistry 1	3	2		2	
CHEM121	Organic chemistry 1	3	2		2	
CHEM131	Inorganic chemistry 1	2	2		0	
CHEM181	Chemical security and safety	1	1			
CHEM112	Analytical chemistry 2	3	2		2	
CHEM122	Organic chemistry 2	3	2		2	
CHEM132	Inorganic chemistry 2	2	2		0	
	Biology	2	2		2	
EHS101	Educational Psychology	2	2		-	
EHS120	Fundamentals of Education	2	2		-	

UOA140	English language	2	2		-	
UOA135	Human rights and democracy	2	2		-	
UOA137	Arabic language	2	2		-	
UOA141	Computer science	2	1		2	
METH	Differentiation and integration 1	2	2		-	
METH	Differentiation and integration 2	2	2		-	
Total		35	30		12	

SECOND LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
CHEM213	Analytical chemistry 3	3	2		2	
CHEM223	Organic chemistry 3	3	2		2	
CHEM233	Inorganic chemistry 3	3	2		2	
CHEM241	Physical chemistry 1	3	2		2	
CHEM214	Analytical chemistry 4	3	2		2	
CHEM224	Organic chemistry 4	3	2		2	
CHEM234	Inorganic chemistry 4	3	2		2	
CHEM242	Physical chemistry 2	3	2		2	
EHS101	General physiology	2	2			
EHS120	Educational administration	2	2			
	Methods of Scientific Research	2	2			
UOA240	English language 2	2	2			
UOA241	Programming	2	1		2	
Total		34	25		18	

THIRD LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
CHEM351	Biochemistry 1	3	2		2	
CHEM325	Organic chemistry 5	3	2		2	
CHEM331	Inorganic chemistry 5	3	2		2	
CHEM341	Physical chemistry 3	3	2		2	
CHEM361	Industrial chemistry 1	2	2		-	
CHEM352	Biochemistry 2	3	2		2	
CHEM326	Organic chemistry 6	3	2		2	
CHEM332	Inorganic chemistry 6	3	2		2	
CHEM342	Physical chemistry 4	3	2		2	
CHEM362	Industrial chemistry 2	2	2		-	
EPS311	Curricula and Methodology	2	2			
EPS312	Educational Counselling and Psychological Health	2	2			
UOA340	English language 3	2	2			
Total		34	26		16	

FOURTH LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
CHEM453	Biochemistry 3	2	2			
CHEM427	Organic Identification 1	3	2		2	
CHEM415	Instrumental Analysis 1	3	2		2	
CHEM445	Physical chemistry (Quantum)	2	2			
CHEM463	Industrial chemistry 3	3	2	-	2	
CHEM454	Biochemistry 4	2	2			
CHEM428	Organic Identification 2	3	2		2	
CHEM416	Instrumental Analysis 2	3	2		2	
CHEM446	Physical chemistry (Quantum)	3	2			
CHEM464	Industrial chemistry 4	3	2	-	2	
EPS411	Measurement and Evaluation	2	2			
EPS412	Teaching Practicum	2	2			
EPS413	Classroom Observation	2		4		
CHEM491	Graduation Research Project	2	2			
Total		35	26	4	12	

Curriculum Map of the PEOs with courses according to learning outcomes

Programme Educational Objectives PEOs	1	2	3	4	5	6	7	8	9
FIRST LEVEL									
Course code	Course title								
SECOND LEVEL									
Course code	Course title								

THIRD LEVEL											
Course code	Course title										
FOURTH LEVEL											
Course code	Course title										
Elective Courses											
Course code	Course title										

UNIVERSITY REQUIREMENT COURSES

OR

College REQUIREMENT COURSES

OR

Department REQUIREMENT COURSES

Course code (for example MECE110) – **Course title** (for example English Language I)
(number of: Credit units-Lecture hours-Tutorial hours-lab hours (for example 3-3-0-0))

- **Course Definition**

- **Course Topics**

- **Course Description**

- **Course Outcomes**

- **Recommended Textbook(s):**

- **Prerequisites:**

- **Lab. Topics**