



Ministry of Higher Education and Scientific Research  
University of Anbar  
Education College for Women

Department of Chemistry



**Scientific Guide**

**2020-2021**

## Vision

### **Introduction:**

The Department of Chemistry was founded as one of the departments of the College of Education for Girls in 1990. The study period is four years to obtain a bachelor's degree in chemistry, and the first course graduated in 1993-1994. The idea of establishing the department was to be a base for building and refining students' talents, developing their capabilities in all fields of chemistry, and providing a research environment concerned with applying the latest technological developments to sustain national development and at the educational level. The department seeks to raise students in the spirit of perseverance, self-confidence, and continuing to acquire science according to sound scientific methods, including It serves the scientific process and keeps pace with ongoing developments.

### **1-1 Vision:**




The department aspires to be one of the internationally recognized and classified chemistry departments at the research and academic levels for excellence in student education, innovative scientific research, and community participation that contributes to economic growth, to keep pace with the requirements of the times and its rapid developments, to meet the huge challenges and requirements of the practical and academic reality, and to find solutions and alternatives in order to achieve The interest of the country.

### **1-2 The mission:**

The Chemistry Department seeks to build and refine students' talents and develop their capabilities in all fields of chemistry and provide a research environment concerned with applying the latest technological developments to sustain national development. On the educational level, the department seeks to raise students in the spirit of perseverance and self-confidence and to continue acquiring science according to sound scientific methods so that they have the ability to be creative. And innovation after graduation and keeping pace with scientific and technological development.



## Department of Chemistry

### Teaching staff in the Education College for Women/Department of Chemistry




1		<b>Dr. Riyadh Mohamed Jihad</b> <b>Ph.D. – Analytical Chemistry</b> <b>Head of the Department - Assistant Professor</b>
2		<b>Dr. Firas Fadel Ali</b> <b>PhD - Analytical Chemistry</b> <b>Assistant Dean for Scientific Affairs - Assistant Professor</b>
3		<b>Dr. Nabil Arif Tawfiq</b> <b>PhD - Inorganic Chemistry</b> <b>Department Rapporteur – Teacher</b>
4		<b>Dr. Eid Saleh Muhammad</b> <b>PhD - Inorganic Chemistry</b> <b>Teaching - Assistant Professor</b>

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5		<b>Dr. Saada Abdul Abdullah</b> <b>PhD - Physical Chemistry</b> <b>Teaching - Assistant Professor</b>
6		<b>Dr. Mohamed Adi Ezzat</b> <b>Ph.D. - Biophysical Chemistry</b> <b>Teaching - Assistant Professor</b>
7		Dr. Abdul Sattar Ali Hussein PhD - Mathematics - Approximation of functions Teaching - teacher
8		<b>- Teacher Khaled Abdel Jassim</b> <b>Master - Mathematics - Dali Analysis</b> <b>Teaching-teacher</b>
9		<b>Dr. Bushra Turki Mahdi</b> <b>PhD - Organic Chemistry</b> <b>Teaching-teacher</b>

10		<p><b>Dr. Sahar Amer Ahmed</b>  <b>PhD - Biochemistry</b>  <b>Teaching-teacher</b></p>
11		<p><b>Dr. Rasha Azzam Abdullah</b>  <b>PhD - Organic Chemistry</b>  <b>Teaching-teacher</b></p>
12		<p><b>Dr. Eman Mohammad Khalaf</b>  <b>PhD - Physical Chemistry</b>  <b>Teaching – teacher</b></p>
13		<p><b>Mrs. Alaa Abdel Moneim Abdel Majeed</b>  <b>Master's degree - Biochemistry</b>  <b>Teaching-teacher</b></p>

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14			Mrs. Iman Hossam Mohamed Master's degree - Analytical Chemistry Teaching-teacher
15			Mrs. Dina Hamid Zidane Master's degree - Inorganic Chemistry Teaching assistant teacher
16			Mrs. Nibras Youssef Abdullah Master's degree in industrial chemistry Teaching - assistant teacher
17			Mrs. Nibras Bassam Muhammad Master's degree in physical chemistry Teaching - assistant teacher
18			Mrs. Raghad Khaled Khamas Master's degree in biochemistry Teaching - assistant teacher
19			Mrs. Maysoon Ibrahim Ahmed Master's degree in industrial chemistry Teaching - assistant teacher

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20		Mrs. Bida Hussein Ayada Master's degree - Chemistry Teaching - assistant teacher
21		Mrs. Farah Samir Selim Master's degree - Chemistry Teaching - assistant teacher
22		Mrs. Nour Fakhri Muhammad Master's degree - Chemistry Teaching - assistant teacher
23		Mrs. Rahma Salem Abdullah Master's degree - Chemistry Teaching - assistant teaching

**Courses – Department’s specialized requirements and codes**

<b>Stage</b>	<b>Names of academic subjects</b>	<b>Code</b>
<b>First</b>	<b>Arabic language</b>	<b>EWC 1101</b>
<b>First</b>	<b>English language</b>	<b>EWC 1102</b>
<b>First</b>	<b>Educational Psychology</b>	<b>EWC 2101</b>
<b>First</b>	<b>Human rights</b>	<b>EWC 2102</b>
<b>First</b>	<b>Foundations of education</b>	<b>EWC 2103</b>
<b>First</b>	<b>Biology</b>	<b>EWC 3101</b>
<b>First</b>	<b>Computer-1</b>	<b>EWC 3102</b>
<b>First</b>	<b>Mathematics -1</b>	<b>EWC 3103</b>
<b>First</b>	<b>Analytical-1</b>	<b>EWC 3104</b>
<b>First</b>	<b>Analytical- 2</b>	<b>EWC 3105</b>
<b>First</b>	<b>Organic-1</b>	<b>EWC 3106</b>
<b>First</b>	<b>Organic- 2</b>	<b>EWC 3107</b>
<b>First</b>	<b>Inorganic-1</b>	<b>EWC 3108</b>
<b>First</b>	<b>Inorganic-2</b>	<b>EWC 3109</b>
<b>Second</b>	<b>Developmental psychology</b>	<b>EWC 2201</b>
<b>Second</b>	<b>Freedoms</b>	<b>EWC 2202</b>
<b>Second</b>	<b>Educational administration</b>	<b>EWC 2203</b>
<b>Second</b>	<b>Mathematic-2</b>	<b>EWC 3201</b>
<b>Second</b>	<b>Physics</b>	<b>EWC 3202</b>
<b>Second</b>	<b>Teaching research</b>	<b>EWC 3203</b>
<b>Second</b>	<b>Computer-2</b>	<b>EWC 3204</b>
<b>Second</b>	<b>Organic-3</b>	<b>EWC 3205</b>



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<b>Second</b>	<b>Inorganic-3</b>	<b>EWC 3206</b>
<b>Second</b>	<b>Physical -1</b>	<b>EWC 3207</b>
<b>Second</b>	<b>Analytical –3</b>	<b>EWC 3208</b>
<b>Third</b>	<b>Guidance and psychological health</b>	<b>EWC 2301</b>
<b>Third</b>	<b>Teaching curricula and methods</b>	<b>EWC 2301</b>
<b>Third</b>	<b>Pollution</b>	<b>EWC 3301</b>
<b>Third</b>	<b>Organic-4</b>	<b>EWC 3302</b>
<b>Third</b>	<b>Organic-5</b>	<b>EWC 3303</b>
<b>Third</b>	<b>Industry-1</b>	<b>EWC 3304</b>
<b>Third</b>	<b>Physical -2</b>	<b>EWC 3305</b>
<b>Third</b>	<b>Physical-3</b>	<b>EWC 3306</b>
<b>Third</b>	<b>Inorganic-4</b>	<b>EWC 3307</b>
<b>Third</b>	<b>Biochemistry-1</b>	<b>EWC 3308</b>
<b>Fourth</b>	<b>Measurement and evaluation</b>	<b>EWC 2401</b>
<b>Fourth</b>	<b>Teaching applications</b>	<b>EWC 2402</b>
<b>Fourth</b>	<b>Optional</b>	<b>EWC 3401</b>
<b>Fourth</b>	<b>Graduation research</b>	<b>EWC 3402</b>
<b>Fourth</b>	<b>Biochemistry- 2</b>	<b>EWC 3403</b>
<b>Fourth</b>	<b>Biochemistry-3</b>	<b>EWC 3404</b>
<b>Fourth</b>	<b>Quantum and spectroscopy</b>	<b>EWC 3405</b>
<b>Fourth</b>	<b>Organic diagnosis</b>	<b>EWC 3406</b>
<b>Fourth</b>	<b>Automated analysis</b>	<b>EWC 3407</b>
<b>Fourth</b>	<b>Industrial-2</b>	<b>EWC 3408</b>

Curriculum for the Department of Chemistry

The First stage

Second Semester					First Semester					
Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	
3,5	5	3	2	Analytical 2- Chemistry	3,5	5	3	2	Analytical Chemistry-1	1
3,5	5	3	2	Organic Chemistry-2	3,5	5	3	2	Organic Chemistry-1	2
2	2	-	2	Inorganic Chemistry-2	2	2	-	2	Inorganic Chemistry-1	3
3	4	2	2	Biology	3	4	2	2	Computer	4
2	2	-	2	Mathematics	2	2	-	2	Educational Psychology	5
2	2	-	2	Foundations of education	2	2	-	2	Arabic language	6
2	2	-	2	English language	2	2	-	2	human rights	7
<b>18</b>	<b>22</b>	<b>8</b>	<b>14</b>	<b>Total</b>	<b>18</b>	<b>22</b>	<b>8</b>	<b>14</b>	<b>Total</b>	

Curriculum for the Department of Chemistry

The second stage

Second Semester					First Semester					
Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	N
5,5	7	3	4	Analytical Chemistry	5,5	7	3	4	Inorganic Chemistry	1
5,5	7	3	4	Physical Chemistry	5,5	7	3	4	Organic Chemistry	2
2	2	-	2	Mathematics	3	4	2	2	Computer	3
2	2	-	2	Educational administration	2	2	-	2	Developmental psychology	4
2	2		2	Freedoms	2	2	-	2	Teaching research	5
					2	2	-	2	Physics	6
<b>17</b>	<b>20</b>	<b>6</b>	<b>14</b>	<b>Total</b>	<b>20</b>	<b>24</b>	<b>8</b>	<b>16</b>	<b>Total</b>	

Curriculum for the Department of Chemistry

The Third stage

Second Cours						First Semester					
Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	N	Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	N
3,5	5	3	2	(2) Organic Chemistry	1	3,5	5	3	2	Organic Chemistry (1)	1
3,5	5	3	2	Physical Chemistry (2)	2	3,5	5	3	2	Physical Chemistry(1)	2
5,5	7	3	4	Industrial Chemistry	3	5,5	7	3	4	Coordination chemistry	3
2,5	3	1	2	Pollution	4	4	4	-	4	Biochemistry	4
2	2	-	2	Guidance and psychological health	5	2	2	-	2	Teaching curricula and methods	5
<b>17</b>	<b>22</b>	<b>10</b>	<b>12</b>	<b>Total</b>		<b>18,5</b>	<b>23</b>	<b>9</b>	<b>14</b>	<b>Total</b>	

Curriculum for the Department of Chemistry

The Fourth stage

Second Semester					First Semester					
Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	Units	Totals of hours	Hours of practical	Hours of theoretical	Subject	N
3,5	5	3	2	Biochemistry (2)	3,5	5	3	2	Biochemistry (1)	1
4	4	-	4	Industrial Chemistry	5,5	7	3	4	Automated analysis	2
2	2	-	2	Optional	3,5	5	3	2	Organic diagnosis	3
2	2	-	2	Quantum and spectroscopy	2	2	-	2	Measurement and evaluation	4
3	4	2	2	Teaching applications	1,5	3	3	-	Graduation research	5
					2	4	4	-	Educational	6
14,5	17	5	12	Total	18	26	16	10	Total	

The total number of units = 141 units

The total number of hours = 176 hours.

*Courses – Department's specialized requirements*

**Course description:**

**Inorganic.1 :EWC 3108**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

**Inorganic. 2: EWC 3109**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

**Organic. 1 : EWC 3106**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

**Organic. 2: EWC 3107**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmed specification.

### **Analytical 1 :EWC 3104**

This course specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmed specification. In addition, the course aims to develop depth and breadth of chemistry knowledge, and to develop a wide range of laboratory and analytical skills, enhanced problem solving, research and communication skills. In addition, understanding the volumetric analysis and instrumental analysis.

### **Organic 3: EWC 3205**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

### **Inorganic 3: EWC 3206**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

### **Physical 1: EWC 3207**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

### **Industry 1: EWC 3304**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

### **Physical 2: EWC 3305**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

### **Physical 3: EWC 3306**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

### **Inorganic 4: EWC 3307**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

### **Biochemistry 1: EWC 3308**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmed specification. In addition, this course aims to knowledge and understanding and familiarize the student with the concept of biochemistry. The student will know how the body can made compounds and can get to energy and understand the methods of the energy source.



### **Biochemistry 3: EWC 3404**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmed specification.

### **Organic diagnosis: EWC 3406**

In general, this Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmed specification. In addition, the aim of this course in understanding the meaning of the organic identification by using Spectroscopic diagnosis, what is the Spectroscopic diagnosis?

Spectroscopic diagnosis: is knowing the molecular and structural formula of an unknown organic compound using spectroscopic devices. In this method, organic compounds can be diagnosed in a short period of time and with precise and accurate results.

### **Automated analysis: EWC 3407**

This programmer Specification provides a concise summary of the main features of the programmed and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programmer. The course aims in preparing graduates with high theoretical and practical skills to meet the needs of education in schools and community service in the field of teaching. Providing graduates with practical skills for teaching in accordance with the scientific developments taking place in the methodological vocabulary and modern teaching methods following up on the teaching of chemistry.

### **Industrial 2: EWC 3408**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

### **Mathematics -1: EWC 3103**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

### **Physics : EWC 3202**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.