**Dept. of Chemistry**
**College of Science**
**University of Mosul**

**Republic of IRAQ**
**Ministry of Higher Education and Scientific Research**

# Academic programs

# Definition

This academic program definition provides a necessary summary of the most important characteristics of the program and the learning outcomes that the student achieves by demonstrating whether he has made the most of the available opportunities and is accompanied by a description of everything prohibited within the program:

| | |
|---|---|
| **1-** Educational institution | University of Mosul / College of Science |
| **2-** University department/center | Chemistry |
| **3-** Name of the academic program | ABET |
| **4-** Name of the final certificate | B.Sc. in Chemistry |
| **5-** The academic system | Courses |
| **6-** Accredited accreditation program | ABET |
| **7-** Other external influences | |
| **8-** Date the description was prepared | 20/7/2022 |
| **9-** Objectives of the academic program | Reaching the national classification |

**10-** Required educational outcomes and teaching, learning and evaluation methods:

Success in academic subjects for the four years + graduation research + summer training

A- Knowledge and understanding

1- Enabling the student to understand the subject of chemistry

2- The student should understand the nature of matter and its chemical composition

3- That the student understands the mechanisms of chemical reactions

B- Subject-specific skills

1- Enables the student to teach chemistry

2- Enables the student to work in laboratories and health institutions

3- Enables the student to work in research institutions

4- Enables the student to work in the chemical and petroleum industries

C- Thinking skills

1- Discussions

2- Duties

3- Laboratory reports

4- Scientific reports

**11-** Program structure

a. Preliminary study

| Stage | n | Subject | Academic system | Theor. hours | Pract. hours | Code |
|---|---|---|---|---|---|---|
| 1st Class | 1 | Inorganic | 1st+2nd Course | 3 | 3 | SCCH1-F1011 |
| | 2 | Analytical | 1st +2nd Course | 3 | 3 | SCCH1-F1021 |
| | 3 | Mathematics | 1st +2nd Course | 3 | - | SCCH1-F1031 |
| | 4 | Physics | 1st Course | 2 | 2 | SCCH1-F1051 |
| | 5 | Programming | 1st +2nd Course | - | 2 | SCCH1-F1041 |
| | 6 | Geology | 1st Course | 2 | 2 | SCCH1-F1061 |
| | 7 | Physical characteristics | 2nd Course | 3 | - | SCCH1-F1081 |
| | 8 | Organic | 2nd Course | 3 | - | SCCH1-F1091 |
| | 9 | Culture | 1st +2nd Course | 1 | - | SCCH1-F1101 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2nd Class | 1 | Inorganic | 1st +2nd Course | **2** | **3** | **SCCH1-F2011** |
| | 2 | Analytical | 1st +2nd Course | **2** | **3** | **SCCH1-F2031** |
| | 3 | Physical | 1st +2nd Course | **3** | **3** | **SCCH1-F2041** |
| | 4 | Organic | 1st +2nd Course | **3** | **3** | **SCCH1-F2021** |
| | 5 | Mathematics | 1st +2nd Course | **3** | **-** | **SCCH1-F2061** |
| | 6 | Programming | 1st +2nd Course | **-** | **2** | **SCCH1-F2071** |
| | 7 | Ecology | 1st Course | **2** | **-** | **SCCH1-F2051** |
| | 8 | Culture | 1st +2nd Course | **1** | **-** | **SCCH1-F2081** |
| 3rd Class | 1 | Inorganic | 1st +2nd Course | **2** | **3** | **SCCH1-F2081** |
| | 2 | Physical | 1st +2nd Course | **3** | **3** | **SCCH1-F3011** |
| | 3 | Biochemistry | 1st +2nd Course | **2** | **3** | **SCCH1-F3021** |
| | 4 | Organic | 1st +2nd Course | **3** | **3** | **SCCH1-F3031** |
| | 5 | industrial | 1st +2nd Course | **2** | **-** | **SCCH1-F3041** |
| | 6 | Mechanism<br>Colloids<br>Phys. Organic<br>Organometallic | Elective<br>1st Course | **2** | **-** | **SCCH1-F3061**<br>**SCCH1-F3071**<br>**SCCH1-F3081**<br>**SCCH1-F3091** |
| 4th Class | 1 | Physical | 1st +2nd Course | **3** | **-** | **SCCH1-F4011** |
| | 2 | Instrumentation & Separation | 1st +2nd Course | **3** | **3** | **SCCH1-F4051** |
| | 3 | Petroleum | 1st +2nd Course | **2** | **3** | **SCCH1-F4041** |
| | 4 | Polymers | 1st +2nd Course | **2** | **3** | **SCCH1-F4031** |
| | 5 | Identification | 1st +2nd Course | **1** | **3** | **SCCH1-F4071** |
| | 6 | Biochemistry | 1st +2nd Course | **2** | **3** | **SCCH1-F4021** |
| | 7 | Project | 1st +2nd Course | **1** | **1** | **SCCH1-F4061** |
| | 8 | Bioinorganic<br>Biophysical<br>Fused ring<br>Radiochemistry<br>Clinical Chem. | Elective<br>2nd Course | **2** | - | **SCCH1-F4081**<br>**SCCH1-F4091**<br>**SCCH1-F4101**<br>**SCCH1-F4111**<br>**F4121-SCCH1** |