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

**University of Babylon,**
**College of Science**
**Department of Chemistry**
**Study year 2024-2025**

# Academic Program and Course Description Guide

**Bologna Process**
**2024-2025**

# Introduction:

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

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

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

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

## Concepts and terminology:

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

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

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

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

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

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

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

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

# Academic Program Description Form

**University Name: university of Babylon**

**Faculty/Institute: collage of science**

**Scientific Department: chemistry department**

**Academic or Professional Program Name: chemistry**

**Final Certificate Name: .. B.Sc., M.Sc., and ph.D Degrees**

Academic System: The academic system of the study is semester

**Description Preparation Date:**

**File Completion Date:**

Signature:

Head of Department Name:

Prof. Dr. Abbas Jasim Atiyah

Date:14-11-2024

Signature: Ahmed S.

Scientific Associate Name:

Prof. Dr. Ahmed Sadoon Witwit

Date: 14-11-2024

**The file is checked by:**

**Department of Quality Assurance and University Performance**

**Director of the Quality Assurance and University Performance Department:**

**Prof. Dr. Hyder Mohammad A-Algeleel**

**Date:**

**Signature:**

**Approval of the Dean**

## 1. Program Vision

**The chemistry academic staff of the Natural and Behavioral Sciences Division at university of Babylon, college of science) University believe that students come to understand the discipline of chemistry through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by chemist to make observations, develop insights and create theories about chemistry sciences**

## 2. Program Mission

**The chemistry academic staff pursues a multifaceted charge at (university of Babylon, college of science). The Program seeks to provide all chemistry students with fundamental knowledge of chemistry, as well as a deeper understanding of a selected focus area within the chemical l sciences. The curriculum and advising have been designed to prepare graduates for their professional future, whether they choose to work as field chemistry specializing in different fields of chemical sciences. The chemistry program also provides the necessary fundamental knowledge of the chemical sciences**

## 3. Program Objectives

**The main goal of this program is to enable all its graduate to have basic principles of chemistry science including theoretical and practical concepts. the proposed graduate should have reasonable qualification in all chemistry branches including: biochemistry, organic, inorganic, physical, analytical and industrial chemistry.**

## 4. Program Accreditation

Not yet

## 5. Other external influences

Yes, Minstry of higher education and scientific research in IRAQ(MOHER),
Private funding that is the income of evening study and parallel govermental morning study for under and pastgraduated study

## 6. Program Structure

| Program Structure | Number of Courses | Credit hours | Percentage | Reviews* |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| University requirements | 8 | 13 | 0.089654 | |
| College requirements | 3 | 14 | 0.09655 | |
| Department requirements | 43 | 108 | 0.74482 | |
| Summer training | non | | | |
| others | non | | | |

## 7. Program Description

| year | Course code | Course name | Credit Hours | |
|---|---|---|---|---|
| | | | theoretical | practical |
| 1st year | CHEM1101 | Qualitative Analytical Chem. | 3 | 2 |
| | CHEM1102 | Inorganic1 | 3 | |
| | CHEM1103 | cytology | 2 | 2 |
| | CHEM1104 | Derivatives and integration | 2 | |
| | UOBAB1104 | Democracy and human rights | 2 | |
| | UOBAB1102 | Arabic Language | 2 | |
| | CHEM1201 | Volumetric Analytical Chem. | 3 | 2 |
| | CHEM1202 | Inorganic2 | 2 | |
| | CHEM1203 | physics | 2 | 2 |
| | CHEM1204 | safety and chemical security | 2 | |
| | UOBABb4 | computer 1 | 1 | 2 |
| | UOBABb1101 | English language 1 | 2 | |
| 2nd year | CHEM2301 | Gravitymetric analysis | 2 | 2 |
| | CHEM2302 | Chemistry of represented elements 1 | 2 | 2 |
| | CHEM2303 | Thermodynamics1 | 3 | 2 |
| | CHEM2304 | Organic Chemistry 1 | 3 | 2 |
| | CHEM2305 | Differential equations | 2 | |
| | UOBAB0502036 | Computer 2 | 1 | 2 |
| | CHEM2401 | Separation Methods | 2 | 2 |
| | CHEM2402 | Chemistry of represented elements 2 | 2 | 2 |
| | CHEM2403 | Thermodynamics2 | 3 | 2 |
| | CHEM2404 | Organic Chemistry 2 | 3 | 2 |
| | UOBAB2301 | Baath party crimes | 2 | |
| | UOBAB2302 | English Language 2 | 2 | |
| | UOBAB2001 | Arabic Language 2 | 2 | |

| 8. Expected learning outcomes of the program | |
|---|---|
| **Knowledge** | |
| Learning Outcomes 1 | Learning Outcomes Statement 1 |
| **Skills** | |
| -learning basic science in chemistry<br>-synthesis of basic compounds<br>- understanding safety and chemical security in chemical labs<br>- | -student learning basic works in chemical labs<br>-preparation of some chemical and polymeric compounds<br>-designing of simple chemical reactors |
| | |
| **Ethics** | |
| Student would learn ethics behavior | -learning scientific honesty |
| | |

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

1-classroom,
2-laboratory
3-electronic lectures

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

**1-monthly and daily Examination**
**2-Reports and home work**
**3-Projects Design**
**4-Feedback Learning**
**5--E-Learning using Moodle**

## 11. Faculty

### Faculty Members

| Academic Rank | Specialization | | Special Requirements/Skills (if applicable) | | Number of the teaching staff | |
|---|---|---|---|---|---|---|
| | General | Special | | | Staff | Lecturer |
| professor | 12 | 12 | | | staff | |
| Assist. Prof. | 15 | 15 | | | staff | |
| Lecturer | 13 | 13 | | | staff | |
| Assist. Lecturer | 7 | 7 | | | staff | |

### Professional Development

#### Mentoring new faculty members

This can be achieved via participating of staff member in different courses and workshops to improve their abilities in teaching and scientific research.

#### Professional development of faculty members

Conducting contineous programms regarding with teaching stadd development via participitating in modern teaching and learning methods as well as new electronic learning methods.

## 12. Acceptance Criterion

Our policy depends mainly on the central accepatance that is conducted by MOHER in Iraq, it main condition, the qualified student should pass general secondary national examination with high degree, more than 75%.

## 13. The most important sources of information about the program

- Electronic website of Babylon University,
- -electronic website of college of science
- -electronic website of chemistry department

## 14. Program Development Plan

-Improving teaching and learning abilities of staff members,
-Development sources of learning,
-Development both of classwork and lab work,
-Development infrastructures of the department

| Program Skills Outline | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Required program Learning outcomes | | | | | | | | | | | |
| Year/Level | Course Code | CourseName | Basic or optional | Knowledge | | | | Skills | | | | Ethics | | | |
| | | | | A1 | A2 | A3 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 |
| | | | | | | | | | | | | | | | |
| First class | CHEM1101 | Quantitative analytical chem. | basic | * | * | * | * | * | * | * | * | * | * | * | * |
| | CHEM1102 | Inorganic 1 | basic | * | * | * | | * | * | | | * | * | * | |
| | CHEM1103 | cytology | basic | * | * | * | * | * | * | | | * | * | * | * |
| | CHEM1104 | Differnation and integration | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBAB1104 | Democracy and human rights | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBAB1102 | Arabic language 1 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | CHEM1201 | Volumetric analytical chem. | basic | * | * | * | * | * | * | * | * | * | * | * | |
| | CHEM1202 | Inorganic 2 | basic | * | * | * | * | * | * | * | * | * | * | * | |
| | CHEM1203 | physics | basic | * | * | * | | * | * | | | * | * | * | |
| | CHEM1204 | Safety and chemical security | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBABb4 | Computer 1 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBABb1101 | English language 1 | basic | * | * | * | * | * | * | | | * | * | * | * |
| Second class | CHEM2301 | Gravitymetric analysis | basic | * | * | * | * | * | * | * | | * | * | * | * |
| | CHEM2302 | Chemistry of represented elements 1 | basic | * | * | * | * | * | * | * | * | * | * | * | * |
| | CHEM2303 | Thermodynamics1 | basic | * | * | * | * | * | * | | | * | * | * | * |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CHEM2304 | Organic Chemistry 1 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | CHEM2305 | Differential equations | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBAB0502036 | Computer 2 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | CHEM2401 | Separation Methods | basic | * | * | * | * | * | * | * | | * | * | * | * |
| | CHEM2402 | Chemistry of represented elements 2 | basic | * | * | * | * | * | * | * | * | * | * | * | * |
| | CHEM2403 | Thermodynamics2 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | CHEM2404 | Organic Chemistry 2 | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBAB2301 | Baath party crimes | basic | * | * | * | * | * | * | | | * | * | * | * |
| | UOBAB2302 | English Language 2 | basic | * | * | * | * | * | * | | | * | * | * | * |

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

# Course Description Form

| 1. Course Name: |
|---|
| Qualitative Analytical Chem |
| 2. Course Code: |
| CHEM1101 |
| 3. Semester / Year: |
| 1st course, 2023-2024 |
| 4. Description Preparation Date: |
| 1-11-2023 |
| 5. Available Attendance Forms: |
| classroom, lab, electronic attendance |
| 6. Number of Credit Hours (Total) / Number of Units (Total): |
| (175/750) and (7/30) |
| 7. Course administrator's name (mention all, if more than one name) |
| Prof. Dr. Ahmed Sadoon Abbas<br>Lect. Nahla Salaman Saddam |

8. Course Objectives

| | |
|---|---|
| **Course Objectives** | Study main concept of analytical chemistry,<br>-preparation of standard solutions,<br>- conducting chemical labs<br>-analysis of some basic chemical compounds |

9. Teaching and Learning Strategies

| | |
|---|---|
| **Strategy** | -classroom,<br>-lab,<br>-homework's,<br>-reports |

10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| **Week 1** | | **General introduction to chemical labs** | **General introduction to chemical labs** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-2** | | **General introduction** | **General introduction** | **Theory and lab** | **Daily and monthly evaluation** |
| **week-3** | | **Safety and security in lab.** | **Safety and security in** | **Theory and** | **Daily and** |

| | | | | |
|---|---|---|---|---|
| | | **lab.** | **lab** | **monthly evaluation** |
| **Week-4** | **Identification of one group one ions (part1)** | **Identification of one group one ions (part1)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-5** | **Identification of one group one ions (part2)** | **Identification of one group one ions (part2)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week- 6** | **Identification of one group ions (part3)** | **Identification of one group ions (part3)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-7** | **Identification of one group ions (unknown )** | **Identification of one group ions (unknown )** | **Theory and lab** | **Daily and monthly evaluation** |
| **week-8** | **Identification of group two (part1)** | **Identification of group two (part1)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-9** | **Identification of group two ions (part2)** | **Identification of group two ions (part2)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-10** | **Identification of group two ions (unkown)** | **Identification of group two ions (unkown)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week- 11** | **Identification of group three ions (part1)** | **Identification of group three ions (part1)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-12** | **Identification of group three ions (part2)** | **Identification of group three ions (part2)** | **Theory and lab** | **Daily and monthly evaluation** |
| **week-13** | **Identification of group three ions (part3)** | **Identification of group three ions (part3)** | **Theory and lab** | **Daily and monthly evaluation** |
| **Week-14** | **Unknown** | **Unknown** | **Theory and lab** | **Daily and monthly evaluation** |
| **week-15** | **Analytical calculations** | **Analytical calculations** | **Theory and lab** | **Daily and monthly evaluation** |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

| 11. Course Evaluation | |
|---|---|
| Daily evaluation, monthly evaluation, reports, homework | |
| 12. Learning and Teaching Resources | |
| Required textbooks (curricular books, if any) | |
| Main references (sources) | |
| Recommended books and references (scientific journals, reports…) | |
| Electronic References, Websites | |

**Main references:**

Fundamentals Analytical chemistry by Donnaled Skkoge 2009.
Principle in analytical chemistry,
Some related scientific electronic websites