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

Academic Program and Course Description Guide Pharmacuetical Chemistry

2024

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: **University of Kirkuk**

Faculty/Institute: **College of Pharmacy**

Scientific Department: **Pharmaceutical Chemistry**

Description Preparation Date: **2023/2024**

File Completion Date: **26/3/2024**

Signature:
Head of Department:
Asst. Prof. Loqman Edrees Alrawi
Date:**4/4/2024**

Signature:
Scientific Associate:
Muhsin Hamed Edham
Date:**4/4/2024**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Asst. Lect. Sarah Mohammed Najeeb

Date: **4/4/2024**

Signature:

Approval of the Dean

1. Program Vision

Achieve global standards in teaching chemistry and pharmaceutical chemistry as well as scientific research through teaching the international syllabus to reach the level of global universities. Also, enrich the graduates with the theoretical and practical information and basis in the field of pharmaceutical chemistry to graduate competent pharmacist capable of providing pharmaceutical and health services to patients and to provide outstanding researches in pharmaceutical chemistry.

2. Program Mission

Raise the profession or pharmacy to its highest level in Iraq according to the needs of the country in all the pharmacy fields whether in educations, scientific researches, pharmaceutical care and/or drugs industry, and for the graduates to be leaders and competent in their professional work.

3. Program Objectives

Teach the students chemistry in all its branches, including (analytical, organic, inorganic, physical, biochemistry and pharmaceutical chemistry) for bachelor's degree student by faculty members through accredited teaching plan. Prepare the student to practice pharmacy profession and establish the basic pharmaceutical chemistry science.

4. Program Accreditation

Non

5. Other external influences

The other external influences are practical part, desk research, non-classroom activities, volunteer activities and training courses at hospitals, pharmaceutical factories and private pharmacies.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements		10		
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First year / 1st course		Analytical Chemistry	3	2
First Year / 2nd course		Organic Pharmaceutical Chemistry I	3	2
Second Year / First Course		Organic Pharmaceutical Chemistry II	3	2
Second Year / Second Course		Organic Pharmaceutical Chemistry III	3	2
Third Year / First Course		Inorganic Pharmaceutical Chemistry	3	2
Third Year / 2nd Course		Organic Pharmaceutical Chemistry I	3	2

Fourth Year / 1st Course		**Organic Pharmaceutical Chemistry II**	**3**	**2**
Fourth Year / 2nd Course		**Organic Pharmaceutical Chemistry III**	**3**	**2**
Fifth Year / First Course		**Organic Pharmaceutical Chemistry IV**	**3**	–
Fifth Year / 2nd Course		**Advance Pharmaceutical Analysis**	**3**	**2**

8. **Expected learning outcomes of the program**	
Knowledge	
Learning Outcome 1	1. Correctly handling tubes and chemicals, giving a great value of its presence and storage. 2. Correct operation of lab devices. 3. Understand the appropriate and advanced techniques to prepare drugs and chemicals. 4. Fully understand the mechanism and work of drugs. 5. Learn chemical reactions methods and ways to implement them. 6. Understand the biological effectiveness and the relevant affecting factors like dissolving, stability, side-effects and drugs work.
Skills	
Learning Outcomes 2	1. Gain skills of recognizing and evaluating chemical compounds. 2. Gain skills of using different methods to prepare and produce chemical compounds. 3. Gain skills of scientific-report writing.
Learning Outcomes 3	1. Qualifying skills for employment and research work in all other available pharmaceutical fields.

	2. Gain leadership skills. 3. Gain scientific lecturing skills. 4. Gain skills of computers.
Ethics	
Learning Outcomes 4	1. Prepare various drugs and chemical compounds. 2. Recognize drugs and their derivatives. 3. Conduct lab analysis. 4. The use of modern methods of using slides in lectures.
Learning Outcomes 5	Self–development, increase of knowledge, scientific discussions, and cultural activities.

9. Teaching and Learning Strategies

Visual, oral, written and practical.

10. Evaluation methods

Oral, paper, and practical exams along with practical reports and researches.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Asst. prof. Loqman Edrees Mahmood	Chemistry	Industrial Chemistry			/	
Asst. Prof. Omeed Muhsin Hassan	Pharmacy	Pharmaceutical Chemisty			/	
Asst. Lect. Kamal Yaseen	Chemistry	Organic Chemistry			/	

Asst. Lect. Zainab Adnan	Chemistry	Organic Chemistry			/	

Professional Development
Mentoring new faculty members
Benefit from global universities in professional, academic and personal development, increase of knowledge, scientific discussions, cultural activities, conduct mutual researches, participate in modern teaching methods, and evaluate students by using advance technology and software, using modern means of teaching aids such as smart screens and other teaching aids.
Professional development of faculty members
Benefit from global universities in professional, academic and personal development, increase of knowledge, scientific discussions, cultural activities, conduct mutual researches, participate in modern teaching methods, and evaluate students by using advance technology and software, using modern means of teaching aids such as smart screens and other teaching aids.

12. Acceptance Criterion

The students are accepted in University of Kirkuk – College of Pharmacy within the central acceptance of Ministry of Higher Education and Scientific Research at a specific GPA and the top students of medical institution and the top 1 student at the first year of science, Veterinary Medicine colleges.

13. The most important sources of information about the program

- Fundamentals of Analytical Chemistry by Stook and West
- Organic Chemistry by Robert T. Morrison and Robert N. Boyd
- Organic Chemistry by McCurry; latest available edition
- An introduction to the chemistry of heterocyclic compound by Acheson, R. M. latest edition available.
- Inorganic Medicinal and Pharmaceutical Chemistry by Block, Roche Soine and Wilson, latest edition available

- Wilson and Gisvold Textbook of Organic medicinal and Pharmaceutical chemistry, latest available edition
- Spectrometric Identification of Organic Compounds by Silverstein, Bassler and Morrill
- Applications of absorption spectroscopy of organic compounds by Dyer JR.
- Solid Internet sources
- Updated subject accordingly.

14. Program Development Plan

- Develop performance and increase of competence.
- Provide additional advance scientific devices to serve the advance teaching and the required periodic maintenance.
- Continuous training to raise the competence and qualifications to be fit with the scientific development to achieve the maximum benefits.
- Graduate prepared pharmacist in line with the work needs in the market and governmental sectors.
- Enhance team-work spirit.
- Develop academics to become competent pedagogics.
- Acceptance of multi-nationalities students to enhance cultural exchange.
- Conduct scientific agreements with drugs corporates and national and international institutions to exchange experiences and conduct mutual researches for different pharmacy specialties.