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

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) 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

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: Tikrit University

Faculty/Institute: College of Pharmacy

Scientific Department: Pharmacognosy and medicinal plant
Academic or Professional Program Name: Bachelor in Pharmacy Sciences
Final Certificate Name: Bachelor in Pharmacy Sciences
Academic System: Semester (courses)
Description Preparation Date: 1/ 3/ 2024
File Completion Date: 22/ 3/ 2024

Signature:

Head of Department Name:

Assist. Prof. Dr. Omar Hussein Ahmed

Date: 26/03/2024

Signature:

Scientific Associate Name:

Lect. Dr. Ali Hussein Abbas

Date: 26/03/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Nashwan Ahmed Sumait

Date: 26/03/2024

Signature:

Approval of the Dean

Lect. Dr. Ali Hussein Abbas

1. Program Vision
The college aspires to creativity, leadership and innovation in the field of pharmacology and pharmaceutical compounds found in plants and to rise the quality ladder to qualify distinguished pharmacists to work in various state institutions and the private sector to serve our dear country to take its natural position among the countries of the developed world

2. Program Mission
Developing the knowledge and skills necessary to practice the pharmacy profession at the highest levels to upgrade it and keep pace with global development to achieve the highest quality in the service of health institutions and provide the community with pharmacists with efficiency, professional skills and high ethical values and work to develop the capabilities of the faculty and their assistants and the administrative apparatus and promote scientific and applied research aimed at

3. Program Objectives
1.Knowledge of plant preparations 2. Study of medicinal plants and methods of extraction 3. The possibility of artificial reproduction of plants to increase the percentage of active substances

4. Program Accreditation
There is no accredited program in the Ministry of Higher Education and Scientific Research

5. Other external influences				
Training courses in hospitals, pharmaceutical laboratories and private pharmacies				
6. Program Structure				
Program Structure	**Number of Courses**	**Unit of study**	**Percentage**	**Reviews**
Requirements of the institution	**3**	**5**	**2.7%**	**Basic Course**
College Requirements	**61**	**180**	**97.3%**	**Basic Course**
Department Requirements	---	---	---	**Basic Course**
Summer Training	---	---	---	**Met**
Other	---	---	---	---

7 . Program Description				
Year/Level	**Course or Course Code**	**Course Name**	**Credit Hours**	
			theoretical	**Practical**
Second / Second Semester	2210	Drugs I	45	30
Third / First Semester	312	Drugs II	30	30
Third / Second Semester	312	Drugs III	30	30

***** Notes can include whether the course is basic or optional.

8. Expected Learning Outcomes of the Program

Knowledge

A- Knowledge of plant preparations

2- Study of medicinal plants and methods of extraction

3- The possibility of artificial reproduction of plants to increase the percentage of active substances

Skills

1- Acquire skill in extraction methods.

2- Acquire skill in isolating active substances

3- Acquire skill in diagnosing them

Values

C1- Developing the student's ability to discuss

C2- Actual application with existing capabilities

C3- Developing the student's ability to benefit from the available means

C4- Developing the student's ability to perform daily duties

9. Teaching and learning strategies

- Theoretical and practical lectures
- Field visits to places where plants are located
- Daily assignments and discussions

10. Evaluation methods

Theoretical and practical exams in addition to classroom and extracurricular activities and scientific seminars

11. Faculty

Faculty Members

Academic Rank	**Specialization**		**Requirements/Skills (if applicable)**	**Preparation of the teaching staff**	
	year	special		angel	Lecturer
Assistant Professor		1		1	
Assistant Lecturer		1		1	

Professional Development
Mentoring new faculty members
- Urging teachers to organize seminars and courses and give scientific lectures periodically. - Urging teachers to publish scientific research in their field of specialization in sober journals - Urging teachers to participate in local and international scientific conferences
Professional development of faculty members
- Participation in academic courses that are concerned with the field of education - Participate in curriculum development. - Active participation in scientific conferences - Motivating the teacher to use the various teaching methods for students

12. Acceptance Criterion
Admission is within the central admission in the Ministry of Higher Education and Scientific Research
13. The most important sources of information about the program
College website, college directory, university website, college page in social networking sites in addition to professional institutions (Iraqi Pharmacists Syndicate) and the Ministry of Higher Education and Scientific Research
14. Program Development Plan
- Updating and developing curricula according to the requirements of the labor market - Use contemporary technology applications successfully and master experiments - Providing volunteer activities - Directing student research towards applied projects that address the problems of society

Curriculum Skills Map

please tick in the relevant boxes where individual Program Learning Outcomes are being assessed

Year/ Level	Course Code	CourseTitle	Core (C) Title or Option(O)	Program Learning Outcomes															
				Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
2nd		Pharmacognosy I	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3rd		Pharmacognosy II	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		PharmacognosyIII	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

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

Course Description Form

1. Course Name:	
Pharmacognosy I	
2. Course Code:	
2210	
3. Semester/Year	
Second course / second year	
4. Date of preparation of this description	
1/3/2024	
5. Available Attendance Forms:	
Theoretical lectures in classroom and practical lectures in specialized lab.	
6. Number of credit hours (total) / number of units (total)	
45 hours theoretical / 30 hours practical number of units 4	
7. Course Administrator Name	
Assistant Professor Dr. Omar Hussein Ahmed	
8. Course Objectives	
Course Objectives	Study of the meaning of drugs and medicinal plants - diagnosis of medicinal plants - plant chemistry - methods of extraction, isolation and diagnosis Active compounds within the plant.
9. Teaching and learning strategies	
1- Theoretical lectures 2- Educational laboratories 3- Scientific reports 4- Office Research 5- learning	

10. Course Structure					
Week	Hours	International Labour Organization (ILO)	Unit/Unit or Subject Title	Teaching method	Evaluation method
1	3	General introduction	Introduction to Pharmacognosy	Whiteboard, Newsletter	Discussions
2	1	Drugs from natural Sources, official and unofficial raw medicines drugs	Recognition of consent Medicinal plants	Whiteboard, Newsletter	Discussions
2	2	Classification of natural products	Learn about the different types of classification of medicinal plants	Smart Board, Whiteboard, Newsletter	Discussions
3	2	Plant nomenclature and classification	Determine the system of plant nomenclature	Smart Board, Whiteboard, Newsletter	
4	3	Raw drug production: cultivation, collection, drying and storage	Different steps for the production of phytochemicals	Smart Board, Whiteboard, Newsletter	Discussions
					Midterm Exam
5	1	Deterioration of raw natural products	Identify factors affecting drug degradation	Smart Board, Whiteboard, Newsletter	Discussions
5	3	Chemistry of Natural Pharmaceutical Products	Determine the chemical type of phytochemicals in a plant,	Whiteboard, Newsletter	Discussions
	4	Quality Control: Evaluation of	Provide knowledge about	Whiteboard,	Discuss

6		**Natural Products;** **Microscopic Evaluation, Physical Evaluation, Chemical Evaluation, Biological Assessment, Spectroscopic Assessment**	**quality control of phytochemical products**	**Newsletter**	**ions**
7	**4**	**Phytochemical examination of herbal products: extraction** **of plant material; separation and isolation of voters;** **Characterization of isolated vehicles**	**Separation and identification of active phytochemicals in plant parts**	**Whiteboard, Newsletter**	**Dis cuss ions**
11,10,9,8	**15**	**Separation technique: introduction. separation and classification mechanisms based on type of technique;** **Paper chromatography Thin layer chromatography ion-** **exchange chromatography of gel filtration chromatography;** **Column chromatography Gas chromatography HPLC. Electrophoresis. Convergence chromatography.**	**Provide knowledge about various chromatography methods**	**Smart Board, Whiteboard, Newsletter**	**Dis cuss ions**

12	**3**	**Traditional plant medicines as a source of new medicines.** **Bioassay-oriented segmentation**	**Separation of pharmacologically active ingredients based on their activity**	**Smart Board, Whiteboard, Newsletter**	**Dis cuss ions**
13	**4**	**Tissue culture of medicinal plants: introduction and history.** **Plant Tissue Culture Laboratory. Sterilization techniques** **Apply plant tissue culture. Environmental and biological** **Control; Plant growth regulators.**	**Production of high-quality phytochemicals and phytochemicals by plant tissue culture**	**Smart Board, Whiteboard, Newsletter**	**Dis cuss ions**

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports... etc Tide score 20 out of 100 Practical score 20 out of 100 Final score 60 out of 100	
12. Learning and Teaching Resources	
Required textbooks (methodology, if any)	Pharmacognosy by Teyler
Key references (sources)	Trease and Evans Pharmacognosy; 15th ed., 2000
Recommended books and references (scientific journals, reports...)	Phytochemistry and pharmacognoy
Electronic References, Websites	UptodateACSPublications.National Institute of Health (NIH). -American Society of Pharmacognosy

Course Description Form

1. Course Name:	
Pharmacognosy II	
2. Course Code:	
312	
3. Semester/Year	
First course / third year	
4. Date of preparation of this description	
1/3/2024	
5. Available Attendance Forms:	
Theoretical lectures in classroom and practical lectures in specialized lab.	
6. Number of credit hours (total) / number of units (total)	
30 hours theoretical / 30 hours practical number of units 3	
7. Course Administrator Name	
Assistant Professor Dr. Omar Hussein Ahmed	
8. Course Objectives	
Course Objectives	Pathways of organic synthesis of plant compounds, study of glycoside types and classification with the most important active substances of glycoside species, knowledge of volatile oils, their types and method of extraction with their medical benefits
9. Teaching and learning strategies	
1- Theoretical lectures 2- Educational laboratories 3- Scientific reports 4- Office Research 5- Electron Education	

10. Course Structure					
Week	Hours	International Labour Organization (ILO)	Unit/Unit or Subject Title	Teaching method	Evaluation method
1	2	Introduction: General Biosynthesis Pathways for Secondary Metabolites	understand the biosynthesis pathways of various secondary metabolites,	Smart Board, Whiteboard, Newsletter	Discussions
2	2	carbohydrates	Overview of carbohydrates derived from pharmacologically important plants	Smart Board, Whiteboard, Newsletter	Discussions
3 ، 4	5	glycosides: biosynthesis, physical and chemical properties; Cardiogenic Glycosides. Glycosides of saponins. Anthraquinone glycosides. Flavonoids Glycosides. Cyanover glycosides	Understanding the active heart of saponin glycoside, anthraquinone and flavonoids as medicinal significance, SAR, mechanism of action and plant containing them.	Smart Board, Whiteboard, Newsletter	Discussions
5 ، 6	5	Glycosides: isotthiocyanate glycosides. Alcoholic aldehyde glycosides Glycosides. Phenolic glycosides Lactone glycosides. Coumarin and Chromons	Presentation of different types of glycosides and important medicinal plants that contain them.	Smart Board, Whiteboard, Newsletter	
7	2	Mix resins and resin. Tannins	Recognition of resin, resin-containing plant and resin chemistry Determination of the type of tannins, tannins, chemistry and medical significance	Smart Board, Whiteboard, Newsletter	Discussions
					Midterm Exam
8	2	Fats: fixed oils and candles	Overview of fat as a natural molecule, its chemistry and applications in pharmaceutical sciences..	Smart Board, Whiteboard, Newsletter	Discussions
9	2	Volatile oils: introduction; chemistry of volatile oils. Biosynthesis 3 Volatile oils hydrocarbons as volatile oils; alcohols	Learn about the method of extracting volatile oils, physical and chemical properties, pharmaceutical importance, and	Smart Board, Whiteboard, Newsletter	Discussions

		as volatile oils; Aldehydes as volatile oils	chemistry-based classification		
10	2	Ketones as volatile oils. Phenols as volatile oils. Volatile oxides Oils; Ester as volatile oils.phenolic ethers as volatile oils.	Persistence of physical and chemical properties, pharmaceutical significance and chemistry-based classification.	Smart Board, Whiteboard, Newsletter	Discussions
11	2	Vitamins and amino acids.	Medical significance, dosage, source, vitamin and amino acid deficiencies	Smart Board, Whiteboard, Newsletter	Discussions
12	2	Non-medicinal poisonous plants	Identification of non-medicinal poisonous plants	Smart Board, Whiteboard, Newsletter	Discussions

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports... etc Tide score 20 out of 100 Practical score 20 out of 100 Final score 60 out of 100	
12. Learning and Teaching Resources	
Required textbooks (methodology, if any)	Robbers JE, Speedie MK, Tyler VE (Eds.); Pharmacognosy and Pharmacobiotechnology; the latest edition.
Key references (sources)	Trease and Evans Pharmacognosy; 15th ed., 2000
Recommended books and references (scientific journals, reports...)	Phytochemistry and pharmacognoy
Electronic References, Websites	UptodateACSPublications.National Institute of Health (NIH). -American Society of Pharmacognosy

Course Description Form

1. Course Name:	
Pharmacognosy III	
2. Course Code:	
312	
3. Semester/Year	
Second course / third year	
4. Date of preparation of this description	
1/3/2024	
5. Available Attendance Forms:	
Theoretical lectures in classroom and practical lectures in specialized lab.	
6. Number of credit hours (total) / number of units (total)	
30 hours theoretical / 30 hours practical number of units 3	
7. Course Administrator Name	
Assistant Professor Dr. Omar Hussein Ahmed	
8. Course Objectives	
Course Objectives	Study of alkaloids , its types, the most important active substances and the method of extraction, antibiotics: natural sources; pathways of biosynthesis, isolation and purification. Phytotherapy: Introduction, principles and medicinal plants in selected healthcare systems. Important natural products and plant preparations used in pharmacy and medicine
9. Teaching and learning strategies	
1- Theoretical lectures 2- Educational laboratories 3- Scientific reports 4- Office Research 5-learning	

10. Course Structure					
week	Hours	International Labour Organization (ILO)	Unit/Unit or Subject Title	Teaching method	Evaluation method
1st, 2sec	5	Alkaloids: Introduction; Physical and chemical properties. pyridine, Alkaloids Piperidine Tropan alkaloids	Identify plants that contain pyridine Piperidine alkaloids. Tropan alkaloids and their medicinal importance	Smart Board, Whiteboard, Newsletter	Discussions
3rdthird, 4thth	5	Alkaloids: quinoline tropan alkaloids. Isoquinoline alkaloids; Imidazole alkaloids. Indole alkaloids	Identify and identify a plant that contains different classes of alkaloids and their medicinal importance.	Smart Board, Whiteboard, Newsletter	Discussions
5s,6s,7s	5	Alkaloids: Steroidal alkaloids. Lupine alkaloids. Alkaline amines. Purine alkaloids.	Identify and identify a plant that contains different classes of alkaloids and their medicinal importance	Smart Board, Whiteboard, Newsletter	
8s, 9s	6	Antibiotics:natural sources; pathways of biosynthesis, isolation and Purification..	Providing knowledge about antibiotics, their detection and uses	Smart Board, Whiteboard, Newsletter	Discussions
					Midterm Exam
10s, 11s, 12s, 13s, 14s	10	Phytotherapy: introduction, principles, selected medicinal plants Healthcare systems. Important natural plant medicine products used in medicine and pharmacy	Systematic classification of phytochemical supplements in domestic pharmacy, their medicinal significance and possible side effects	Smart Board, Whiteboard, Newsletter	Discussions

11. Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports... etc

Tide score 20 out of 100 Practical score 20 out of 100 Final score 60 out of 100	
12. Learning and Teaching Resources	
Required textbooks (methodology, if any)	Pharmacognosy by Teyler
Key references (sources)	Trease and Evans Pharmacognosy; 15th ed., 2000
Recommended books and references (scientific journals, reports...)	Phytochemistry and pharmacognoy
Electronic References, Websites	Up to date ACS Publications.National Institute of Health (NIH). -American Society of Pharmacognosy