

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

Academic program description forms for colleges and institutes

University: Basrah

College/Institute: Pharmacy

Academic Department: Pharmaceutics

File filling date: 2021-2022

Signature

Department Head:

Dr. Ahmed Najim Abood

Signature

Vice Dean for Scientific Affairs:

Dr. Modher nejim abdullah

File checked by:

Quality Assurance and University Performance Division

Director of the Quality Assurance and University Performance Division:

Date:

Signature:

Dr. Suha Shyal Abd AL-Hassan



Dean's endorsement
Dr. Falah Hassan Shari

Description of the academic program

This academic program description provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available opportunities. It is accompanied by a description of each course within the program.

1. Educational institution	College of Pharmacy
2. Academic Department/Center	Pharmaceutics
3. Academic or professional program name	Sciences in Pharmacy
4. Final certificate name	Bachelor's
5. Academic system: annual / courses / other	Two semesters in each academic year
6. Accreditation Program Used:	Description of the academic program
7. Other external influences	Practical part and discussion panels
8. Date of preparation of the description	2021-2022
<p>9. Academic Program Objectives: The program is divided into 5 stages (years) with 10 semesters as the following:</p> <p>First Stage:</p> <p>1st Semester: <u>Principle of Pharmacy</u>: Teaching the history and the basic of pharmacy science with method of volume and weight measurement.</p> <p>2nd Semester: <u>Pharmaceutical calculation</u>: teaching the basic of formulation of different dosage forms with method of calculation of rate of administration of IV fluid.</p> <p>Second Stage:</p> <p>1st and 2nd Semesters: <u>Physical Pharmacy</u>: To enable students understanding the basic principles of physiological functions of different tissues and organs of the human being, and how to evaluate these functions and correlate them with the normal and abnormal conditions. It also emphasizes on the role of homeostatic and hemodynamic changes in the integration of physiological status.</p> <p>Third stage:</p> <p>1st and 2nd Semesters: <u>Pharmaceutical Technology</u>: To teach theoretical bases for the technology of preparing different dosage forms with respect to their raw materials, compositions, methods of preparation, stability, storage and uses; in addition to define and characterize the possible incompatibilities that may occur in dosage forms.</p> <p>Fourth stage:</p> <p>1st Semester: <u>Biopharmaceutics</u>: The course deals with the physical and chemical properties of drug substance, dosage form and the biological effectiveness of the drug or drug product upon administration, including drug availability in the human or animal body from a given dosage form. The pharmacokinetic part of the course deals with the time-course of the drug in the biological</p>	

system, and quantification of drug concentration pattern in normal subjects and in certain disease states.

2nd Semester: Industrial Pharmacy I: The subject aim to teach pharmacy students the steps and lines upon which the preformulation processing of pharmaceutical dosage forms. This fundamental course provides the required principles to integrate knowledge of Pharmaceutical Technology in preformulation of perfect dosage form. It includes milling, mixing, drying and filtration, besides sterilization to achieve a proper processing of dosage forms.

Fifth Stage:

1st Semester: Industrial Pharmacy II: The course enables technical setup for coordination of standards for formulation of typical dosage forms and the principles needed to learn mass production of different pharmaceutical dosage forms. The syllabus includes different dosage forms like tablets, capsules, aerosols, emulsion, etc, besides the advanced techniques like enteric coating and micro-encapsulation.

2nd Semester: Dosage form design: This course enables students to understand the principles and factors that influence design dosage forms; and the applications of these principles in the practice of pharmaceutical industry.

2nd Semester: Pharmaceutical Biotechnology: Teach the students the formulation principle of biotechnological products with their pharmacokinetics behavior.

10. Required program outcomes and methods of teaching, learning and assessment:

A. Learning Goals:

1. Defining different dosage forms with reasons behind designing them.
2. Defining method of dosage form manufacturing.
3. Defining method of physical and chemical stability testing protocols.
4. Defining method of dose calculation for different route of administration.
5. Defining the map of drug distribution within the body starting from the point of administration till the drug excretion.

B. Skills objectives of the program

1. Acquisition of pharmaceutical manufacturing skills and solving the associated problem
2. Acquisition of skills to increase stability of dosage forms.
3. Acquisition of skills best selection of excipients.

Teaching and learning methods

1. Theoretical lectures
2. Training laboratories
3. Practical research
4. Seminars

Evaluation methods

1. Mid-term and final exams
2. Daily written and oral exams
3. Laboratory reports
4. Graduation projects

C. Moral and value goals

1. Enhancing students' ability to think and analyze logically to solve manufacturing problems
2. Encouraging critical reading of relevant research
3. Instilling the values of scientific integrity in the student and how to deal with the patient

Teaching and learning methods

Assigning the students home works

Visiting scientific websites and downloading solid and recent research

Evaluation methods

Oral discussions

Practical and theoretical exams

- D. Transferred general and qualification skills (other skills related to employability and personal development).

1. Graduation of a pharmacist with skills in performing experiments and discussing the results.
2. Skills in essential software such as : Word, Excel and power point.
3. Training the pharmacist on how to deliver effective presentation.

Teaching and learning methods

Conducting practical experiments, using modern devices for preparation and characterization, using modern projectors, and downloading scientific films from the information network.

Evaluation methods

Oral discussions, written exams and reports

11. Program structure

Educational level	Course code	Course name	Credit hours	
			Theoretical	Practical
First	-	Principle of Pharmacy	2	-
		Pharmaceutical calculation	2	2
Second	-	Physical Pharmacy I	3	2
		Physical Pharmacy II	3	2
Third	-	Pharmaceutical Technology I	3	2
		Pharmaceutical Technology II	3	2
Fourth	-	Biopharmaceutics	2	2
		Industrial Pharmacy I	3	2
Fifth	-	Industrial Pharmacy II	3	2

		Dosage Form Design	2	-
		Pharmaceutical Biotechnology	1	-

Planning for personal development

Personal and professional development

Develop communication skills

Develop scientific and objective thinking

Scientific discussions

12. Admission standard (setting regulations related to joining the college or institute).

Central Admission, Ministry of Higher Education and Scientific Research for each of the following:

High school graduates (Science branch)

The first from the medical institute

The first in the first stage in the College of Sciences

The first on the first stage of the Medical Institute

13. The most important sources of information about the program

Pharmaceutical,calculations,,by,Ansel,,,,,,,,,

Physical,pharmacy,,by,,,,,Martin,,,,,,,,,

Pharmaceutical,dosage,forms,,,by,,,Ansel

Pharmaceutics,,by,Aulton

Applied,Biopharmaceutics,,,by,,Shargel

Industrial,pharmacy,,by,,,Leon,,Lachman

Curriculum skills chart

Please check the boxes corresponding to the individual learning outcomes from the program being evaluated

Learning outcomes required from the program

Year/level	Course Code	Course Name	Essential or optional	Learning objectives				Skills objectives of the program				Moral and value goals				Transferred general and qualification skills (other skills related to employability and personal development).			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
First	-	Principle of Pharmacy	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Pharmaceutical calculation	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
Second	-	Physical Pharmacy I	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Physical Pharmacy II	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	

Third	-	Pharmaceutical Technology I	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Pharmaceutical Technology II	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
Fourth	-	Biopharmaceutics	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Industrial Pharmacy I	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
Fifth	-	Industrial Pharmacy II	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Dosage Form Design	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	
	-	Pharmaceutical Biotechnology	Essential	*	*	*	*	*	*	*		*	*	*		*	*	*	

Course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student, demonstrating whether he has made the most of the available learning opportunities. It must be linked to the description of the program

1. Educational institution	College of Pharmacy
2. Academic Department/Center	Pharmaceutics
3. Course name / code	Principle of Pharmacy, Pharmaceutical calculation, Physical Pharmacy, Pharmaceutical Technology, Biopharmaceutics, Industrial Pharmacy, Dosage Form Design, Pharmaceutical Biotechnology
4. Available forms of attendance	Theoretical lectures, laboratory experiments and seminars
5. Semester/Year	Five study stages divided into two semesters, and each semester has an academic subject
6. Number of academic hours (total)	91 hours divided into theoretical and practical lectures
7. The date this description was prepared	2021-2022
8. Course objectives	<ul style="list-style-type: none"> • Teaching the history and the basic pf pharmacy science with method of volume and weight measurement. • Teaching the basic of formulation of different dosage forms with method of calculation of rate of administration of IV fluid. • To enable students understanding the basic principles of physiological functions of different tissues and organs of the human being, and how to evaluate these functions and correlate them with the normal and abnormal conditions. It also emphasizes on the role of homeostatic and hemodynamic changes in the integration of physiological status.

- To teach theoretical bases for the technology of preparing different dosage forms with respect to their raw materials, compositions, methods of preparation, stability, storage and uses; in addition to define and characterize the possible incompatibilities that may occur in dosage forms.
- The course deals with the physical and chemical properties of drug substance, dosage form and the biological effectiveness of the drug or drug product upon administration, including drug availability in the human or animal body from a given dosage form. The pharmacokinetic part of the course deals with the time-course of the drug in the biological system, and quantification of drug concentration pattern in normal subjects and in certain disease states.
- The subject aims to teach pharmacy students the steps and lines upon which the preformulation processing of pharmaceutical dosage forms. This fundamental course provides the required principles to integrate knowledge of Pharmaceutical Technology in preformulation of perfect dosage form. It includes milling, mixing, drying and filtration, besides sterilization to achieve a proper processing of dosage forms.
- The course enables technical setup for coordination of standards for formulation of typical dosage forms and the principles needed to learn mass production of different pharmaceutical dosage forms. The syllabus includes different dosage forms like tablets, capsules, aerosols, emulsion, etc, besides the advanced techniques like enteric coating and micro-encapsulation.
- This course enables students to understand the principles and factors that influence design dosage forms, and the applications of these principles in the practice of pharmaceutical industry.
- Teach the students the formulation principle of biotechnological products with their pharmacokinetics behavior

10. Course outcomes and methods of teaching, learning and assessment

A. Learning Goals

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4. Course structure

Weeks	Hours/Wk	Required learning outcomes	Unit name/topic	Teaching method	Evaluation method
15 weeks	2 theoretical	Basic of Pharmacy Science	Principle of Pharmacy	Lectures	Theoretical exam
15 weeks	2 theoretical and 2 practical	Formulation calculation	Pharmaceutical calculation	Lectures and laboratory experiments	Theoretical and practical exam
30 weeks	3 theoretical and 2 practical	Study physicochemical properties	Physical Pharmacy	Lectures and laboratory experiments	Theoretical and practical exam
30 weeks	2 theoretical and 2 practical	Formulation of dosage forms	Pharmaceutical Technology	Lectures and laboratory experiments	Theoretical and practical exam
15 weeks	2 theoretical and 2 practical	Drug absorption	Biopharmaceutics	Lectures and laboratory experiments	Theoretical and practical exam
30 weeks	3 theoretical and 2 practical	Drug manufacturing	Industrial Pharmacy	Lectures and laboratory experiments	Theoretical and practical exam
15 weeks	2 theoretical	Reasons for designing different dosage forms	Dosage Form Design	Lectures	Theoretical exam
15 weeks	1 theoretical	Manufacturing of protein	Pharmaceutical Biotechnology	Lectures	Theoretical exam

1. Infrastructure	
1. Required text books	Pharmaceutical,calculations,,by,Ansel,,,,,,,,,,,,, Physical,pharmacy,,by,,,,,,Martin,,,,,,,,,,,,, Pharmaceutical,dosage,forms,,by,,,Ansel Pharmaceutics,,by,Aulton Applied,Biopharmaceutics,,,,by,,Shargel Industrial,pharmacy,,by,,,Leon,,Lachman
2. Main references (sources)	British" pharmacopoeia" United "State "Pharmacopoeias "Pharmacopoeias European
A. Recommended books and references (scientific journals, reports,)	International journal of Pharmaceutics European journal of Biopharmaceutics and Pharmaceutical Sciences
B. Electronic references, websites	http://www.sciencedirect.com https://scholar.google.com
13. Course development plan	
Review the curricula completion rates after the end of each semester and assess the extent to which the student has benefited from the academic materials in the practical aspect	