

Academic Program Description Form

University Name: AL ARAQIA SCIENCE UNIVERSITY

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: Clinical pharmacy program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

1. Program Vision

Achieving a high level of pharmaceutical education and training in the clinical environment and qualifying distinguished and qualified pharmacists to provide safe and effective pharmaceutical care to patients and society.

2. Program Mission

Achieving leadership and excellence in clinical pharmacy education and qualifying distinguished pharmacists committed to the highest ethical and professional standards, in addition to providing a stimulating and advanced educational environment that helps students develop their pharmaceutical skills and knowledge and apply them in clinical work.

3. Program Objectives

- 1- Know the different types of minor illnesses and how to deal with them in the pharmacy.
- 2- Study of various diseases (causes, symptoms, diagnosis, treatment, and dealing with side effects)
- 3- Provide health care services in the community pharmacy, make use of drug history and drug information; Administer and dispensing medications as well as provide patient guidance concepts regarding patient compliance with pharmacist instructions.
- 4- Make the communication skills necessary for the work of a pharmacist.
- 5- Have the ethics of the pharmacy profession.
- 6- Apply the foundations of pharmacoeconomics.
- 7- Study methods for calculating concentrations of dangerous drugs in the blood and how to deal with them.

8- Identify the various drug interactions, interactions, pharmacovigilance, and contraindications for the use of various medications.

4. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

5. Other external influences

There is no third party sponsor of the program.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	12	27	16%	basic
Department Requirements				
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/Second course	MU7011206	Arabic Language	Two hours a week	–
Third/second course	MU0713206	Pharmacy ethics	One hour per week	–
Fourth/ first course	MU0714103	Clinical pharmacy1	Two hours a week	Two hours a week
Fourth/ second course	MU0714203	Clinical pharmacy 2	Two hours a week	Two hours a week
Fourth/ second course	MU0714206	Communication skill	Two hours a week	
Fifth / first course	MU0715103	Applied therapeutics 1	Three hours a week	
Fifth / second course	MU0715204	Applied therapeutics 2	Two hours a week	
Fifth / second course	MU0715202	Therapeutic drug monitoring	Two hours a week	Two hours a week
Fifth / second course	MU0715203	pharmacoeconomics	Two hours a week	

Fifth / second course	MU0715205	Hospital training		Four hours a week
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8. Expected learning outcomes of the program	
Knowledge	
1a- Know how to dispense medicine in pharmacies for simple cases 2a- Diagnose Causes, symptoms, and diagnosis of various diseases 3a- Know how to treat the patient and educate him about his health	
Skills	
1b- Have Communication skills with patients 2b- Have skills of drug education for patients 3b - Use skill of extracting the required information from approved sources 4b- Know how to conduct and deliver qualitative seminars and lectures	
Ethics	
1C- Think skills through translating, analysing, evaluating and extracting ideas 2c- Instill moral values for proper dealing with patients	

9. Teaching and Learning Strategies
1. Self-learning 2. Collaborative Learning

3. Brainstorming
4. Discussion
5. Interactive Offers
6. Lecture
7. Project
8. Interrogation

10. Evaluation methods

1. Electronic and in-person written tests, depending on general circumstances.
2. Oral exams
3. Scientific reports
4. Direct questions

Professional Development

Mentoring new faculty members

New faculty are mentored by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching clinical pharmacy. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.

- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.
- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

11. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

12. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

13. Program Development Plan

The plan seeks to enhance clinical skills by attempting to update curricula to include case studies and practical applications, increase training opportunities in hospitals, and develop effective assessment methods that include practical and theoretical aspects.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Third/second course	MU0713206	Pharmacy ethics	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fourth/ first course	MU0714103	Clinical pharmacy1	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fourth/ second course	MU0714203	Clinical pharmacy 2	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fourth/ second course	MU0714206	Communication skill	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / first course	MU0715103	Applied therapeutics 1	basic	/	/	/	/	/	/	/	/	/	/	/	/

Fifth / second course	MU0715204	Applied therapeutics 2	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / second course	MU0715202	Therapeutic drug monitoring	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / second course	MU0715203	pharmacoeconomics	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / second course	MU0715205	Hospital training	basic	/	/	/	/	/	/	/	/	/	/	/	/

Academic Program Description Form

University Name: ALRAQIA SCIENCE UNIVERSITY

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: Pharmacology and Toxicology program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

1. Program Vision

Providing distinguished and specialized education in the field of medicines and toxicology, and preparing students to contribute to improving health care and patient safety. In addition to developing a strong educational structure to qualify students in the field of medicines and toxicology, including providing modern scientific knowledge and modern techniques related to pharmacy and toxicology, as well as enhancing awareness of patient safety and professional ethics in the use and handling of medicines.

2. Program Mission

Qualifying and training students to become specialized pharmacists committed to providing safe and effective health care to patients through the correct and accurate use of medications.

3. Program Objectives

- 1– Study the types of medicines used to treat various diseases.
- 2– Study the disadvantages of medications.
- 3– Study the cases of prohibited use of medicines.
- 4– Study the effect of the drug on the body's systems.
- 5– Study the body's effect on the drug, including absorption, metabolism, and excretion.
- 6– Study of drug interactions.

4. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

5. Other external influences

There is no third party sponsor of the program

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	8	24	15%	base
Department Requirements				
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 /First course	MU0711107	Medical Terminology	One hours a week	

second/ first course	MU0712103	Physiology I	Two hours a week	Two hours a week
second/ second course	MU0712203	Physiology II	Two hours a week	Two hours a week
Third / second course	MU0713204	Pharmacology I	Two hours a week	
Fourth / first course	MU0714101	Pharmacology II	Three hours a week	
Fourth / second course	MU0714205	Pharmacology III	Two hours a week	
Fourth / second course	MU0714204	General Toxicology	Two hours a week	Two hours a week
Fifth/ first course	MU0715104	Clinical Toxicology	Two hours a week	

8. Expected learning outcomes of the program	
Knowledge	
A1- Know the kinetic and dynamic characteristics of drugs.	
A2- Know the disadvantages and toxicity of drugs and chemicals and methods of treating them.	

A3- Conduct and deliver seminars and lectures on pharmacology and toxicology. As well as writing and writing graduate research on drugs and toxins.	
Skills	
<p>B1 – Have the skill of preparing and dispensing medications.</p> <p>B2 – Have ethics and skills in dealing with laboratory animals.</p> <p>B3 – Have Skill in using laboratory equipment and supplies for pharmaceutical research.</p> <p>B4 – Have Skill in dealing with patients.</p>	
Ethics	
<p>C1- Thinking skills through translating, analyzing, evaluating and extracting ideas.</p> <p>C2- Creativity skills in drug composition and its different chemical formulas.</p> <p>C3- The skill of diagnosing side effects and toxicity of medications if they occur</p>	

9. Teaching and Learning Strategies
<ol style="list-style-type: none"> 1. Self-learning 2. Collaborative Learning 3. Brainstorming 4. Discussion 5. Interactive Offers 6. Lecture 7. Project 8. Interrogation

10. Evaluation methods

1. Electronic and in-person written tests, depending on general circumstances.
2. Oral exams
3. Scientific reports
4. Direct questions

Professional Development

Mentoring new faculty members

New faculty are guided by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching the subject of drugs and toxicology. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.
- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.

- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

11. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

12. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

13. Program Development Plan

The program focuses on enhancing knowledge of the effects of drugs and toxins, while introducing new materials on modern drugs and environmental toxins. The plan includes providing laboratories equipped for practical experiments and encouraging research related to drugs and toxins.

Fourth / second course	MU0714204	General Toxicology	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth/ first course	MU0715104	Clinical Toxicology	basic	/	/	/	/	/	/	/	/	/	/	/	/
First /second course	MU0711106	Medical Terminology	basic	/	/	/	/	/	/	/	/	/	/	/	/

Academic Program Description Form

University Name: ALRAQIA SCIENCE UNIVERSITY

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: pharmaceutical Chemistry program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

14. Program Vision

Providing a comprehensive and specialized educational program in the field of pharmaceutical chemistry, which includes theoretical and practical aspects and pharmaceutical applications, as well as providing the scientific knowledge and technical skills necessary for students to achieve excellence in this field.

15. Program Mission

Providing students with the scientific knowledge and practical skills necessary in the field of pharmaceutical chemistry and striving to develop basic concepts and advanced techniques in pharmaceutical chemistry to enable students to analyze and interpret chemicals associated with drugs and their effect on the human body. In addition to encouraging innovation and scientific research in the field of pharmaceutical chemistry to develop knowledge and new technologies that contribute to improving the pharmaceutical industry and patient care. We seek to provide a supportive environment for students to participate in scientific research and experiments and develop their skills in this field.

16. Program Objectives

1. Teach appropriate and safe ways to deal with chemicals, glassware, and devices
2. Teach the techniques used to identify different chemical substances
3. Teach the different techniques and methods used in manufacturing various chemical materials
4. Study the chemical and physical properties of medicines and chemicals
5. Teach how to draw and name the structural formula of drugs and chemicals

6. Study modern methods in designing chemical compounds using modern electronic programs
7. Teach the mechanics of action of drugs and chemicals and studying the effect of changes made to the structural formula and chemicals on biological effectiveness, solubility, stability, side effects, and duration of action of the drug.

17. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

18. Other external influences

There is no third party sponsor of the program.

19. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	10	39	22%	basic
Department Requirements				
Summer Training				
Other				

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

20. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First/ First course	MU0711101	Analytical Chemistry	3	2
First/ second course	MU0711201	Analytical Chemistry 1	3	2
second / First course	MU0712101	Analytical Chemistry 2	3	2
second / second course	MU0712205	Analytical Chemistry 3	3	2
Third / first course	MU0713104	Inorganic pharmaceutical chemistry	2	2
Third / second course	MU0713201	organic pharmaceutical chemistry 1	3	2
Fourth / first course	MU0714102	organic pharmaceutical chemistry 2	3	2
Fourth / second course	MU0714201	organic pharmaceutical chemistry 3	3	2
Fifth / first course	MU0715105	organic pharmaceutical chemistry 4	2	-
Fifth / second course	MU0715201	Advanced Pharmaceutical Analysis	3	2

21. Expected learning outcomes of the program	
Knowledge	
A1- Correct handling of chemicals and glassware	

<p>A2– Operate scientific equipment in correct and appropriate ways</p> <p>A3– Gain experience in using different techniques to prepare medicines and chemicals</p> <p>A4– Know the mechanics of drug action</p> <p>A5– Know the factors affecting biological effectiveness, solubility, stability, side effects, and duration of action of the drug</p> <p>A6– Study the methods of chemical reactions</p>	
Skills	
<p>B1 – Acquire the skill on how to identify and evaluate chemical compounds</p> <p>B2 – Acquire skill in using different methods for preparing and manufacturing chemical compounds</p> <p>B3 – Acquire skill in writing scientific reports</p>	
Ethics	

22. Teaching and Learning Strategies
<ol style="list-style-type: none"> 1. 1. Self-learning 2. Collaborative Learning 3. Brainstorming 4. Discussion 5. Interactive Offers 6. Lecture 7. Project 8. Interrogation

23. Evaluation methods

1. Electronic and in-person written tests, depending on general circumstances.
2. Oral exams
3. Scientific reports
4. Direct questions

Professional Development

Mentoring new faculty members

New faculty are mentored by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching clinical pharmacy. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.
- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.

- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

24. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

25. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

26. Program Development Plan

The plan focuses on enhancing a deep understanding of drug-related chemistry, while updating curricula to include organic and biochemistry, providing practical experiments, and supporting research projects to develop new compounds.

Fourth / first course	MU071410 2	organic pharmaceutical chemistry 2	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fourth / second course	MU071420 1	organic pharmaceutical chemistry 3	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / first course	MU071510 5	organic pharmaceutical chemistry 4	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / second course	MU071520 1	Advanced Pharmaceutical Analysis	basic	/	/	/	/	/	/	/	/	/	/	/	/

Academic Program Description Form

University Name: ALRAQIA SCIENCE University

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: Pharmaceuticals program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

27. Program Vision

Qualifying and training students to become specialized and distinguished pharmacists in the field of pharmaceuticals, and meeting the needs of health care and society by providing the scientific knowledge and skills necessary for students to deal with medicines, equally encouraging scientific research in the field of pharmaceuticals and their pharmaceutical applications, and continuous cooperation and communication with the pharmaceutical industry and the health community.

28. Program Mission

Providing distinguished education and high-quality training in the field of pharmaceuticals, and qualifying students with the scientific knowledge and skills necessary to practice the pharmacy profession efficiently and professionally. Comprehensive theoretical education and practical training are provided to develop diagnostic skills and effective communication with patients and other healthcare teams.

29. Program Objectives

1. Objectives of the academic program

Five-year program:

The first stage

F1 (Pharmacy and Pharmaceutical Accounts): It studies the basics of pharmacy and its history, in addition to teaching methods for measuring weights and volumes. As for F2, it studies the basics of composing medications in their different doses.

The second stage

F1\F2 (Physical Pharmacy) : It studies the physical, mathematical and chemical basis of all the physical and chemical phenomena of substances in their solid, liquid and gaseous states.

The third stage

F1\F2 (Pharmaceutical technology): In these two chapters, you study all the basics of making pharmaceutical formulations such as powders/syrups/pills/ointments...etc., and methods of their preparation, stability, and packaging.

The fourth stage

F1 (Biopharmaceutics) where the student studies the methods of absorption of various types of medications and their dosages, in addition to the mechanism of their absorption, spread, metabolism, and excretion inside and outside the body.

F2 (Industrial Pharmacy) where the student studies the methods specific to the pharmaceutical industry in factories, such as blending, mixing and packaging.

The fifth stage

F1 (Industrial Pharmacy), in which the student studies how to fully manufacture various pharmaceutical doses.

F2 (Dosage Form Design), in which the student studies how to design pharmaceutical doses in their various forms and with various methods of delivering them within the body.

F3 (Pharmaceutical Biotechnology) in which the student studies the medicinal dosages for hormones and proteins and methods of sterilizing and preserving them.

30. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

31. Other external influences

There is no third party sponsor of the program.

32. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	11	32	17%	basic
Department Requirements				
Summer Training				
Other				

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

33. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First/ First course	MU0711104	Principle of pharmacy practice	2 hour	---
First/ second course	MU0711202	Pharmaceutical calculation	2 hours	2 hours

second / First course	MU0712103	Physical pharmacy I	3 hours	2 hours
second / second course	MU0712202	Physical pharmacy II	3 hours	2 hours
Third / first course	MU0713101	Pharmaceutical technology I	3 hours	2 hours
Third / second course	MU0713202	Pharmaceutical technology II	3 hours	2 hours
Fourth / first course	MU0714104	Biopharmaceutics	2 hours	2 hours
Fourth / second course	MU0714202	Industrial Pharmacy I	3 hours	2 hours
Fifth / first course	MU0715101	Industrial Pharmacy II	3 hours	2 hours
Fifth / second course	MU0715206 MU0715207	Dosage Form Design Pharmaceutical Biotechnology	2 hours 1 hours	--- ---

34. Expected learning outcomes of the program	
Knowledge	
<p>A1. Identify medicines of all types and forms.</p> <p>A 2. Know Methods for preparing active ingredients in full medicinal doses for humans and animals.</p> <p>A3. Study of the stability of prepared doses in various forms.</p> <p>A4. Study of the drug effect, its effectiveness, and its mechanism of action within the body</p>	

Skills	
B1. Acquire skill in composition and preparation methods B2. Acquire the skill to know how to maintain stability for as long as possible B 3. Acquire skill in diagnosing separated compounds	
Ethics	

35. Teaching and Learning Strategies
<ol style="list-style-type: none"> 1. 1. Self-learning 2. Collaborative Learning 3. Brainstorming 4. Discussion 5. Interactive Offers 6. Lecture 7. Project 8. Interrogation

36. Evaluation methods
<ol style="list-style-type: none"> 1. Electronic and in-person written tests, depending on general circumstances. 2. Oral exams 3. Scientific reports 4. Direct questions

Professional Development

Mentoring new faculty members

New faculty are mentored by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching clinical pharmacy. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.
- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.
- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

37. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

38. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

39. Program Development Plan

The plan seeks to develop skills in drug design and manufacturing by updating curricula to include modern technologies, providing specialized laboratories, and submitting final projects related to drug development.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First/ First course	MU0711104	Principle of pharmacy practice	basic	/	/	/	/	/	/	/	/	/	/	/	/
First/ second course	MU0711202	Pharmaceutical calculation	basic	/	/	/	/	/	/	/	/	/	/	/	/
second / First course	MU0712103	Physical pharmacy I	basic	/	/	/	/	/	/	/	/	/	/	/	/
second / second course	MU0712202	Physical pharmacy II	basic	/	/	/	/	/	/	/	/	/	/	/	/
Third / first course	MU0713101	Pharmaceutical technology I	basic	/	/	/	/	/	/	/	/	/	/	/	/
Third / second course	MU0713202	Pharmaceutical technology II	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fourth / first course	MU0714104	Biopharmaceutics	basic	/	/	/	/	/	/	/	/	/	/	/	/

Fourth / second course	MU0714202	Industrial Pharmacy I	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / first course	MU0715101	Industrial Pharmacy II	basic	/	/	/	/	/	/	/	/	/	/	/	/
Fifth / second course	MU0715206 MU0715207	Dosage Form Design Pharmaceutical Biotechnology	basic	/	/	/	/	/	/	/	/	/	/	/	/

Academic Program Description Form

University Name: ALRAQIA SCIENCE University

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: Pharmacognosy program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

40. Program Vision

Develop and enhance knowledge and understanding in the field of drugs and medical drugs, and improve health care and quality of life through the safe and effective use of drugs and medical drugs. In addition to providing distinguished education and high-quality training, it provides comprehensive and updated curricula and practical training to qualify students with the knowledge and skills necessary to work in the pharmaceutical and medical device industry.

41. Program Mission

Providing high-quality education and specialized training in the field of drugs and medical drugs. The program aims to qualify students with the scientific knowledge and practical skills necessary to work in the pharmaceutical and medical pharmaceutical industry, and to improve pharmacy practice and the safe and effective use of medications. The program also seeks to promote scientific research and innovation in the field of drugs and medical plants, and to provide guidance and health awareness to patients and society regarding the correct use of medicines and medicinal plants.

42. Program Objectives

The two-year program: The second stage –The second course studies the basics and principles of pharmacognosy and phytochemistry.

The third stage: two courses of lists the active substances in plants in terms of their chemical composition, the way they are made inside the plant, and their medical effect on the human body.

43. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

44. Other external influences

There is no third party sponsor of the program

45. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	3	10	6%	
Department Requirements				
Summer Training				
Other				

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

46. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

second/ second course	MU0712204	Pharmacognosy I	3 hours a week	2 hours a week
Third / first course	MU0713105	Pharmacognosy II	2 hours a week	2 hours a week
Third / second course	MU0713205	Pharmacognosy III	2 hours a week	2 hours a week

47. Expected learning outcomes of the program	
Knowledge	
<p>A1– Identify all sources of natural products and raw medicines.</p> <p>A2– know Methods of extracting active ingredients.</p> <p>A3– Study of chemistry and biosynthesis.</p> <p>A4– Study of pharmacological effect and effectiveness.</p>	
Skills	
<p>B1 – Acquire skill in extraction methods</p> <p>B2 – Acquire skill in isolating active compounds</p> <p>B3 – Acquire skill in diagnosing separated compounds</p>	
Ethics	
<p>C1– Think skills through translating, analysing, evaluating and extracting ideas.</p> <p>C2– Have Acceptance and response to dealing with medicinal plants in practical life.</p> <p>C3– Can Characterizing and diagnosing the clinical and toxic signs resulting from the effect of medicinal plants.</p>	

48. Teaching and Learning Strategies
1. Self-learning

2. Collaborative Learning
3. Brainstorming
4. Discussion
5. Interactive Offers
6. Lecture
7. Project
8. Interrogation

49. Evaluation methods

1. Electronic and in-person written tests, depending on general circumstances.
2. Oral exams
3. Scientific reports
4. Direct questions

Professional Development

Mentoring new faculty members

New faculty are guided by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching the subject of drugs and toxicology. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.
- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.
- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

50. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

51. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

52. Program Development Plan

The plan aims to understand the role of plants in medicine by updating curricula to include studies on medicinal plants, organizing field trips, and establishing partnerships with research institutions to support student projects.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
second/ second course	MU0712204	Pharmacognosy I	basic	/	/	/	/	/	/	/	/	/	/	/	/
Third / first course	MU0713105	Pharmacognosy II	basic	/	/	/	/	/	/	/	/	/	/	/	/
Third / second course	MU0713205	Pharmacognosy III	basic	/	/	/	/	/	/	/	/	/	/	/	/

Academic Program Description Form

University Name: ALRAQIA SCIENCE university

Faculty/Institute: College of pharmacy

Scientific Department: Department of pharmacy

Academic or Professional Program Name: Clinical laboratory Science program

Final Certificate Name: Bachelor's degree in pharmacy

Academic System: courses

Description Preparation Date: 1/12/2025

File Completion Date:

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Unit of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Unit:

Date:

Signature:

Approval of the Dean

53. Program Vision

Providing students with the scientific knowledge and practical skills necessary to work in the field of clinical laboratory sciences. This includes training on various laboratory techniques and the use of various devices and tools used in analysis and diagnosis. In addition to improving the graduate's abilities in diagnosing clinical cases and interpreting laboratory test results. Training is enhanced in analyzing various samples such as blood, urine and genetic sample, and analyzing and interpreting the data correctly to obtain an accurate diagnosis.

54. Program Mission

Providing distinguished and comprehensive education in the field of clinical laboratory sciences, with the aim of refining and developing students' skills and qualifying them to become qualified pharmacists committed to providing safe and effective health care.

55. Program Objectives

After five years, maintain the students' level by developing titles in a logical manner and in steps. Taking every opportunity to point out the interconnection between operations. Identifying gaps in our knowledge that promise a future generation of scientists. Providing historical context for selected key discoveries, when such context is useful. Students who have arrived as pharmacists, our department is concerned with all information related to laboratory evaluation, and how to find an explanation for the purpose of writing clinical reports in many branches such as hematology, serology, clinical biochemistry, immunology,

bacteriology, mycology, parasitology and viruses to help Doctors diagnose and make good decisions in treatment.

Human Anatomy: The study of the position of various organs in the thoracic and abdominal cavities including: the digestive system, circulatory system, lymphatic system, respiratory system, urinary system, reproductive system, endocrine system, nervous system and skin.

Human Biology: The study of the composition of the human body, types of cell structures, types of tissues, bones, skeleton, joints, and muscles, as well as nutrition. Human biology is also explained in detail about various body systems and human genetics. At the end of the course the student should be able to describe the composition of the human body, body structure and function, human genetics such as Mendelian inheritance, and chromosome partitioning, and terms such as allele, locus, homozygous, and heterozygous.

Mathematics and Biostatistics: Gives students the ability to deal with the concept of mathematics and statistics, emphasizes the knowledge and skills required to efficiently perform the duties and responsibilities of a pharmacist. The course covers the concept of basic mathematics and the application of biostatistics in the medical field. Upon completion of the course, students will be able to understand the applications of statistics in the medical field.

Computer Science: Gives students the ability to deal with the concept of computer science, and emphasizes the knowledge and skills required to efficiently perform the duties and responsibilities of a pharmacist. The course deals with the basic concept of computers and its application in human life and the medical field. Upon

completion of the course, students will be able to understand computer terminology, abbreviations used to describe the lecture, and application programming languages.

Histology: is concerned with studying the tissue structure of the human body. It is primarily intended to give the student a foundation for advanced study in healthcare, physiology, pathology, and other health and fitness related fields. At the end of the course, the student should be familiar with the histological description of the human body

Medical Physics: Gives students the ability to deal with physics concepts, and emphasizes the knowledge and skills necessary to perform and efficiently perform the duties and responsibilities of a pharmacist. The course deals with the concept of basic physics and the application of physics in the medical field. Upon completion of the course, students will be able to understand the physical terminology and abbreviation used to describe the lecture, and its application in the medical field.

Medical Microbiology: Medical bacteriology is concerned with knowing the different types of bacteria, the shape and name of all microorganisms, parts of the microscope and how it can be used to diagnose different types of bacteria, and classifying bacteria according to their livelihood, for example, into aerobic, non-aerobic, etc. Because of its shape, such as rod and spherical, as well as according to its interaction with the dye, such as Gram-negative and Gram-positive. How to cultivate bacteria in media and how to sterilize. Provides a

basic understanding of the form, anatomy, physiology, and genetics of bacteria as well as methods for dealing with, visualizing, and identifying bacterial disease.

Medical virology, parasitology and immunology: concerned with knowing how to diagnose diseases according to laboratory results. And a study of many types of parasites, their shape, place of living, the name of the disease, the life cycle of the parasite, and signs and symptoms. Discussing the life cycle of the virus, the types and infectious stages, the incubation period of the disease, the route of infection, prevention and treatment. It aims to provide the student with knowledge about disease development, form, laboratory diagnosis and identification, diseases, clinical manifestations of parasitic and viral diseases, and the basic concepts of conducting immunization against these diseases. It also aims to gain knowledge of the methods of specialized and non-specialized immune response, as well as the most important diseases resulting from excessive or decreased immune response.

Pathology: Describes the basic concepts of diseases at the cellular level related to infection, the body's defense mechanism from diseases, mutations, and cellular reproduction. It outlines the basic pathological factors that affect the disease process. It describes the effect and abnormal functions on the organs associated with the disease process of the target body systems. It describes the clinical manifestations associated with diseased organs.

Biochemistry 1: It is interested in knowing the definition of “biochemistry”. It explains the specificity of enzymes (biochemical catalysts), the chemistry involved in enzyme work, and how the process of glucose metabolism occurs, which ultimately leads to the generation of large amounts of energy. It describes how

metabolism occurs. Dietary studies of fats and amino acids, and explaining how they can be used to obtain fuel. Describes the structure of DNA, explains how it carries genetic information in its base sequences, DNA replication, and identifies five classes of polymeric biomolecules and their monolithic structure.

Biochemistry 2: It is concerned with studying vital energy, the role of ATP, the importance of carbohydrates and their metabolism, the importance of fats and their metabolism, amino acids and proteins and their metabolism, and plasma proteins. And the diversity of the work of the endocrine system, hormones, enzymes, and enzyme kinetics. and nucleotide metabolism. The structure of DNA, and the process of transcription and translation.

Public Health : This program allows students to understand the principles of public health and the art of preventing disease, promoting health, and extending life, through an organized community effort.

Clinical chemistry: studies the required laboratory tests and interpretation of the results, disorders of cellular carbohydrate metabolism, disorders of plasma lipids and lipoproteins, liver function tests, kidney function disorders, and plasma enzymes in diagnosis. Hypothalamus and pituitary gland. Adrenal . Reproductive system. Pregnancy and infertility. Thyroid function tests. Plasma proteins.

Laboratory training: It aims to learn how to conduct different types of analyses, discuss the results, and write clinical reports according to data obtained from the evaluation. Training includes hematology, parasitology, bacteriology,

biochemistry, quality control, immunology, serology, virology, general urine examination, sterilization, blood sampling and new branch techniques.

56. Program Accreditation

There is an accredited program in preparation by the National Council for Programmatic Accreditation for Colleges of Pharmacy in the Ministry of Higher Education and Scientific Research.

57. Other external influences

There is no third party sponsor of the program

58. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	19	44	24%	base
Department Requirements				
Summer Training				
Other				

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

59. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

First / First course	MU0711102	Human biology	2	2
First / First course	MU0711103	Mathematics and biostatistics	3	-
First / First course	MU0711108	Computer science	-	2
First /second course	MU0711203	Medical physics	2	2
First /second course	MU0711207	Computer science	-	2
First /second course	MU0711204	Histology	2	2
First /second course	MU0711205	Human anatomy	1	2
First / first course	MU0711106	Democracy Human rights	1	-
second/ first course	MU0712102	Medical microbiology I	3	2
second/ first course	MU0712106	Computer Sciences III	-	2
second/ first course	MU0712105	Ba'ath Crimes	1	-
second/ second course	MU0712201	Medical microbiology II	3	2
second/ second course	MU0712207	Computer science IV	-	2

Third / first course	MU0713102	Biochemistry 1	3	2
Third / first course	MU0713103	Physiology	3	2
Third / second course	MU0713203	Biochemistry 2	3	2
Fourth / first course	MU0714105	Public health	2	-
Fifth/ first course	MU0715102	Clinical chemistry	3	2
Fifth/ first course	MU0715106	Clinical laboratory training	-	4

60. Expected learning outcomes of the program	
Knowledge	
A1- Identify all sources of natural products and raw medicines. A2-Know Methods of extracting active ingredients. A3- Study of chemistry and biosynthesis. A4- Study of pharmacological effect and effectiveness.	
Skills	
B1 - Acquire skill in extraction methods B2 - Acquire skill in isolating active compounds B3 - Acquire skill in diagnosing separated compounds	
Ethics	

<p>C1- Think skills through translating, analyzing, evaluating, and extracting ideas.</p> <p>C2- Have Acceptance and response to dealing with medicinal plants in practical life.</p> <p>C3- Characterize and diagnose the clinical and toxic signs resulting from the effect of medicinal plants.</p>	
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61. Teaching and Learning Strategies

- | |
|--|
| <ol style="list-style-type: none">1. Self-learning2. Collaborative Learning3. Brainstorming4. Discussion5. Interactive Offers6. Lecture7. Project8. Interrogation |
|--|

62. Evaluation methods

- | |
|--|
| <ol style="list-style-type: none">1. Electronic and in-person written tests, depending on general circumstances.2. Oral exams3. Scientific reports4. Direct questions |
|--|

Professional Development

Mentoring new faculty members

New faculty are guided by providing training courses and workshops to enhance their academic skills and improve their abilities in teaching the subject of drugs and toxicology. In addition to enhancing academic guidance and helping determine the personal and professional goals of new faculty members. As well as providing opportunities to participate in research, publishing results, and guiding them in research activity.

In addition to enhancing communication and cooperation between new faculty members and more experienced members to transfer knowledge and experience and providing continuous training programs to update their pharmaceutical knowledge and teaching skills.

Professional development of faculty members

- ✓ Providing ongoing training courses and workshops to improve teaching skills, academic guidance, and update faculty members' knowledge.
- ✓ Promote academic and career guidance and provide personal support to set personal and professional goals and develop personal development plans.
- ✓ Encourage ongoing communication and collaboration between new and old faculty members and other colleagues to exchange knowledge and experiences.
- ✓ Encouraging participation in research and scientific publishing and providing support and resources to implement research and participate in scientific conferences to develop the level of scientific guidance.
- ✓ Evaluate the performance of faculty members, identify strengths and weaknesses, and provide customized training programs to develop teaching skills and academic guidance.
- ✓ Providing individual mentoring sessions to faculty members to help them achieve their personal and professional goals and develop promotion and professional development plans.

63. Acceptance Criterion

The student is accepted into the college within the central admission of the Ministry of Higher Education and Scientific Research

64. The most important sources of information about the program

The World Health Organization and various scientific sources, including books, the Internet, and the Committee of Deans of Colleges of Pharmacy in Iraq.

65. Program Development Plan

The plan seeks to understand laboratory analysis and its role in diagnosis by updating curricula with the latest technologies, providing training opportunities in clinical laboratories, and using comprehensive assessment methods.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First / First course	MU0711102	Human biology	basic	/	/	/	/	/	/	/	/	/	/	/	/
First / First course	MU0711103	Mathematics and biostatistics	basic	/	/	/	/	/	/	/	/	/	/	/	/
First / First course	MU0711107	Computer science	basic	/	/	/	/	/	/	/	/	/	/	/	/
First /second course	MU0711203	Medical physics	basic	/	/	/	/	/	/	/	/	/	/	/	/
First /second course	MU0711207	Computer science	basic	/	/	/	/	/	/	/	/	/	/	/	/
First /second course	MU0711204	Histology	basic	/	/	/	/	/	/	/	/	/	/	/	/

First /second course	MU0711205	Human anatomy	basic	/	/	/	/	/	/	/	/	/	/	/	/
First /second course	MU0711206	Human rights	basic	/	/	/	/	/	/	/	/	/	/	/	/
second/ first course	MU0712102	Medical microbiology I	basic	/	/	/	/	/	/	/	/	/	/	/	/
second/ first course	MU0712107	Computer science	basic	/	/	/	/	/	/	/	/	/	/	/	/
second/ first course	MU0712106	Democracy	basic	/	/	/	/	/	/	/	/	/	/	/	/
second/ second course	MU0712201	Medical microbiology II	basic	/	/	/	/	/	/	/	/	/	/	/	/
second/ second course	MU0712207	Computer science	basic	/	/	/	/	/	/	/	/	/	/	/	/
Third / first course	MU0713102	Biochemistry 1	basic	/	/	/	/	/	/	/	/	/	/	/	/

Third / first course	MU0713103	Physiology	basic												
Third / second course	MU0713203	Biochemistry 2	basic												
Fourth / first course	MU0714105	Public health	basic												
Fifth/ first course	MU0715102	Clinical chemistry	basic												
Fifth/ second course	MU0715207	Clinical laboratory training	basic												