

Bachelor in Pharmacy Pharm D - (Clinical Pharmacy) Program Specifications

University: Beni-Suef

Faculty: Pharmacy

Department: Bachelor in Pharmacy Pharm D - (Clinical Pharmacy) Program
(Year 2023/ 2024)

A- Basic information:

1- Program Name: Bachelor in pharmacy- (Clinical Pharmacy) Pharm D

2- Program type: (Single)

3- Departments (s):

- Department of Pharmaceutics
- Department of Pharmacognosy
- Department of Pharmacology & Toxicology
- Department of Pharmaceutical Microbiology & Immunology
- Department of Pharmaceutical Organic Chemistry
- Department of Pharmaceutical Analytical Chemistry
- Department of Biochemistry
- Department of Medicinal Chemistry
- Department of Clinical Pharmacy

4- Last date of program specification:

B- Specialized information:

1. Program Aims:

The graduates of the Faculty of Pharmacy, Beni-Suef University should acquire the necessary attributes related to various pharmacy aspects including drug-oriented and patient-oriented pharmacy disciplines to actively participate in pharmaceutical care. Pharmacy graduate must be able to:

1. Educate and counsel individuals and communities to participate in optimizing therapeutic outcomes and minimizing the incidence of illness of individuals and populations.
2. Practice and perform responsibilities and authorities legally, professionally, and ethically respecting patients' rights.

3. Utilize evidence-based data to deliver contemporary pharmaceutical products and pharmacy services.
4. Assure the quality of pharmaceutical materials and products.
5. Apply integrated evidence-based pharmaceutical and clinical information in assessing the appropriateness, effectiveness, and safety of medications.
6. Contribute effectively in planning and conducting research using appropriate methodologies.
7. Work collaboratively and share therapeutic decision-making as a member of an inter-professional health care team.
8. Demonstrate effective communication, leadership, business administration, and entrepreneurial skills.
9. Work as a life-long learner for continuous professional improvement and demonstrate capabilities of performance appraisal and self-assessment.

1. Learning Outcomes (LOs):

Domain 1- Fundamental Knowledge

1-1- Competency

Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.

1-1-1- Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.

1-1-2- Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.

1-1-3- Integrate knowledge from fundamental sciences to handle, identify, extract, design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical materials/products.

1-1-4- Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.

1-1-5- Retrieve information from fundamental sciences to solve therapeutic problems.

1-1-6- Utilize scientific literature and collect and interpret information to enhance professional decision.

1-1-7- Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.

Domain 2: Professional and Ethical Practice

2-1- Competency

Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.

2-1-1 Perform responsibilities and authorities in compliance with the legal and professional structure and role of all members of the health care professional team.

2-1-2 Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.

2-1-3 Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.

2-2- Competency

Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.

2-2-1 Isolate, design, identify, synthesize, purify, analyze, and standardize synthetic/natural pharmaceutical materials.

2-2-2 Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.

2-2-3 Recognize the principles of various tools and instruments and select the proper techniques for synthesis and analysis of different materials and production of pharmaceuticals.

2-2-4 Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and biopharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.

2-3- Competency

Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.

2-3-1 Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical field.

2-3-2 Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.

2-4- Competency

Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.

2-4-1 Ensure safe handling/use of poisons to avoid their harm to individuals and communities.

2-4-2 Demonstrate understanding of the first aid measures needed to save patient's life.

2-4-3 Take actions to solve any identified medicine-related and pharmaceutical care problems.

2-4-4 Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens.

2-5- Competency

Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.

2-5-1 Fulfill the requirements of the regulatory framework to authorize a medicinal product including quality, safety, and efficacy requirements.

2-5-2 Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.

2-5-3 Contribute in planning and conducting research studies using appropriate methodologies.

2-6- Competency

Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.

2-6-1 Apply the principles of business administration and management to ensure rational use of financial and human resources.

2-6-2 Utilize the principles of drug promotion, sales, marketing, accounting, and pharmacoeconomic analysis.

Domain 3: Pharmaceutical Care

3-1- Competency

Apply the principles of body functions to participate in improving health care services using evidence-based data.

3-1-1 Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.

3-1-2 Apply the principles of public health and pharmaceutical microbiology to select and assess proper methods of infection control.

3-1-3 Monitor and control microbial growth and carry out laboratory tests for identification of infections/diseases.

3-1-4 Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.

3-2- Competency

Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.

3-2-1 Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.

3-2-2 Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.

3-2-3 Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals.

3-2-4 Provide information about toxic profiles of drugs and other xenobiotics including sources, identification, symptoms, and management control.

3-2-5 Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.

3-2-6 Maintain public awareness on social health hazards of drug misuse and abuse.

Domain 4: Personal Practice

4-1- Competency

Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.

4-1-1 Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.

4-1-2 Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.

4-1-3 Demonstrate creativity and apply entrepreneurial skills within a simulated entrepreneurial activity.

4-2- Competency

Effectively communicate verbally, non-verbally and in writing with individuals and communities.

4-2-1 Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.

4-2-2 Use contemporary technologies and media to demonstrate effective presentation skills.

4-3- Competency

Express self-awareness and be a life-long learner for continuous professional improvement.

4-3-1 Perform self-assessment to enhance professional and personal competencies.

4-3-2 Practice independent learning needed for continuous professional development.

1. Academic standards: National Academic References (NARS 2017)

2. External references for standards (Benchmarks)

3. Curriculum Structure and Contents:

a) Program duration: 5+1 years divided in 10 semesters + 1 Internship year

b) Program Structure:

• No of hours per week :	Lectures		Lab./Exercise		Total	
	Compulsory	168	Elective	8	Optional	--

• University requirements:	6	3.3 %
• Faculty requirements:	162	92.3 %
• Elective courses:	8	4.4 %
• Other Courses:	--	0 %

• Practical/field training:	The student must complete a period of field training in private and government pharmacies and hospital pharmacies take place during the summer vacations for the school years after the end of The third level is 100 hours, in addition to the sixth year of study which is devoted to field training for a period of 36 weeks and is divided into six training courses, by at least four courses in hospitals that implement pharmacy practice clinical, and one course is devoted to training in the pharmaceutical field (manufacturing, supervision, pharmaceutical ... etc.), as explained in the training program, which includes a training program- integrated and systematic in a rotating periodic manner recorded in hours and training tasks and under Careful supervision of the college and training destination. It also offers a graduation project in a specific discipline contributes to preparing and preparing the student for this specialization. A graduate can work on this the field for a period of two years to become a specialized pharmacist able to provide pharmaceutical services clinical or different pharmaceutical practices. The training program is designed in different clinical specialties (such as: cardiology- Cancer Psychiatric and Neurological Diseases Nutrition Intensive Care Drug Information Unit, Pharmacoeconomics and clinical research.....) according to the university's capabilities and the community's need in- - University scope.
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c) Program Levels (in credit-hours system):

- First Level/ First Year: 34 credit hours distributed as follow:

Compulsory	34	Elective	--	Optional	--
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- Second Level/ Second Year: 34 credit hours distributed as follow:

Compulsory	34	Elective	--	Optional	--
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- Third Level/ Third Year: 35 credit hours distributed as follow:

Compulsory	35	Elective	--	Optional	--
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- Fourth Level/ Fourth Year: 36 credit hours distributed as follow:

Compulsory	32	Elective	4	Optional	--
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- Fifth Level/ Fifth Year: 37 credit hours distributed as follow:

Compulsory	33	Elective	4	Optional	--
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d) Program courses:

a. Compulsory:

	Course Code	Courses Title	Total credit hours	No. of hours'/ Week		Level	Semester
				Lecture	Lab.		
1.	PAC 101	Pharmaceutical Analytical Chemistry I	3	2	1	1	1
2.	POC 101	Pharmaceutical Organic Chemistry I	3	2	1	1	1
3.	PT 101	Pharmacy Orientation	1	1	0	1	1
4.	PG 101	Medicinal Plants	3	2	1	1	1
5.	MD 101	Medical Terminology	1	1	0	1	1
6.	EN 101	English Language	1	1	0	1	1
7.	NP 101	Information Technology	2	1	1	1	1
8.	MS 101	Mathematics	1	1	0	1	1
9.	NP 102	Human Rights and Fighting Corruption	1	1	0	1	1
10.	PAC 202	Pharmaceutical Analytical Chemistry II	3	2	1	1	2
11.	POC 202	Pharmaceutical Organic Chemistry II	3	2	1	1	2
12.	PM 201	Cell Biology	2	1	1	1	2
13.	MD 202	Anatomy& Histology	3	2	1	1	2
14.	PT 202	Physical Pharmacy	3	2	1	1	2
15.	PG 202	Pharmacognosy I	3	2	1	1	2
16.	MD 203	Psychology	1	1	0	1	2
17.	POC 303	Pharmaceutical Organic Chemistry-III	3	2	1	2	3
18.	PB301	Biochemistry I	3	2	1	2	3
19.	PG 303	Pharmacognosy II	3	2	1	2	3
20.	PO 301	Basic Pharmacology	3	2	1	2	3
21.	MD 303	Physiology and pathophysiology	2	2	0	2	3
22.	PT 303	Pharmaceutical dosage	3	2	1	2	3

	Course Code	Courses Title	Total credit hours	No. of hours'/ Week		Level	Semester
				Lecture	Lab.		
		forms I					
23.	PO 402	Pharmacology –I	3	2	1	2	4
24.	PM 402	General Microbiology and Immunology	3	2	1	2	4
25.	NP 403	Scientific writing and Communication skills	2	1	1	2	4
26.	MD 404	Pathology	2	2	0	2	4
27.	PT 404	Pharmaceutical Dosage Forms-II	3	2	1	2	4
28.	PB 402	Biochemistry II	3	2	1	2	4
29.	NP 404	Pharmacy Legislation and practice ethics	1	1	0	2	4
30.	PO 503	Pharmacology-II	3	2	1	3	5
31.	PM 503	Pharmaceutical Microbiology and Antimicrobials	3	2	1	3	5
32.	PM 504	Parasitology & Virology	3	2	1	3	5
33.	PT 505	Pharmaceutical Dosage Forms-III	3	2	1	3	5
34.	PG 504	Phytochemistry-I	3	2	1	3	5
35.	PP 501	Community Pharmacy Practice	3	2	1	3	5
36.	PO 604	Pharmacology-III	3	2	1	3	6
37.	PG 605	Phytochemistry-II	3	2	1	3	6
38.	PT 606	Pharmaceutical Technology	3	2	1	3	6
39.	PP 602	Hospital Pharmacy	3	2	1	3	6
40.	PP 603	Clinical Pharmacy Practice	3	2	1	3	6
41.	MD 605	First Aid and Basic Life Support (BLS)	2	1	1	3	6
42.	PMC 701	Medicinal Chemistry-I	3	2	1	4	7
43.	PP 704	Drug Information	2	1	1	4	7
44.	PT 707	Advanced Drug Delivery Systems	2	1	1	4	7
45.	PT 708	Biopharmaceutics and Pharmacokinetics	3	2	1	4	7
46.	PM 705	Medical Microbiology	3	2	1	4	7
47.	PAC 707	Quality Control of Pharmaceuticals	3	2	1	4	7
48.	PMC 802	Medicinal Chemistry-II	3	2	1	4	8
49.	PP 805	Management of Endocrine and Renal Disorders	2	1	1	4	8
50.	PP 806	Management of Oncological Diseases and Radiopharmacy	3	2	1	4	8
51.	PP 807	Clinical Pharmacokinetics	3	2	1	4	8
52.	PB 803	Clinical Biochemistry	3	2	1	4	8
53.	PM 806	Public Health and Preventive Medicine	2	2	0	4	8
54.	PO 905	Basic & clinical Toxicology	3	2	1	5	9

	Course Code	Courses Title	Total credit hours	No. of hours'/ Week		Level	Semester
				Lecture	Lab.		
55.	PP 908	Management of Neuropsychiatric Diseases	2	1	1	5	9
56.	PM 907	Biotechnology	3	2	1	5	9
57.	PG 906	Phytotherapy	3	2	1	5	9
58.	PP 909	Clinical Nutrition	2	1	1	5	9
59.	NP 905	Marketing & Pharmacoeconomics	2	2	0	5	9
60.	NP 906	Entrepreneurship	1	1	0	5	9
61.	PP 010	Management of Critical Care Patients	2	1	1	5	10
62.	PP 011	Management of Dermatological, Reproductive and Musculoskeletal Diseases	3	2	1	5	10
63.	PP 012	Management of Pediatric Diseases	3	2	1	5	10
64.	PP 013	Management of Cardiovascular Diseases	3	2	1	5	10
65.	PP 014	Management of Gastrointestinal Diseases	3	2	1	5	10
66.	PP 015	Management of Respiratory Diseases	2	1	1	5	10
67.	PP 016	Clinical Research and Pharmacovigilance	1	1	0	5	10

b. Elective courses:

	Code No.	Course Title	Total credit hours	No. of hours/week		Level	Semester
				Lect.	Lab.		
1.	PAC E04	Advanced Pharmaceutical Analysis	2	1	1	4/5	7/8/9/10
2.	PG E07	Complementary Therapies	2	1	1	4/5	7/8/9/10
3.	PG E08	Production and Manufacture of Medicinal Plants	2	1	1	4/5	7/8/9/10
4.	PG E09	Chromatography and Separation Techniques	2	1	1	4/5	7/8/9/10
5.	PG E10	Processing of Medicinal Plants	2	1	1	4/5	7/8/9/10
6.	PG E11	Aromatherapy and Herbal Cosmetics	2	1	1	4/5	7/8/9/10
7.	PG E12	Biotechnology of Medicinal Plants	2	1	1	4/5	7/8/9/10
8.	PM E08	Antibiotic Stewardship	2	1	1	4/5	7/8/9/10

9.	PM E09	Infection Control	2	1	1	4/5	7/8/9/10
10.	PM E10	Bioinformatics	2	1	1	4/5	7/8/9/10
11.	PMC E04	Drug Design	2	1	1	4/5	7/8/9/10
12.	PO E06	Veterinary Pharmacology	2	1	1	4/5	7/8/9/10
13.	PO E07	Biological Standardization	2	1	1	4/5	7/8/9/10
14.	POC E04	Advanced Drug Structural Determination	2	1	1	4/5	7/8/9/10
15.	PP E17	Geriatric pharmacotherapy	2	1	1	4/5	7/8/9/10
16.	PP E18	Interprofessional skills	2	1	1	4/5	7/8/9/10
17.	PP E19	Pharmacoeconomics	2	1	1	4/5	7/8/9/10
18.	PT E09	Veterinary Pharmacy	2	1	1	4/5	7/8/9/10
19.	PT E10	Advanced Pharmaceutical Technology	2	1	1	4/5	7/8/9/10
20.	PT E11	Medical Devices	2	1	1	4/5	7/8/9/10
21.	PT E12	Good Manufacturing Practices	2	1	1	4/5	7/8/9/10
22.	PT E13	Applied Industrial Pharmacy	2	1	1	4/5	7/8/9/10
23.	PT E14	Cosmetic Preparations	2	1	1	4/5	7/8/9/10
24.	PT E15	Drug Metabolism and Transport	2	1	1	4/5	7/8/9/10
25.	PT E16	Protein Pharmaceuticals	2	1	1	4/5	7/8/9/10

c. Optional: ----

4. Courses Contents:

See course specification

5. program admission requirements:

Same requirements of admission of classic program (School marks detected by Ministry of Higher Education) plus an admission application to clinical pharmacy program

6. Regulations for progression and program completion:

To be graduated, a student should earn 192 hours of course study for at least 5 years in addition to 100 hours of training in a hospital and pharmacy.

7. Assessment methods and rules for evaluation of program students:

No.	Method of assessment	Measurable ILOS
1	None graded assignment-Online quizzes	Fundamental Knowledge, Professional and Ethical Practice, Pharmaceutical care, Personal Practice
2	Written exam	Fundamental Knowledge, Professional and Ethical Practice, Pharmaceutical care
3	Oral exam	Fundamental Knowledge, Professional and Ethical Practice, Pharmaceutical care
4	Practical exam	Professional and Ethical Practice, Personal Practice
5	Class participation	Personal Practice
6	Term periodic exams	Knowledge and intellectual skills, Professional and Ethical Practice, Pharmaceutical care

8. Methods of evaluation of program:

No.	Evaluator	Tool	Sample
1	Senior Students	Questionnaire	25%
2	Alumni	Questionnaire	25%
3	Stakeholders - Business sector - Industry sector	Questionnaire	25%
4	External Evaluator(s) (External Examiner(s)) [if any]	Questionnaire	25%
5	Others	-	-

Program Coordinator: Assoc. Prof. Dr. Dali El Amir Mohamed

Signature:

Date: 9 / 2023