



**Faculty of Pharmacy**

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**Program Specification**

**Bachelor of Pharmacy**

**Pharm D Program**

**2020-2021**

PROGRAM COORDINATOR: PROF. DR. GOUDA HELAL



Faculty of Pharmacy

## Program Specification

### A- Basic Information:

**1- Program Title:** Bachelor of Pharmacy Pharm D Program

**2- Program type:** Single

**3- Departments responsible of the program:**

- a. PB - Department of Biochemistry
- b. PC - Department of Chemistry
- c. PG - Department of Pharmacognosy
- d. PM - Department of Microbiology and Immunology
- e. PO - Department of Pharmacology and Toxicology
- f. PP - Department of Pharmacy Practice
- g. PT - Department of Pharmaceutics and pharmaceutical Technology

Other University Requirement courses (Core program courses(O), Medical courses (MD) and Non Pharmaceutical (NP) courses are provided from faculties of Medicine, Arts and Business Administration.

**4- Date of approval of Program specification by the Faculty Council:**

Approved on 20/9/2020.

**5- Coordinator:** Prof. Dr. Gouda Helal, Dean of Faculty of Pharmacy.

**6- External evaluation:** Prof. Dr. Maha Abu Shadi, Ex-Vice Dean for Post Graduate Studies Affairs, Ex- Director of Quality Assurance Unit and Professor of Microbiology and Immunity, Faculty of Pharmacy (Girls), Al-Azhar University.

## **B- Professional Information:**

### **NARS Attributes of the Pharmacy Graduates:**

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 interprofessional 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- Program aims:**

The program of Bachelor of Pharmacy PharmD aims to give students the competencies to practice pharmacy at the time of graduation and encourage continuous self-learning hereafter in order to enrich the Egyptian pharmaceutical sector and society with capable and skilled pharmacists.

The program is aiming to:

1. Emphasizing on the pharmacist role in providing patient pharmaceutical care inside and outside hospitals by awareness and counseling people and communities in order to enhance the therapeutic results and decrease illness incidence beside practicing pharmacy with its responsibilities and policies in accordance to pharmaceutical laws and ethics and respecting patient rights. (1,2,3,5)
2. Involvement in community service and environment development and giving clear pharmacoeconomic benefits by diminution of drug usage. (1,8)
3. Graduating excellent pharmacist for community and private pharmacies as well as drug factories, companies, drug quality control laboratories and food analysis likewise in mass communication, marketing research and academic fields. (3,4,6,7,8)

4. Developing a pharmacist who uses evidence-based data to provide new pharmaceutical products and pharmaceutical services alongside being empowered by communication, leadership and management skills beside entrepreneurship. (3,8)
5. Increase competitive capabilities of graduates regionally by educational and training programs. (6,9)
6. Provide clear commitment by applying quality standards in pharmaceutical learning by interactive learning and emphasizing self-learning. (8,9)
7. Graduating life-learning pharmacist on the aim of sustainable development display performance evaluation and self-evaluation competences. (9)

**Matrix of Program Aims versus NARS 2017 attributes of pharmacy graduate:**

Aims	Attributes of graduates (NARS 2017)								
	1	2	3	4	5	6	7	8	9
1	X	X	X		X				
2	X							X	
3			X	X		X	X	X	
4			X					X	
5						X			X
6								X	X
7									X

**2- Program Learning Outcomes**

The program learning outcomes are derived from the competency-based NARS for Pharmacy Education -2017 (12 competencies for the four domains and their 42 key elements)

*N.B: Numbering system: first number stands for Domain; second number stands for Competency; third number stands for Key Element; fourth number stands for Program Learning Outcome.*

**Domain 1: Fundamental Knowledge**

1-1-1-1 Compile knowledge of basic, applied and pharmaceutical sciences in material preparation, standardization, formulation, and/or manufacture of products.

1-1-1-2 Demonstrate knowledge of biomedical, administrative clinical sciences, behavioral and social sciences to deliver population and patient centered care.

1-1-1-3 Demonstrate knowledge outline for writing skills in their field of specialization.

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

1-1-3-1 Recall knowledge for analysis and assuring quality of synthetic/natural pharmaceutical materials/products.

1-1-3-2 Integrate knowledge from fundamental sciences to handle, identify, extract, purify, standardize, synthetic/natural pharmaceutical materials/products.

1-1-3-3 Compile basic knowledge in the design, development, and preparation pharmaceutical materials/products.

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

1-1-5-1 Retrieve information from fundamental sciences and identify different cellular, anatomical, pathological and physiological human structures to solve therapeutic problems.

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

1-7-1-1 Identify and critically analyze information about newly emerging issues, as new discoveries, drugs, epidemics, social and cultural influencing the pharmaceutical industry and patient health care.

## **Domain 2: Professional and Ethical Practice**

2-1-1-1 Adopt the different roles and responsibilities of a pharmacist as a professional health care member to improve the quality of life for people and community.

2-1-1-2 Perform responsibilities and authorities in compliance with the legal and professional structure.

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

2-1-3-1 Make use of laws defining personal and professional limitations and accept referral or guidance from other members of the health care team.

2-2-1-1 Develop, analyze and determine synthetic/natural pharmaceutical materials.

2-2-1-2 Apply identification, isolation, purification and standardization procedures of synthetic/natural pharmaceutical materials.

2-2-1-3 Plan designing and synthesis of pharmaceutical materials from natural / synthetic origin.

2-2-1-4 Apply the principles of molecular modeling tools in computer aided drug design.

2-2-2-1 Apply the basic requirements of quality management systems in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/ products.

2-2-2-2 Inspect the effect of various incompatibilities on developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/ products.

2-2-3-1 Select the proper techniques for identification, synthesis, analysis of different materials, and production of pharmaceuticals, in addition to identification of the principles of tools and instruments.

2-2-3-2 Apply new techniques as molecular biology for production of pharmaceuticals and biopharmaceuticals.

2-2-4-1 Apply the principles of pharmaceutical calculations pharmacokinetics, and bio-pharmaceutics in new drug delivery systems.

2-2-4-2 Apply biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics in dose modification, bioequivalence studies, and pharmacy practice.

2-3-1-1 Select the proper methods for handling, identification, and disposal of different materials including chemicals, glassware, pathological samples and biotechnology-based materials used in the pharmaceutical field.

2-3-2-1 Apply handling and disposal of biologicals (including, experimental animals, cultures of microorganisms), and pharmaceutical materials/products according to ethical, legal, and safety guidelines.

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

2-4-2-1 Make use of first aid measures needed to save a patient's life.

2-4-3-1 Solve problems related to medicines and/or pharmaceutical care.

2-4-4-1 Assess toxicity profiles of different xenobiotics and Analyze poisons in biological specimens to effectively work in forensic field.

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

2-5-2-1 Recall, evaluate and interpret evidence-based information and formulate effective response needed in the pharmacy profession, based on systematic approaches.

2-5-3-1 Utilize appropriate methodologies in planning and conducting pharmaceutical research studies.

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

2-6-2-1 Utilize the principles of drug promotion, sales, marketing, accounting, and pharmacoeconomic analysis.

### **Domain 3: Pharmaceutical Care**

3-1-1-1 State the physiological pathways of normal and abnormal functions of human cells and body systems and their applications in treatment of different diseases.

3-1-1-2 Explain basis of genomics and their relation to different diseases and their therapeutic application.

3-1-1-3 Discuss the different biochemical pathways and their relation to different diseases to manage their treatment.

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

3-1-3-1 Analyze biological and non-biological specimens using different laboratory techniques and procedures.

3-1-3-2 Choose appropriate methods for monitoring and controlling microbial growth in different products.

3-1-3-3 Utilize different testing procedures for identification and classification of microorganisms and their infection control methods including immunization.

3-1-4-1 Selection of the proper treatment protocol based on etiology, epidemiology, pathophysiology, laboratory tests and clinical features.

3.1.4.2 Predict the proper herbal remedy for patients based on pathophysiology of the disease.

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

3-2-2-1 Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.

3-2-3-1 Justify safety measures in the use of complementary medicine, including phytotherapy, aromatherapy, and nutraceuticals, according to evidence-based information.

3-2-4-1 Assess drugs and xenobiotics toxicity profiles, including sources, identification, symptoms and management control.

3-2-5-1 Make use of information about safe and proper use of medicines including OTC preparations and medical devices in educating and counseling patients and communities.

3-2-6-1 Provide counseling information to the public on the health hazards associated with drug misuse and abuse.

#### **Domain 4: Personal Practice**

4-1-1-1 Demonstrate leadership skills in managing team performance and peer evaluation of other team members.

4-1-1-2 Illustrate time management skills.

4-1-2-1 Recall information from different sources to improve pharmacy practice.

4-1-2-2 Demonstrate critical thinking to solve problems and suggest a feasible solution for them.

4-1-2-3 Work autonomously and effectively in a team.

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

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

4-2-2-1 Use contemporary technologies and media to demonstrate effective presentation skills.

4-3-1-1 Make use of self-assessment, self-awareness to enhance professional and personal competencies.

4-3-2-1 Apply life-long independent learning needed for continuous professional development.

#### **3- Academic Standards:**

National academic references standards for pharmacy (NARS 2017) set by the National Authority for Quality Assurance and Accreditation of Education in Egypt (<https://naqaae.eg/wp-content/uploads/2014/10/NARS-Pharmacy-final-version.pdf>) were adopted as academic standards for the program (Faculty council No. 48 on 23<sup>rd</sup> of January 2019) Program outcomes vs. NARS key elements, and Program outcomes vs. Program courses association matrices were constructed (Appendices 1 and 2).



**4- External Reference Standards and bench marks :**

Not present.

**5- Program Structure and components:**

a. Program duration: **Six academic years (including training year).**

b. Curriculum structure

Credit hours: 181 credit hours

- Theoretical and practical credit hours distribution

Theoretical hours:	116	Practical hours:	65	Total	181
					Credit hours

- Mandatory and elective credit hours distribution

Mandatory hours:	171	Elective hours:	10	Total	181
Faculty Requirement	167	Faculty Requirement	8		175
University Requirement	4	University Requirement	2		6

**Suggested Program structure:**

		Number of subjects	Credit hours
1	Basic Sciences	11	24
2	Pharmaceutical Sciences	26	70
3	Medical Sciences	13	37
4	Pharmacy Practice	12	25
5	Health & environmental Sciences	6	10
6	Behavioral & Social Sciences	5	5
7	Pharmacy Management	2	4
8	University Requirements	6	6

## Faculty of Pharmacy (PharmD) Heliopolis University Curriculum Structure:

Faculty of Pharmacy, Heliopolis University			
Sciences	Subjects	Sciences	Subjects
<b>Basic</b>	Physical, organic and analytical chemistry, biology, biophysics, computer science, mathematics.	<b>Basic</b> <b>(24CHr/181CHr)</b>	Pharmaceutical Analytical Chemistry I Pharmaceutical Organic Chemistry I Information Technology Mathematics Pharmaceutical Analytical Chemistry II Pharmaceutical Organic Chemistry II Cell Biology Pharmaceutical Analytical Chemistry III Pharmaceutical Organic Chemistry III Academic English Writing 1 Academic English Writing 2
<b>Pharmaceutical</b>	Pharmacy Orientation, Medical & Pharmaceutical Terminology, Pharmaceutics, Physical Pharmacy, Industrial Pharmacy, Pharmaceutical Technology, Biopharmaceutics, Pharmacokinetics, Pharmaceutical Chemistry, Pharmacognosy, Pharmaceutical microbiology, Molecular biology, Pharmaceutical biotechnology, Quality Assurance And Quality Control, Instrumental Analysis, Biological Drug Assay.	<b>Pharmaceutical</b> <b>(70CHr/181CHr)</b>	Pharmacy Orientation Medicinal Plants Medical Terminology Physical Pharmacy Pharmacognosy I Pharmacognosy II Pharmaceutics I Instrumental Analysis Pharmaceutics II Pharmaceutical Microbiology Phytochemistry I Pharmaceutics III Medicinal Chemistry I Biopharmaceutics and Pharmacokinetics Phytochemistry II Pharmaceutics IV Medicinal Chemistry II Drug Design Pharmaceutical Technology I <b>Elective*</b> Pharmaceutical Technology II Biotechnology Phytotherapy and Aromatherapy Good Manufacturing Practice Quality Control of Pharmaceuticals Advanced Drug Delivery Systems

<b>Faculty of Pharmacy, Heliopolis University</b>			
<b>Sciences</b>	<b>Subjects</b>	<b>Sciences</b>	<b>Subjects</b>
<b>Medical</b>	Anatomy, Histology, Physiology, Pathology, Biochemistry, Parasitology, Pharmacology, Clinical Pharmacology, Therapeutics, Medical Microbiology, Immunology And Virology.	<b>Medical</b> <b>(37CHr/181CHr)</b>	Anatomy& Histology Physiology and Pathophysiology Biochemistry I General Microbiology and Immunology Pathology Biochemistry II Pharmacology I Parasitology and Virology Pharmacology II Medical Microbiology Pharmacology III <b>Elective *</b> Clinical Biochemistry
<b>Pharmacy Practice</b>	Pharmaceutical Care and Professional Pharmacy, (Clinical, Hospital, Community ...etc), Complementary and alternative medicine, Drug and poison Information, Pharmacy Laws and regulations.	<b>Pharmacy Practice</b> <b>(25CHr/181CHr)</b>	Scientific Writing and Research Methodology Pharmaceutical Legislations and Regulatory Affairs <b>Elective *</b> Drug Information Hospital Pharmacy Community Pharmacy Practice Clinical Pharmacokinetics Clinical pharmacy I Drug interaction Clinical Pharmacy II & Pharmacotherapy Clinical Research, Pharmacoepidemiology Pharmacovigilance <b>Elective *</b>
<b>Health And Environmental</b>	Public Health, Egyptian health system and its policies, Biostatistics, Healthy Life Style, Toxicology, Forensic Medicine, First Aid And Emergency Medicine	<b>Health And Environmental</b> <b>(10CHr/181CHr)</b>	Sustainable Development Biostatistics Applied & Forensic Pharmacognosy Basic & Clinical Toxicology Public Health First Aid

Faculty of Pharmacy, Heliopolis University			
Sciences	Subjects	Sciences	Subjects
<b>Behavioral and Social</b>	Psychology, Communications, Social and administrative pharmacy, Pharmacy Ethics.	<b>Behavioral and Social</b> <b>(5CHr/181CHr)</b>	Human Rights and Fighting Corruption Culture and History Communication skills Professional Ethics Psychology
<b>Pharmacy management</b>	Sales, Marketing And Drug Promotion, Pharmaceutical Business Administration, Pharmacoeconomics.	<b>Pharmacy management</b> <b>(4CHr/181CHr)</b>	Marketing & Pharmacoeconomics Creativity and Entrepreneurship
		<b>University Requirements (Core Program)</b> <b>(6CHr/181CHr)</b>	Perception Actuality Diversity Interaction Communication Through Art Art Creative Process University Requirement elective# University Requirement elective#

\* Selected course from faculty of pharmacy elective courses considering specified category.

# Selected course from university requirement elective courses considering specified category.

### c. Program Levels (5+1):

The study duration of the program is five years (five levels based on ten semesters) based on a credit hour system, followed by a year of advanced training in professional field (5+1). In Addition, there are 100 field training hours in community governmental and hospital pharmacies that should be accomplished during the summer vacations after the end of the third level and before the beginning of the advanced training year.

d. Program Courses:

**Table (1): Semester 1**

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Pharmaceutical Analytical Chemistry I	PC101	2	1	3	Registration	15	25	50	10	100	2
Pharmaceutical Organic Chemistry I	PC102	2	1	3	Registration	15	25	50	10	100	2
Pharmacy Orientation	PT101	1	-	1	Registration	20	--	80	--	100	1
Medicinal Plants	PG101	2	1	3	Registration	15	25	50	10	100	2
Medical Terminology	MD101	1	-	1	Registration	20	--	80	--	100	1
Information Technology	NP101	1	1	2	Registration	15	25	60	--	100	1
Human Rights and Fighting Corruption	NP102	1	-	1	Registration	20	--	80	--	100	1
Mathematics	NP103	1	-	1	Registration	20	--	80	--	100	1
Perception Actuality*	0211	-	1	1	Registration	20	30	50	--	100	1
<b>Total</b>		<b>11</b>	<b>5</b>	<b>16</b>							

○ *Lect.* = Lecture

○ *Period.* = Periodical

○ *Pract./ Tut.* = Practical / Tutorial

○ *Wr.* = Written

\*University requirement course

## Table (2): Semester 2

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Pharmaceutical Analytical Chemistry II	PC203	2	1	3	Pharmaceutical Analytical Chemistry I	15	25	50	10	100	2
Pharmaceutical Organic Chemistry II	PC204	2	1	3	Pharmaceutical Organic Chemistry-I	15	25	50	10	100	2
Cell Biology	PB201	1	1	2	Registration	15	25	50	10	100	1
Anatomy & Histology	MD202	2	1	3	Registration	15	25	60	-	100	2
Physical Pharmacy	PT202	2	1	3	Registration	15	25	50	10	100	2
Pharmacognosy I	PG202	2	1	3	Medicinal Plants	15	25	50	10	100	2
Diversity Interaction*	0222	-	1	1	Registration	20	30	50	--	100	1
<b>Total</b>		11	7	18							

○ **Lect.** = Lecture

○ **Period.** = Periodical

○ **Pract./ Tut.** = Practical / Tutorial

○ **Wr.** = Written

\*University requirement course

### Table (3): Semester 3

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Pharmaceutical Analytical Chemistry III	PC305	1	1	2	Pharmaceutical Analytical Chemistry-II	15	25	50	10	100	1
Pharmaceutical Organic Chemistry III	PC306	2	1	3	Pharmaceutical Organic Chemistry-II	15	25	50	10	100	2
Pharmacognosy II	PG303	2	1	3	Pharmacognosy-I	15	25	50	10	100	2
Physiology and Pathophysiology	MD303	2	1	3	Registration	15	25	50	10	100	2
Pharmaceutics I	PT303	2	1	3	Physical Pharmacy	15	25	50	10	100	2
Academic English Writing 1	NP304	1	-	1	Registration	20	--	80	--	100	1
Culture and History	NP30 <sup>o</sup>	1	-	1	Registration	20	--	80	--	100	1
Scientific Writing and Research Methodology	NP306	1	-	1	Registration	20	--	80	--	100	1
Sustainable Development	NP307	1	-	1	Registration	20	--	80	--	100	1
Communication Through Art	0233	-	1	1	Registration	20	30	50	--	100	1
<b>Total</b>		<b>13</b>	<b>6</b>	<b>19</b>							

⊙ Lect. = Lecture

⊙ Wr. = Written

⊙ Period. = Periodical

⊙ Pract./ Tut. = Practical / Tutorial

\*University requirement course

## Table (4): Semester 4

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Biochemistry I	PB402	2	1	3	Registration	15	25	50	10	100	2
General Microbiology and Immunology	PM401	2	1	3	Registration	15	25	50	10	100	2
Instrumental Analysis	PC407	2	1	3	Pharmaceutical Analytical Chemistry III	15	25	50	10	100	2
Pathology	MD404	1	1	2	Anatomy and Histology	15	25	50	10	100	1
Pharmaceutics II	PT404	2	1	3	Pharmaceutics I	15	25	50	10	100	2
Academic English Writing 2	NP 408	1	-	1	Academic English Writing1	20	--	80	--	100	1
Communication skills	NP409	-	1	1	Registration	20	30	50	--	100	1
Biostatistics	PO401	1	-	1	Registration	20	--	80	--	100	1
Psychology	MD405	1	-	1	Registration	20	--	80	--	100	1
Art Creative Process	0266	-	1	1	Registration	20	30	50	--	100	1
<b>Total</b>		<b>12</b>	<b>7</b>	<b>19</b>							

⊙ *Lect.* = Lecture

⊙ *Wr.* = Written

⊙ *Period.* = Periodical

⊙ *Pract./ Tut.* = Practical / Tutorial

\*University requirement course



## Table (5): Semester 5

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut	Wr.	Oral		
Biochemistry II	PB503	2	1	3	Biochemistry I	15	25	50	10	100	2
Pharmaceutical Microbiology	PM502	2	1	3	General Microbiology and Immunology	15	25	50	10	100	2
Phytochemistry I	PG504	2	1	3	Pharmacognosy II and Ph. Organic Chemistry II	15	25	50	10	100	2
Pharmaceutics III	PT505	2	1	3	Pharmaceutics II	15	25	50	10	100	2
Medicinal Chemistry I	PC508	2	1	3	Pharmaceutical organic III	15	25	50	10	100	2
Pharmacology I	PO502	2	1	3	Physiology & Pathophysiology	15	25	50	10	100	2
University Requirement elective*	--	-	1	1	Registration	20	30	50	--	100	1
<b>Total</b>		<b>12</b>	<b>7</b>	<b>19</b>							

○ **Lect.** = Lecture

○ **Period.** = Periodical

○ **Pract./ Tut.** = Practical / Tutorial

○ **Wr.** = Written

\*University requirement course

## Table (6): Semester 6

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Parasitology and Virology	PM 603	2	1	3	General Microbiology and Immunology	15	25	50	10	100	2
Biopharmaceutics and Pharmacokinetics	PT 606	2	1	3	Pharmaceutics III	15	25	50	10	100	2
Phytochemistry II	PG 605	2	1	3	Phytochemistry-I	15	25	50	10	100	2
Pharmaceutics IV	PT 607	2	1	3	Pharmaceutics III	15	25	50	10	100	2
Pharmacology II	PO 603	2	1	3	Pharmacology-1	15	25	50	10	100	2
Medicinal Chemistry II	PC 609	2	1	3	Medicinal Chemistry - I	15	25	50	10	100	2
University Requirement elective*	--	-	1	1	Registration	20	30	50	--	50	1
<b>Total</b>		<b>12</b>	<b>7</b>	<b>19</b>							

○ **Lect.** = Lecture

○ **Period.** = Periodical

○ **Pract./ Tut.** = Practical / Tutorial

○ **Wr.** = Written

**\*University requirement course**

## Table (7): Semester 7

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Medical Microbiology	PM704	2	1	3	Pharmaceutical Microbiology	15	25	50	10	100	2
Pharmacology III	PO704	2	1	3	Pharmacology II	15	25	50	10	100	2
Applied & Forensic Pharmacognosy	PG706	1	1	2	Phytochemistry II, Instrumental Analysis & Pharmacology II	15	25	50	10	100	1
Drug Design	PC710	1	1	2	Medicinal Chemistry II	15	25	50	10	100	1
Clinical Biochemistry	PB704	2	1	3	Biochemistry II	15	25	50	10	100	2
Pharmaceutical Technology I	PT708	2	1	3	Pharmaceutics IV	15	25	50	10	100	2
Pharmaceutical Legislations and Regulatory Affairs	NP710	1	-	1	Registration	20	--	80	--	100	1
Elective	PE---	1	1	2	Registration	15	25	60	---	100	1
<b>Total</b>		12	7	19							

⊙ *Lect.* = Lecture

⊙ *Wr.* = Written

⊙ *Period.* = Periodical

⊙ *Pract./ Tut.* = Practical / Tutorial

## Table (8): Semester 8

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Clinical Pharmacokinetics	PP801	2	1	3	Biopharmaceutics and Pharmacokinetics	15	25	50	10	100	2
Drug Information	PO805	1	1	2	Pharmacology III	15	25	50	10	100	1
Basic & Clinical Toxicology	PO806	2	1	3	Pharmacology III	15	25	50	10	100	2
Hospital Pharmacy	PP802	1	1	2	Pharmacology II Pharmaceutics IV	15	25	50	10	100	1
Pharmaceutical Technology II	PT809	2	1	3	Pharmaceutical Technology I	15	25	50	10	100	2
Community Pharmacy Practice	PP803	2	1	3	Pharmacology III	15	25	50	10	100	2
Elective	PE ---	1	1	2	Registration	15	25	60	---	100	1
<b>Total</b>		<b>11</b>	<b>7</b>	<b>18</b>							

○ **Lect.** = Lecture

○ **Period.** = Periodical

○ **Pract./ Tut.** = Practical / Tutorial

○ **Wr.** = Written

## Table (9): Semester 9

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Biotechnology	PM905	2	1	3	Pharmaceutical Microbiology	15	25	50	10	100	2
Clinical pharmacy I	PP904	2	1	3	Hospital Pharmacy	15	25	50	10	100	2
Public Health	PM906	2	-	2	Medical Microbiology	25	---	75	---	100	2
Phytotherapy and Aromatherapy	PG907	2	1	3	Phytochemistry II Pharmacology III	15	25	50	10	100	2
Good Manufacturing Practice	PT910	1	1	2	Pharmaceutical Technology II	15	25	50	10	100	1
Marketing & Pharmacoeconomics	NP911	2	--	2	Registration	25	---	75	---	100	2
Elective	PE ---	1	1	2	Registration	15	25	60	---	100	1
<b>Total</b>		<b>12</b>	<b>5</b>	<b>17</b>							

- **Lect.** = Lecture
- **Period.** = Periodical
- **Pract./ Tut.** = Practical / Tutorial
- **Wr.** = Written

**Table (10): Semester 10** (denoted by "0" in the code)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	Pract./Tut	Total		Period.	Pract./Tut.	Wr.	Oral		
Quality Control of Pharmaceuticals	PC011	2	1	3	Pharmaceutical Analytical Chemistry II Pharmaceutical Microbiology	15	25	50	10	100	2
First Aid	MD006	1	--	1	Pharmacology II	20	--	80	--	100	1
Drug interaction	PP005	1	1	2	Pharmacology III	15	25	50	10	100	1
Advanced Drug Delivery Systems	PT011	1	1	2	Pharmaceutics IV	15	25	50	10	100	1
Clinical Pharmacy II & Pharmacotherapeutics	PP006	1	1	2	Clinical Pharmacy I	15	25	50	10	100	1
Creativity and Entrepreneurship	NP012	1	1	2	Registration	15	25	50	10	100	1
Clinical Research, Pharmacoepidemiology and & Pharmacovigilance	PP007	1	1	2	Clinical pharmacy I	15	25	50	10	100	1
Professional Ethics	NP013	1	--	1	Registration	20	--	80	--	100	1
Elective	PE ---	1	1	2	Registration	15	25	60	--	100	1
<b>Total</b>		<b>10</b>	<b>7</b>	<b>17</b>						<b>850</b>	

⊙ *Lect.* = Lecture

⊙ *Wr.* = Written

⊙ *Period.* = Periodical

⊙ *Pract./ Tut.* = Practical / Tutorial

## **6- Courses Contents:**

As mentioned in course specifications and bylaw.

## **7- Program Requirements (according to Bylaws):**

Heliopolis University fully complies with the admission regulations of the Private Universities Council of the Ministry of Higher Education (HUSD). HUSD receives students twice a year; in the fall and spring semesters. Students must apply for admission during the official application period, which is announced by the University's Admission Office. Students applying for admission at a University faculty must meet the following requirements:

- 1- Should be Egyptian. Non-Egyptian students can also be accepted according to the related rules.
- 2- Must be graduated from the general secondary school or equivalent. Students join faculties through a competitive process, based mainly on the results of the secondary school Final Exam. It is also possible for graduate students to apply for admission.
- 3- Should pass the Admission Exam.
- 4- Must enroll as full-time student; otherwise the student must have permanent permission from his/her workplace to accommodate university attendance Policy.
- 5- All kinds of required fees must be paid in full.

Students wishing to join the faculties based on results of exam certificates as IGCSE or American Diploma or other similar certificates should have studied the courses necessary to allow them be admitted to the respective faculty as well as to have got the minimum grades that are specified by the HUSD that make such certificates equivalent to the general secondary level certificate.

## **8- Graduation requirements (Completion of program):**

### **- Graduation Minimum Credit Hours Required**

The minimum number of credit hours required for graduation as specified in the bylaw is 181 credit hours.

### **- Academic Program Curriculum**

The curriculum of all academic programs in the University includes the following group of courses:

- (a) University requirements (Mandatory Core Program): Is a group of 4 credit hours courses to develop the personality of students. They must be completed by all students as part of the graduation requirements for the chosen field of specialization.
- (b) University requirements (Elective Core Program): are 2 credit hours group of designated courses that students can select from in order to complete the university elective courses requirements in their program.

(c) Faculty Requirements: are offered by the faculty council and approved by the University Council. These requirements include a number of credit hours distributed over mandatory (167 credit hours) and elective ( 8 credit hours) courses as specified by the faculty bylaw.

### - Evaluations and Grades

Course Grade Points are calculated by the number of credit hours required for the course multiplied by the points corresponding to the final mark of the relevant course.

The cumulative GPA is calculated by dividing the Grade Point total by the total number of credit hours earned for all courses of the academic program, excluding the failed courses. In calculating the cumulative GPA, decimals beyond 2 places are truncated, and afterwards rounded up to one decimal place. The GPA may range from 0.0 to a 4.0.

The following table indicates how to convert a percentage into a 4.0 Grade Point Average (GPA).

التقدير	الرمز	عدد النقاط	النسبة المئوية
ممتاز	A <sup>+</sup>	٤	٩٥ فأكثر
	A	٣,٨٥	٩٥ لأقل من ٩٥
	A <sup>-</sup>	٣,٧	٩٥ لأقل من ٩٠
جيد جدا	B <sup>+</sup>	٣,٣	٨٥ لأقل من ٨٥
	B	٣	٨٢,٥ لأقل من ٨٢,٥
	B <sup>-</sup>	٢,٧	٧٧,٥ لأقل من ٧٧,٥
جيد	C <sup>+</sup>	٢,٣	٧٥ لأقل من ٧٥
	C	٢	٧٢,٥ لأقل من ٧٢,٥
	C <sup>-</sup>	١,٧	٦٧,٥ لأقل من ٦٧,٥
مقبول	D <sup>+</sup>	١,٣	٦٥ لأقل من ٦٥
	D	١	٦٢,٥ لأقل من ٦٢,٥
راسب	F	٠,٠٠	أقل من ٦٠
منسحب	W	-	منسحب



التقدير	الرمز	عدد النقاط	النسبة المئوية
غير مكتمل	I*	-	غير مكتمل
غائب	Abs E**	-	غائب

### Degree Requirements

Students awarded the Bachelor of Pharmacy- Pharm D after completing the following requirements:

1. The fulfillment of the minimum 181 credit hour in the program study plan as specified in the curriculum.
2. Achieving a final GPA grade of at least 1.0 in order to be awarded the relevant degree.

### 9- Assessment methods of the program:

Assessment method	Learning Outcomes being assessed related to
Written examination	Domain 1,3
Oral examination	Domain 1,3,4
Practical/Tutorial examinations	Domain 1,2,4
Periodical exams (quizzes, assignments, projects, presentations,...etc)	Domain 1,2,3,4
Online evaluation (if necessary)	Domain 1,2,3,4

### 10- Program Evaluation Methods:

	Evaluator	Method	Sample
1	Senior Students	Questionnaire and brain storming	Not less than 40%
2	Alumni	Questionnaire	Representative sample
3	Stakeholders	Questionnaire, meetings and discussions	Representative sample
4	Internal and external evaluators for program	Provide reports after site visit and document examination	2
5	Internal and external evaluators for courses	Provide reports after document examination	14
6	External examiner	Provide reports after examination	Committee

**Program Coordinator and Faculty Dean:**

**Name: Prof. Dr. Gouda Helal**

Signature: 

Date: 5/9/2019

Prepared concerning NAQAAE form No. 13

**Appendices:**

- 1. Program outcomes vs. NARS key elements matrix. (Attached)**
- 2. Program outcomes vs. Program courses. (Attached)**