

**Faculty of Pharmacy
Alexandria University**

**Postgraduate PharmD Programme
Programme Specification**

A. Basic information

1. Programme Title	Doctor in Pharmacy (PharmD)
2. Awarding Institution	Alexandria University
3. Teaching institution	Faculty of Pharmacy
4. Department	NA
5. Programme accredited by	NA
6. Duration of programme	Two years
7. Language of study	English
8. Academic Reference Standards	National Academic Reference Standards (NARS) for postgraduate studies, 1 st Edition, February 2009 (<i>National Authority for Quality Assurance and Accreditation</i>).
10. Last date of Specification revision	January 2014

B. Professional information

1. Programme Aims

- To provide hospitals, within the healthcare system in Egypt and in neighboring countries, with pharmacists capable of delivering quality clinical pharmacy services based on the philosophy of pharmaceutical patient care and health care team. The programme strives to ensure that graduates will have the professional skills necessary for the optimization of therapeutic outcomes that improve and maintain the patient's quality of life within the constraints of the health care system in Egypt.
- To provide pharmacists the opportunity to enhance their ability to provide quality pharmaceutical care in a hospital setting, and to develop the skills necessary for delivering clinical pharmacy services through a postgraduate 2-year programme. The programme is designed to offer the participants an effective learning experience with input from Pharmacy and Medicine academia as well as from University Hospital clinical experts.

2. Graduate Attributes

Graduates of the PharmD programme will be able to:

1. Develop professional and personal skills that enhance collaboration with other healthcare professionals and promote safe and effective medication use within the hospital.
2. Identify patients' needs, specify therapy goals and design an optimal individualized pharmacotherapy plan and a monitoring strategy.
3. Detect, prevent and resolve drug-therapy problems encountered in a hospital setting, using the analytical approach.
4. Provide drug information and education at the patient and health professionals levels
5. Participate in clinical research in the hospital, applying scientific research methodologies, and participate in practice-oriented surveys
6. Show commitment to life-long self learning.
7. Show commitment to professional ethics and integrity.
8. Demonstrate communication skills, decision-making skills, as well as leadership and management skills to formulate and implement plans for improved clinical services in the hospital.
9. Show commitment to society development and environment protection, particularly in areas of hospital waste handling.
10. Employ available resources within the hospital to maximum benefits.

3. Intended Learning Outcomes

A. Knowledge & Understanding:

After completing the programme, graduates will be able to:

- A1. Specify issues relevant to the practice of clinical pharmacy including pharmaceutical care and adherence to ethics among other issues.
- A2. Recall principles of pathophysiology and pharmacotherapeutics in different diseases.
- A3. Identify clinical pharmacokinetic principles applied in different patient populations.
- A4. Explain principles of pharmacoconomics and pharmacoepidemiology a.
- A5. Summarize novel therapy modalities to achieve better efficacy, safety and targeting.

B. Intellectual (thinking) skills

After completing the programme, graduates will be able to:

- B1. Select, critically evaluate and integrate drug information from the medical and pharmaceutical literature.
- B2. Evaluate clinical trials as basis for evidence-based medicine.
- B3. Assess the patient's health-related problems before deciding on a therapy plan.
- B4. Prepare and deliver a dissertation on a practice-related issue.
- B5. Integrate information from different disciplines to solve patient problems.
- B6. Evaluate the risk/benefit ratio in a therapy plan for a particular patient.

C. Professional skills

After completing the programme, graduates will be able to:

- C1. Propose a drug therapy plan based on patient specific data.
- C2. Analyze the patient's signs & symptoms as they relate to drug therapy.
- C3. Assess drug efficacy and safety through evaluation of appropriate physical & laboratory parameters.
- C4. Identify, prevent and solve drug-related problems.
- C5. Use information technology in retrieving updated drug information from different sources.

D. General & transferable skills

After completing the programme, graduates will be able to:

- D1. Demonstrate professional maturity, commitment and ethics.
- D2. Communicate effectively with patients and other health care practitioners.
- D3. Exercise sound judgment when cooperating with health care team in deciding on optimal drug therapy.
- D4. Develop professional relationships with patients and other health care practitioners.
- D5. Exercise self assessment, time management and continuous self learning as well as identify personal education needs.
- D6. Work in a team and to show leadership when needed.
- D7. Provide drug information, promote public health and participate in education activities as well as set parameters for performance evaluation of clinical pharmacists.

4. Academic Standards

4.a- The academic standards for the faculty PharmD programme have been referred to the National Academic Reference Standards (NARS) for Postgraduate Studies, 1st Edition, February 2009, issued by the National Authority for Quality Assurance & accreditation of education.

4.2- Comparison of the academic characteristics of the faculty PharmD programme with the adopted academic reference standards:

Comparison of faculty PharmD programme graduate attributes with those of NARS

Program↓	NARS→												
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11	1.12	
1						■							
2				■									
3		■			■								
4			■										
5	■												
6													■
7												■	
8							■	■					
9										■			
10									■				

Comparison of faculty PharmD programme ILOs with NARS ILOs

NARS	Faculty PharmD ILOs				
Knowledge & understanding	A1	A2	A3	A4	A5
2.1.1		■	■	■	
2.1.2					■
2.1.3				■	
3.1.4	■				
2.1.5	■				
2.1.6	■				

NARS	Faculty PharmD ILOs					
Intellectual Skills	B1	B2	B3	B4	B5	B6
2.2.1	■					
2.2.2			■			
2.2.3					■	
2.2.4				■		
2.2.5						■
2.2.6			■			
2.2.7			■			
2.2.8		■				

NARS	Faculty PharmD ILOs				
Professional Skills	C1	C2	C3	C4	C5* (see footnote)
2.3.1	■	■	■	■	
2.3.2			■		
2.3.3			■		

NARS	Faculty PharmD ILOs						
General Skills	D1	D2	D3	D4	D5	D6	D7
2.4.1		■					
2.4.2*							
2.4.3					■		
2.4.4*							
2.4.5							■
2.4.6						■	
2.4.7					■		
2.4.8					■		

*NARS general skills 2.4.2 & 2.4.4. correspond to C5 in PharmD programme professional skills

Matrix for comparing graduate attributes of PharmD programme with ILOs of PharmD courses:

Graduate attributes →	Course Code	1	2	3	4	5	6	7	8	9	10
		Courses↓									
Core courses:											
Basic Clin. Pharmacy I	901										
Pharmacotherapeutics I	902										
Clinical Lab Investig.	903										
Pharmacotherapeutics II	904										
Basic Clin. Pharmacy II	905										
Pharmacoepidemiology	906										
Pharmacotherapeutics III	907										
Clinical Pharmacok. I	908										
Pharmacotherapeutics IV	909										
Clinical Pharmacok. II	910										
Pharmacoeconomics	911										
Elective courses:											
Prof. communic. Skills	912										
Blood products, plasma..	913										
Rational use of antibiot.	914										
Enteral & TPN	915										
Pharmacok. drug monitor	916										
Critical Care pharmacy	917										
Disp. of sterile prod.	918										
Personalized medicine	919										
Other programme components:											
Dissertation	920										
Hospital Training I	921										
Seminar	922										
Hospital Training II	923										

Matrix for comparing ILOs of PharmD programme with ILOs of PharmD courses:

Program →	Code	A	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D	D	D	D
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Courses ↓		1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	7
Core courses:																								
Basic Clin. Pharmacy I	901																							
Pharmacotherapeutics I	902																							
Clinical Lab Investig.	903																							
Pharmacotherapeutics II	904																							
Basic Clin. PharmacyII	905																							
Pharmacoepidemiology	906																							
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Hospital Training II	923																							

5. Programme structure

a) Programme duration: A minimum of two years.

b) Programme structure: A total of 38 credit hours are required for completion of this programme. The programme includes 26 credit hours of courses, 8 credit hours of supervised hospital training (involving 8 specialties/ two weeks rotations) and 4 credit hours of dissertation and seminar.

6. Teaching and assessment strategies

Knowledge & understanding are acquired through didactic lectures, and group discussions. Skills are mainly acquired during hospital training through ward rotations, patient cases development and pharmacist interventions.

Communication skills are acquired through oral student presentations including dissertation presentation. Information retrieval and analysis of information skills are acquired through dissertation preparation.

Assessment methods include written exams, evaluation of student's written assignments and oral presentations, evaluation of student dissertation and evaluation of hospital training outcomes.

7. Programme courses

First year, fall semester

No.	Course title	Credit hours	Code No.
1	Basic clinical pharmacy I	2	0900901
2	Pharmacotherapeutics I	2	0900902
3	Clinical lab investigations	2	0900903
4	Elective course	1	

First year, spring semester

No.	Course title	Credit hours	Code No.
5	Pharmacotherapeutics II	2	0900904
6	Basic clinical pharmacy II	2	0900905
7	Pharmacoepidemiology	2	0900906
8	Elective vourse	1	

Second year, fall semester

No.	Course title	Credit hours	Code No.
9	Pharmacotherapeutics III	2	0900907
10	Clinical pharmacokinetics I	2	0900908
11	Elective course	1	
12	Dissertation	2	0900920
13	Hospital training I	4	0900921

Second year, spring semester

No.	Course title	Credit hours	Code No.
14	Pharmacotherapeutics IV	2	0900909
15	Clinical pharmacokinetics II	2	0900910
16	Pharmacoeconomics	2	0900911
17	Elective course	1	
18	Seminar	2	0900922
19	Hospital training II	4	0900923

Elective courses

No.	Course title	Credit hours	Code No.
1	Professional communication skills for clinical pharmacy practice	1	0900912
2	Blood products, plasma expanders and haemostatics	1	0900913
3	Rational use of antibiotics	1	0900914
4	Enteral and total parenteral nutrition	1	0900915
5	Pharmacokinetic drug monitoring	1	0900916
6	Critical care pharmacy	1	0900917
7	Dispensing of sterile products and cytotoxic drugs	1	0900918
8	Personalized medicine	1	0900919

8- Registration and Progression requirements

Rule 5: General rules of registration in postgraduate programmes (from faculty bylaws)

- 1- Any student holding a Bachelor's Degree from a university approved by the Universities higher council can apply for registration in postgraduate programmes, on condition of fulfilling the admission requirements for each programme.
- 2- The student should fulfill the scientific department requirements (if any) and should obtain the approval of both the department and Faculty councils.
- 3- The student should present the documents and fill the forms required by the postgraduate studies office.
- 4- The student selects the suitable courses by filling a registration form that should be signed by the academic advisor and the department head.
- 5- The student is not admitted in any course until he pays the tuition fees.
- 6- Registration is mandatory for a student to attend courses.

- 7- The student should register before the end of week 2 for the fall and spring semesters and week 1 for the summer semester.

General rules for the Doctor in Pharmacy (Pharm D) Programme:

In addition to rule 5, the following is required for registration and progression for the Pharm D programme:

- 1- The student should have obtained a Bachelor's Degree in Pharmaceutical Science with at least "good" cumulative grade and should be practicing hospital pharmacy at the time of admission.
- 2- At the end of the Pharm D programme, the student's CGPA should be at least C+, otherwise he should repeat courses to improve his CGPA.
- 3- The student fulfilling all the degree requirements, including courses, clinical training in one of the university educational hospitals and dissertation preparation and presentation is granted the Pharm D Degree.

- 9- Evaluation of programme intended learning outcomes:

Evaluator	Tool	Sample
1- Practicing clinical pharmacists	Open discussions	Several Yearly
3- External Evaluator(s)	Questionnaire	1
4- Other	Peer-reviewers visits	May 2010, Sept. 2010, May 2012

**Appendix
Course specifications**