

## Summer Training

<b>Program (s) on which the course is given:</b>	Bachelor of Pharmacy
<b>Department offering the program:</b>	All Faculty Departments
<b>Department offering the course:</b>	Pharmaceutics and Pharmaceutical Technology Department Pharmacy Practice and Clinical Pharmacy
<b>Academic year:</b>	2020/2021
<b>Approval Date:</b>	September 2020

### A. Basic Information

- **Course Title: Summer training.**
- **Students' Level/Semester: Levels 3, 4, 5**
- **Actual Training Hours: 300**
  - **Hospital and Clinical pharmacy: 80 hrs.**
  - **Community pharmacy: 80 hrs.**
  - **Pharmaceutical industry: 80 hrs.**
  - **Miscellaneous: 60 hrs., For example:**
    - a) Drug information center
    - b) Experimental research project
    - c) Drug marketing

### B. Professional Information

#### 1. Overall Aim of Course

The aim of the summer training is to provide students with field practice to acquire professional and practical skills required to start their career proficiently as soon as they graduate. Also, it aims to gain experience in various fields including outpatient and inpatient prescribing practices, prescription problems, communication and counseling skills, preparation and dispensing of prescribed products, recommending over the counter products and pharmacy management, handling of cytotoxic drugs, laboratory data review, intravenous admixture, communicating with other healthcare providers and reporting of adverse drug reactions. The student will acquire experience in Good Manufacturing Practice (GMP) concepts in production processes, packaging and labelling, quality assurance measures during the manufacture process, quality control testing after production (pharmacopoeial and regulatory requirements) as well as research and development activities. Moreover, the students will learn to follow a systematic approach to address medication information needs via effective searching, retrieving, evaluation of the literature, appropriate communication and tailoring of the information to the patient care

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situation. Also, the summer training can cover designing of a clinical research, critical appraisal of scientific articles and research papers. Finally, the student will induce sales of pharmaceutical drugs through a variety of promotional strategies.

### 2. Learning Outcomes:

<b>DOMAIN 1- FUNDAMENTAL KNOWLEDGE</b>		
<b>Competency</b>	<b>Key elements (Program Learning Outcomes)</b>	<b>Course learning outcomes</b>
1-1 Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care	1-1-6- Utilize scientific literature, and collect and interpret information to enhance professional decision	1- Retrieve and evaluate medication information by searching of the literature. 2- Differentiate between misleading and truthful advertising information on drugs. 3- Demonstrate planning policies for treatment as well as prophylaxis measure for each disease.
<b>DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE</b>		
<b>Competency</b>	<b>Key elements</b>	<b>Course learning outcomes</b>
2-1 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.	4- Perform responsibilities for own actions and decisions
	2-1-2 Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity	5- Demonstrates professional integrity by practicing within personal limits of knowledge, skills and abilities 6- Respect patients' rights and confidentiality of their data.
	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	7- Refer to other health care team members when needed.
2-2 Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines	2-2-2 Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/ products considering various incompatibilities	8- Implement the basic requirements of quality management system in storing, and distributing pharmaceutical products 9- Apply the rules of quality management system in manufacturing process
	2-2-4 Adopt the principles of pharmaceutical calculations,	10- Utilizes bio statistical analysis, bioinformatics, pharmacokinetics,

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	biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice	and bio-pharmaceutics in new drug delivery systems
2-3 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	11- Participate in the process of handling and disposal of biologicals, synthetic/natural materials, 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	12- Participate in ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/ products
2-4 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.	2-4-3 Take actions to solve any identified medicine-related and pharmaceutical care problems	13- Resolve emerging medicine-related and pharmaceutical care problems.
2-6 Perform pharmaco-economic analysis and develop promotion, sales, marketing, and business administration skills.	2-6-2 Utilize the principles of drug promotion, sales, marketing, accounting, and pharmaco-economic analysis.	14- Apply the principles of drug promotion, sales, marketing and Pharmaco-economic analysis
<b>DOMAIN 3: PHARMACEUTICAL CARE</b>		
3-1 Apply the principles of body functions to participate in improving health care services using evidence-based data	3-1-3 Monitor and control microbial growth and carry out laboratory tests for identification of infections/disease.	15- Implement effective methods for infectious diseases 16- Review patient laboratory data
	3-1-4 Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches	17- Correlate the treatment of infectious diseases to the etiological agents.

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<p>3-2 Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices</p>	<p>3-2-1 Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.</p>	<p>18- Calculate and prepare dosage appropriate to patient age, weight and condition. 19- Identify medication to be safely given without Drug/Drug interaction.</p>
	<p>3-2-2 Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices</p>	<p>20- Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs and medical devices in various disease conditions. 21- Advise patients and other health care professional about rational use of medicine, safe and proper use of medicines.</p>
	<p>3-2-3 Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals</p>	<p>22- Design patient care plan to meet drug-related needs. 23- Recommend non-pharmacological treatment for management of diseases.</p>
	<p>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</p>	<p>24- Interact with all health care professionals to ensure safe &amp; proper uses of medicines. 25- Practice counselling for patient regarding the correct use of medications, devices and their potential adverse effects.</p>
	<p>3-2-6 Maintain public awareness on social health hazards of drug misuse and abuse</p>	<p>26- Promote public awareness on drug misuse and abuse. 27- Raise awareness on the social hazards of drug misuse and abuse.</p>
<p><b>DOMAIN 4: PERSONAL PRACTICE</b></p>		
<p>4-1 Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills</p>	<p>4-1-2 Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team</p>	<p>28- Work independently and effectively in a team. 29- Explore and critically analyze information, identify and solve problems</p>
<p>4-2 Effectively communicate verbally, non-verbally and in writing with individuals and communities</p>	<p>4-2-1 Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities</p>	<p>30- Communicate effectively verbally and non-verbally with professional health care team.</p>
<p>4-3 Express self-awareness and be a life-long learner for continuous professional improvement</p>	<p>4-3-2 Practice independent learning needed for continuous professional development</p>	<p>31- Be a life-long learner for continuous professional development.</p>

**C. Training log book**

**- Community Pharmacy Training**

<b>Topic</b>	<b>No. of hours</b>	<b>Trainer</b>	<b>Academic supervisor</b>
<b>Orientation</b>	<b>8</b>		
<b>Patient counseling &amp; communication skills</b>	<b>16</b>		
<b>OTC prescription URT</b>	<b>12</b>		
<b>OTC prescription GIT</b>	<b>12</b>		
<b>OTC prescription CNS &amp; skin</b>	<b>12</b>		
<b>Devices</b>	<b>12</b>		
<b>Cosmetics</b>	<b>8</b>		
<b>Total hours</b>	<b>80</b>		

- **Hospital Pharmacy Training:**

<b>Topic</b>	<b>No. of hours</b>	<b>Trainer</b>	<b>Academic supervisor</b>
<b>Orientation</b>	<b>4</b>		
<b>Inpatient &amp; outpatient counseling</b>	<b>4</b>		
<b>Handling of cytotoxic drugs</b>	<b>4</b>		
<b>IV admixtures &amp; TPN</b>	<b>6</b>		
<b>Evaluate prescription orders &amp; reporting medication errors</b>	<b>6</b>		
<b>Identify &amp; resolve prescription problems</b>	<b>8</b>		
<b>Inventory management &amp; Demonstrating the use of medical devices and accessories</b>	<b>8</b>		
<b>Total hours</b>	<b>40</b>		

- **Clinical Pharmacy Training:**

<b>Topic</b>	<b>No. of hours</b>	<b>Trainer</b>	<b>Academic supervisor</b>
<b>Interview patients &amp; history taking</b>	<b>4</b>		
<b>Prescription monitoring and review</b>	<b>4</b>		
<b>Develop pharmaceutical care plan &amp; recommend treatment changes</b>	<b>8</b>		
<b>Prevent, detect, and manage of adverse reactions</b>	<b>6</b>		
<b>Therapeutic medication monitoring</b>	<b>8</b>		
<b>Patient medicine education</b>	<b>4</b>		
<b>Prevent, detect, and manage of drug-drug interaction</b>	<b>6</b>		
<b>Total hours</b>	<b>40</b>		

- **Industrial Pharmaceutical Training:**

Topic	No. of hours	Trainer	Academic supervisor
<b><u>Theoretical:</u></b>			
- Introduction to Pharmaceutical formulations	8		
- Semisolid dosage forms	8		
- Evaluation of semisolid dosage forms	8		
- Liquid dosage forms	8		
- Evaluation of liquid dosage forms	8		
<b><u>Practical:</u></b>			
- Semisolid dosage preparations (Cold soap – Lotion bar – Lip balm – Bath bombs – Gels - Creams)	20		
- Liquid dosage preparations (Dettol – foaming shower – Mouthwash)	20		
<b>Total hours</b>	<b>80</b>		



**Miscellaneous Training:**

Topic	No. of hours	Trainer	Academic supervisor
<b>Total hours</b>	<b>60</b>		

**D. Training facilities: for examples**

- Hospitals: (Naser Institute, Cairo University Hospitals, National Cardiology Institute, Ahmed Maher Teaching Hospital, 57357 Hospital, Dar El Shefaaa Hospital, Bolak El Dakror Hospital, The National Institute for Diabetes and endocrinology, The National Hepatology and Tropical Medicine Research Institute).
- Community Pharmacy Retail: El Ezabby Pharmacies, Dalmar and Attallah Pharmacies, Seif Pharmacies, Masr Pharmacies, Roshdy Pharmacies).
- Drug Information (Center Cairo University, Ain Shams University, The National hepatology and tropical medicine research institute).
- FUE Research Laboratory.
- Pharmaceutical Companies.

**E. Student Assessment Methods**

- Log book
- Evaluation rubric at the end of each training period (at the training site)
- Certificate of completion
- Approval of Academic supervisor of summer training (Pass/Fail)

**Clinical Training Coordinator: Prof. Dr. Ebtissam Darwish**

**Head of Department: Prof. Dr. Ehab Rasmy**

**Pharmaceutical Technology Training Coordinator: Dr. Amira Ghoneim**

**Head of Department: Prof. Dr. Dalia Samuel**

**Date: September 2020**

Accredited by NAQAAE

### Course Specifications

Matrix for Course Contents (Course LO's) & (Assessment of Teaching and Learning Methods)

Contents	Competencies															Assessment Methods			
	1-1	2-1		2-2	2-3		2-4	3-1		3-2			4-1	4-2	4-3	Log Book	Evaluation rubric at the end of the training period	Certificate of completion	Approval of Academic Supervisor (Pass/Fail)
	Key elements																		
1-1-6	2-1-1	2-1-2	2-1-3	2-2-2	2-2-4	2-3-1	2-3-2	2-4-3	3-1-3	3-1-4	3-2-1	3-2-2	3-2-3	3-2-5	3-2-6				
Course Learning Outcomes																			
	1,2,3	4	5,6	7	8,9	10	11	12	13	14,15	16	17,18	19,20	21,22	23,24	25,26	27,28	29	30,31
Community Pharmacy training	✓	✓	✓	✓					✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Hospital Pharmacy training		✓	✓	✓		✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Clinical Pharmacy training	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industrial Pharmaceutical training					✓		✓	✓										✓	✓
Miscellaneous	✓									✓					✓	✓	✓	✓	✓