

**LIU**

Lebanese International University  
School of Pharmacy

# Domains, Competencies & Program Learning Outcomes **(PLOs)**





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## Domain 1

# Foundational Knowledge

The program equips the graduates to achieve understanding of established and evolving biomedical, pharmaceutical, clinical, social, behavioral sciences and demonstrate the ability to identify and assess new information relevant to a question and to apply this to clinical problem knowledge solving.



## Competency

### 1.1 Learner

Develop, integrate, and apply knowledge from the foundational sciences (i.e., biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

## Learning Outcomes

Pharmacy graduates will be able to:

- 1.1.1 Recall extensive knowledge of medicine (e.g., pathophysiology, microbiology and mechanisms of diseases/disorders, clinical signs, symptoms, diagnostic tests, and natural history of disease).
- 1.1.2 Understand and assess knowledge related to patient care.
- 1.1.3 Assess patient's laboratory tests and diagnostics in accordance with established standards, counsel and monitor patient use of non-prescription drugs and medicinal herbs.
- 1.1.4 Recite in-depth knowledge of pharmacology and pharmacotherapy and the scientific/clinical evidence that forms the basis for rational drug therapy.
- 1.1.5 Demonstrate a satisfactory knowledge of medication dispensing, storage, supply, administration, compatibility, adverse drug effects, and basic compounding.
- 1.1.6 Apply knowledge in foundational sciences to make therapeutic decisions, evaluate advances in medicine, support health and wellness initiatives, and operate contemporary pharmacy services.
- 1.1.7 Appraise scientific literature related to drugs and disease to enhance clinical reasoning.
- 1.1.8 Practice community pharmacy, dispense prescriptions accurately and safely, and demonstrate social/behavioral and economic skills along with administrative capabilities.

## Domain 2

# Pharmaceutical Care

The program equips the graduates with the knowledge to assess medication use based on evidence-based medicine and rely on patient profile; compound and choose the correct dosage form and dispense medications while counseling patients.



## Competencies

### 2.1 Assessment of Medicines

Identify drug information and manage patient-centered care problems by applying clinical skills.

### 2.2 Compounding Medicines

Choose the appropriate dosage form based on patient's disease, preference and drug selection, in addition to pharmaceutical products preparation.

### 2.3 Dispensing

Dispense medications for patients in safe and effective ways by assuring accurate medication prescription, counseling patients and avoiding drug related problems and errors.

## Learning Outcomes

Pharmacy graduates will be able to:

- 2.1.1 Know the physiochemical and biochemical properties of medications.
- 2.1.2 Identify medicine-medicine interactions; medicine-disease interaction; medicine-food interaction.
- 2.2.1 Determine a proper formulation for a given dosage form.
- 2.2.2 Perform pharmaceutical calculations accurately.
- 2.2.3 Know the principles for the drug development and formulation of different pharmaceutical dosage forms.
- 2.2.4 Determine drug stability and expected shelf life of different pharmaceutical dosage forms.
- 2.2.5 Be familiar with quality assurance and quality control principles.
- 2.2.6 Choose the appropriate route of administration and dosage form for a drug based on pharmaceutical knowledge.
- 2.2.7 Demonstrate technical skills to prepare pharmaceutical products appropriate for a given formulation.
- 2.2.8 Counsel patients on the use of compounded dosage forms.
- 2.2.9 Prepare pharmaceutical products based on local standard operating procedures (SOPs), guidelines, or good manufacturing practice (GMP) as appropriate.
- 2.3.1 Dispense medications accurately to patients in a safe manner according to professional judgment and up to date clinical knowledge.
- 2.3.2 Appropriately validate defective or substandard medicines to the appropriate authorities.
- 2.3.3 Conduct a drug utilization review, patient counseling and maintaining patient record based on Omnibus Budget Reconciliation Act (OBRA 90).
- 2.3.4 Appropriately validate prescriptions, ensuring that prescriptions are correctly interpreted and legal.
- 2.3.5 Document and act upon dispensing errors.
- 2.3.6 Label the medicines (with the required and appropriate information).
- 2.3.7 Dispense medications and devices.
- 2.3.8 Implement and maintain a dispensing error reporting system and a 'near misses' reporting system.
- 2.3.9 Learn from and act upon previous 'near misses' and 'dispensing errors'.

Domain 3

# Essentials for Practice & Care

The program equips graduates to utilize all available resources in order to provide and optimize patient centered care. In addition, the program will help the students to know how to promote patient and population health.

## Competencies

### 3.1 Patient-Centered Care

Provide individualized, evidence based, and patient centered care as the medication expert of the healthcare team or when communicating with patients

## Learning Outcomes

Pharmacy graduates will be able to:

- 3.1.1 Collect and interpret all necessary subjective and objective data including patient history, physical assessment, laboratory test results and allergies from patient medication profiles and other resources.
- 3.1.2 Identify and prioritize pharmacotherapy and pharmaceutical needs.
- 3.1.3 Generate an appropriate individualized plan based on the most updated evidence.
- 3.1.4 Interpret pharmacokinetic parameters to calculate appropriate doses.
- 3.1.5 Evaluate the data and propose the most effective therapeutic options for the patients.
- 3.1.6 Recommend appropriate monitoring parameters for both safety and efficacy.
- 3.1.7 Formulate a follow up contact with patients to evaluate the effectiveness of the care plan.
- 3.1.8 Educate patients, caregivers and other healthcare team members to provide optimal care regarding prescription medications, nonprescription medications, and the proper use of medical devices.
- 3.1.9 Consult patients for the symptoms, signs and management of medication side effects.

### 3.2 Medication Use Systems Management

Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

### 3.3 Promoter & Care Provider

Promote health and wellness at both individual and community level Care. And describe how population-based care influences patient-centered care, the development of practice guidelines and evidence-based best practices.

- 3.2.1 Identify, describe, and implement the duties of pharmacists in each component of medication use system (procurement, storage, prescribing, transcription, dispensing, administration, monitoring documentation, and outcome) in different practice settings.
- 3.2.2 Utilize the technology available to optimize the efficacy and safety of the medication use system.
- 3.2.3 Recognize all of the available resources including human, financial, and physical resources to optimize the medication use system.
- 3.2.4 Understand the importance to contribute to the development, implementation, maintenance and training of staff on standard operating procedures, as appropriate to their level of responsibilities.
- 3.2.5 Recognize quality as a core principle of medicines management and healthcare provision.
- 3.2.6 Identify and evaluate the evidence base to improve the use of medicines and services, including risk management.
- 3.2.7 Employ standards, guidelines, best practices, and established processes related to safe and effective medication use.
- 3.2.8 Implement a system for documentation and record keeping.
- 3.2.9 Demonstrate awareness of different pharmaco-economic aspects and financial management relating to pharmacy practice.
- 3.2.10 Understand the role of policies and procedures in the organizational structure and in the provision of healthcare.

- 3.3.1 Describe and recommend preventive health services such as immunization and screening tests.
- 3.3.2 Promote educational strategies such as awareness campaigns.
- 3.3.3 Design and implement strategies and programs to prevent and manage chronic diseases.
- 3.3.4 Assess the healthcare status and needs of variant populations.

## Domain 4

# Approach to Practice & Care

The program equips the graduates with the knowledge, skills, abilities, behaviors, and attitudes necessary to solve problems, educate, advocate, collaborate, and conduct research, while working with people from diverse backgrounds, and effectively communicate verbally and nonverbally.

### Competencies

#### 4.1 Problem Solver

Detect problems, develop potential strategies, and execute possible solutions.

#### 4.2 Educator

Educate all audiences by determining the most efficient ways to deliver information and assess learning.

#### 4.3 Advocate

Demonstrate care for patients, communities and populations by using pharmacy expertise to understand health needs and advance care and well-being of others.

### Learning Outcomes

Pharmacy graduates will be able to:

- 4.1.1 Identify the primary problem while defining goals and alternative ones.
- 4.1.2 Explore multiple solutions by developing potential strategies to solve identified problems.
- 4.1.3 Investigate positive and negative results by reviewing discrepancies and unplanned consequences.
- 4.1.4 Employ the most feasible solutions.
- 4.1.5 Reflect on the applied solution in order to improve future performances.
- 4.2.1 Educate and give support to other healthcare professionals in a manner suitable to their training, skills and work experience.
- 4.2.2 Coordinate educational efforts with other healthcare providers.
- 4.2.3 Ensure that the delivered information contains the most updated evidence and is customized to fit the attending audience.
- 4.2.4 Select strategies of information delivery that are adapted to the intended audience and assess comprehension at the end of the educational session.
- 4.3.1 Provide information, advice and education for patients and the public on health awareness, disease prevention and control, and healthy lifestyle and wellness.
- 4.3.2 Work with patients and the public to increase opportunities to adopt healthy behaviors.

#### 4.4 Collaborator

Collaborate with other healthcare professionals to manage the care of a patient through advising on therapeutic decision-making in a multi-professional team.

#### 4.5 Scholar

Applying medication therapy expertise, learning continuously, updating their knowledge and engaging in research.

#### 4.6 Cultural Sensitivity

Practice their duties as pharmacists to allow access to quality care for all patients without any discrimination.

#### 4.7 Communicator

Use appropriate communication skills (verbal and non-verbal) to build rapport and engage with patients and their caregivers, with other healthcare professionals, other support staff, and other relevant third parties.

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- 4.4.1 Participate with inter-professional healthcare team members including patients, pharmacy colleagues and individuals from other professions.
- 4.4.2 Operate in an atmosphere of shared values and mutual respect necessary to meet patient care needs.
- 4.4.3 Optimize patient outcomes through clearly defined roles and responsibilities for team members.
- 4.4.4 Join with other healthcare team members in respectful and effective shared decision-making.
- 4.4.5 Establish productive and effective collaborations and networks with other schools (pharmacy, other health professions and disciplines), universities, pharmacy practice community, pharmaceutical industry, government, national and international organizations, and other appropriate partners.
- 4.5.1 Apply medication therapy expertise to optimize pharmacy care, pharmacy services and healthcare delivery.
- 4.5.2 Demonstrate the ability to critically reflect on their own practice and skills, to identify learning and development needs.
- 4.5.3 Deliver effective feedback in teaching and learning situations.
- 4.5.4 Apply principles of scientific enquiry to investigate a medicine or practice related issue.
- 4.5.5 Possess the skills to initiate research and practice development activities.
- 4.5.6 Use multiple drug information sources.
- 4.5.7 Appraise research studies with regards to study design, methodology, statistical analysis, significance, and validity of data reported.
- 4.6.1 Demonstrate an attitude that is respectful of different cultures and does not discriminate between patients' access to quality care.
- 4.6.2 Safely and appropriately incorporate patients' cultural beliefs and practices into health and wellness care plans.
- 4.7.1 Communicate effectively with patients, caregivers, families and laypersons of diverse backgrounds.
- 4.7.2 Demonstrate the ability to build positive relationships with other healthcare professionals and stakeholders.
- 4.7.3 Provide clear and concise consultations to other healthcare professionals.
- 4.7.4 Develop professional written communications that are appropriate to the audience and checks understanding.
- 4.7.5 Use verbal communications tailored to varied patient specific criteria.
- 4.7.6 Communicate with appropriate levels of assertiveness, confidence, empathy and respect.
- 4.7.7 Use available technology and other media to help with communication as appropriate.
- 4.7.8 Provide and obtain feedback to assess learning and promote goal setting and attainment.

Domain 5

# Professionalism

The program equips the graduates to demonstrate a commitment to the highest standards of professional responsibility, honesty and liability; adherence to ethical principles and moral reasoning in relation to patients, other healthcare professionals and society.



## Competencies

### 5.1 Practices Professionally

Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers and society.

### 5.2 Practices Legally

Know, comprehend and comply with major policies and legislative procedures related to pharmaceutical products.

### 5.3 Practices Ethically

Demonstrate and embody ethical standards, principles and moral reasoning in all professional interactions with patients, families, other healthcare professional and society.

## Learning Outcomes

Pharmacy graduates will be able to:

- 5.1.1 Demonstrate the responsible behaviors expected of pharmacists, including accountability, patient confidentiality, punctuality and the prioritizing of the needs of patients.
- 5.1.2 Serve as a credible role model/leader for students, trainees and colleagues by exhibiting values and behaviors of a professional.
- 5.1.3 Exemplify the professional values of pharmacy, including compassion, integrity, social responsibility and respect for all persons.
- 5.2.1 Apply and understand regulatory affairs and the key aspects of pharmaceutical registration and legislations.
- 5.2.2 Apply knowledge in relation to the principles of business economics and intellectual property rights including the basics of patent interpretation.
- 5.2.3 Be aware of and identify the new medicines coming to the market.
- 5.2.4 Comply with legislation for drugs with the potential for abuse.
- 5.2.5 Demonstrate knowledge in marketing and sales.
- 5.2.6 Engage with health and medicines policies.
- 5.2.7 Understand the steps needed to bring a medicinal product to the market including the safety, quality, efficacy and pharmacoeconomic assessments of the product.
- 5.3.1 Demonstrate awareness of recognized codes of ethics.
- 5.3.2 Respect the dignity and autonomy of patients.
- 5.3.3 Protect and respect the confidentiality of patient's information.
- 5.3.4 Protect intellectual properties.
- 5.3.5 Accept constructive criticism and modify behavior if necessary.
- 5.3.6 Obtain patient consent (it can implicit on occasion).

Domain 6

# Personal & Professional Development

The program equips the graduates to demonstrate a commitment to the personal development through continuous self-awareness: and to identify characteristics that reflect skills pertaining to leadership, management and innovation.



## Competencies

### 6.1 Self-Awareness

Examine and reflect personal knowledge, skills, abilities, beliefs, biases, motivations and emotions that could enhance or limit personal and professional growth.

### 6.2 Leadership and Management

Demonstrate responsibility for creating and achieving shared goals regardless of the positions.

### 6.3 Innovation

Demonstrate ability to introduce new ideas and methods.

## Learning Outcomes

Pharmacy graduates will be able to:

- 6.1.1 Understand and accept the importance of life-long learning for pharmacists.
- 6.1.2 Demonstrate skills of self-awareness, self-assessment, and self-development.
- 6.1.3 Determine areas of deficiencies and interests.
- 6.2.1 Identify characteristics that reflect leadership skills in demonstrating the responsibility for creating and achieving shared goals, regardless of position.
- 6.2.2 Demonstrate self-management skills.
- 6.2.3 Demonstrate efficient time management skills and have the ability to prioritize important tasks.
- 6.2.4 Know how to empower team members by actively listening, gathering input or feedback, and fostering collaboration.
- 6.3.1 Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.
- 6.3.2 Define new questions to be answered or problems to be solved.
- 6.3.3 Use different search strategies to retrieve information from literature.

### References

- **FIP:** International Pharmaceutical Federation
- **CAPE:** Center for the Advancement of Pharmacy Education
- **PSI:** Pharmaceutical Society of Ireland
- **ACPE:** Accreditation Council for Pharmacy Education
- **AFPC:** Association of Faculties of Pharmacy of Canada
- **ACCP:** American College of Clinical Pharmacy





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