

**T.R.**  
**ISTANBUL MEDIPOL UNIVERSITY**  
**SCHOOL OF PHARMACY**

**INTERNSHIP LEARNING**  
**OBJECTIVES**

**A. PHARMACY INTERNSHIP LEARNING OBJECTIVES**

**A.1. Community Pharmacy Internship - Learning Objectives**

1. General information about the pharmacy
  - a. Duties and responsibilities of the pharmacists as a healthcare provider
  - b. Duties, and responsibilities of the pharmacy technician
  - c. Pharmacy design; shelving of drugs and other products
  - d. Arrangement of drugs: alphabetical order, pharmacological order etc.
  - e. Equipment and devices used in pharmacy
  - f. Working pharmacy hours and shift, roster scheduling and considerations.
2. Drugs and medical devices procurement procedures;
  - a. Pharmacy, pharmaceutical warehouse interactions, supervision, registration, and payment of the procured products
  - b. The role of the pharmacy technician in the procurement process
3. Prescription dispensing;
  - a. Terms used in prescription
  - b. Factors to consider during dispensing
  - c. Prescription documentation process
4. Points to consider in pharmacist-patient communication;
  - a. Patient reception
  - b. Stages of the systematic approach to patient's problems.
  - c. Patient education methods
  - d. Frequently asked questions (FAQ)
  - e. Pharmacist's approach to acute problems
  - f. The role of pharmacist's in the treatment of chronic diseases
5. Instructions for use of complex dosage forms;
  - a. Inhalers
  - b. Eye products
  - c. Insulins and other subcutaneous injectables
  - d. Transdermal products
  - e. Sprays
6. Clinical pharmacy/pharmaceutical care services provided in pharmacy;
  - a. Drug consultation
  - b. Rational drug use

- c. Drug-drug and drug-nutrition interactions
  - d. Others
7. Computer use and computer-aided applications in pharmacy;
  - a. Use of Social Security Institution (SSI) provision system,
  - b. Use of drug tracking system,
  - c. Stock and expiration date control of the drug and medical supplies; precautions regarding expiring drugs,
  - d. Documentation of the patient's drug profile
8. Professional communication and relations between the pharmacist and other health care providers
9. Essential drugs to be provided in the pharmacy
10. Special prescription (purple, orange, red, and green colored) drugs and the prescription requirements
11. Prescriptions to be retained in the pharmacy
12. Must have professional reference books in the pharmacy: Pharmacopeia and drug formularies
13. Professional reference books available in the pharmacy: Periodical academic and/or professional publications; electronic and online drug information sources
14. Pharmacy registries
15. Regulations guiding salary insurance premium payments of staff
16. Occupational organizations and relations with these organizations
17. Relationship between the pharmacy and the Ministry of Health, Ministry of Finance and Social Security Institution
18. General information about the Health Implementation Communiqué (SUT) and Budget Implementation Communiqué (BUT)
19. Contracts with the official institutions and organizations
20. Drugs, medical equipment, and antidotes used in emergencies
21. Poisonous and isolated medicine cabinets
22. First aid in pharmacy
23. Non-prescription drugs
24. Pharmacists' role in family planning, and preventive health services
25. Hygienic conditions and a clean work environment in the pharmacy
26. Operations regarding the calibration and supervision of measuring and weighing devices in the pharmacy
27. Refrigerator and proper utilization; cold chain products
28. Temperature and humidity control in the pharmacy
29. Operations regarding the calibration and supervision of the refrigerator, thermometer, humidity meter, and scale devices
30. Alcohol dilution calculation by weight and volume
31. Maximum dosage control

32. Organization of the laboratory in the pharmacy and must have devices, items, and equipment in the laboratory

33. Preparation of the magistral preparates;

- a. Active ingredients and excipients
- b. Synonyms of the products
- c. Usages of the products
- d. Pharmaceutical forms of the preparates
- e. Usage of the preparates
- f. Preparation of the preparates
- g. Packaging and storage conditions
- h. Pricing

34. Non-pharmacological products;

- a. Dermocosmetic products (if available) in the pharmacy
- b. Nutritional supplements (if available) in the pharmacy (Phyto-pharmaceutics; nutraceuticals)
- c. Perfumery, orthopedics (if available) in the pharmacy
- d. Maternal, Newborn & Child Health Products (if available) in the pharmacy

35. Reporting procedure of drug adverse effects reported by patients to the "Turkish Pharmacovigilance Center"

36. Pharmacy inspections and audit

37. Expired drug procedures

38. Minimum physical requirements of a pharmacy

## **A.2. Hospital Pharmacy Internship - Learning Objectives**

1. Hospital related information;
  - a. Hospital type(university, government, teaching, training-research, private, etc.)
  - b. Number and names of the services and polyclinics in the hospital
2. Hospital pharmacy related information;
  - a. Number of the pharmacists, clinical pharmacists, and pharmacists
  - b. Duties and responsibilities of the pharmacist as health care provider in the hospital
  - c. Number, qualification, and responsibilities of the auxiliary staff
  - d. Location of the hospital pharmacy in the hospital; sections of the hospital pharmacy and functions of these sections
  - e. Classification, shelving, and storage of the drugs
  - f. Devices and appliances used in the hospital pharmacy
  - g. Working hours and duty rotation of pharmacy staff
  - h. The average daily prescriptions prepared in the hospital pharmacy
3. Procurement procedures of the drugs and the medical devices;
  - a. The role of the pharmacist in the decision-making process
  - b. Documentation of the purchased drugs and medical devices
4. Preparation and distribution of the drugs and medical devices written in prescriptions, medical orders and/or request forms;
  - a. Drug delivery system used in the hospital (unit-dose, etc.)
  - b. Sections of the prescription or doctor's order/request forms
  - c. Control and preparation of the drugs and the medical devices written in the prescription and doctor's orders/request forms
5. Documentation storage, and distribution of the narcotic and psychotropic drugs
6. Pharmacist committee memberships and role in these committees(e.g. Infection control committee etc)
7. Development and update of the hospital formulary
8. Safety measures to be taken while handling dangerous drugs(e.g. cytotoxics)
9. Maximum dosage control
10. Preparation of TPN, solutions for injection, and cytotoxic drugs
11. Hygiene conditions and clean work environment in the hospital pharmacy
12. Refrigerator and the proper usage, cold-chain drugs
13. Temperature and humidity control in the pharmacy
14. Primary calibration of the refrigerator, thermometer, hygrometer, and weighing devices
15. Must have drugs in the hospital
16. "High-risk drugs" in the pharmacy and handling procedures (packaging, special warnings, tagging, etc.) and other special tags if available (will be kept in the refrigerator, etc.)

17. Storage and handling procedures of drugs with exceptional storage requirements
18. Computer-aided handling of services in the hospital pharmacy
19. Stock and expiration date control of the drugs and medical devices
20. Connections between the pharmacist and clinical wards;
  - a. How often do ward refer to pharmacist for "drug counseling"?
  - b. What are the most frequently asked drug-related questions?
21. Preparation of patients orders written an specific order sheets obtained from the ministry of health and registered to specified physicians.
22. Magistral drug preparation in the hospital pharmacy;
  - a. Weighing of the stock and finished product in the pharmacy
  - b. Use of the weighing scale devices in the pharmacy
  - c. Preparation and packaging of magistral drugs in the hospital pharmacy
23. Report procedure of the drug side effects experienced by patients to the "Turkish Pharmacovigilance Center"
24. Drug disposal protocol (expired drugs etc.)
25. Audit conducted in the hospital pharmacy

## **B. DRUG AND COSMETIC INDUSTRY INTERNSHIP LEARNING OBJECTIVES**

### **B.1. Drug and Cosmetic Industry Internship-Learning Objectives**

1. Definition of the pharmaceutical industry
2. Roles and responsibilities of the pharmacist in the pharmaceutical industry
3. Sections;
  - a. Function and responsibilities of administrative divisions (registration, marketing and sales, quality assurance, patent, and data protection)
  - b. Function and responsibilities of the technical department (R-D, quality assurance, and production departments)
4. Routine productions (process validations) and in-process test analysis
5. Definition, responsibilities and operations of the quality assurance;
  - a. Areas within the quality assurance related to the drug production
  - b. Filing and documentation
  - c. Archiving
  - d. Operational and related system network
  - e. Control of the drug production process
  - f. Application of GMP and standard operation procedures (SOP) and their controls
6. Definition of the quality control and topics included in its scope;
  - a. Quality control and documentation quarantine and storage procedures of drug raw materials
  - b. Quality control in the production and post-production phases
  - c. Determination and validation of analytical methods
  - d. Dissolution rate analysis
  - e. Impurity analysis
  - f. Quantitation methods
  - g. In-process and finished product quality control and SOP
  - h. Definitions and control of finished product and package
  - i. Market tests and finished product tracking
7. Registration: Definition and related topics and topics included in the scope of it;
  - a. Finished product specifications
  - b. SPC (summary of product characteristics), IM(instruction manual), and file completion
  - c. Topics included in registration technical file
  - d. Preparation of the technical file
  - e. Preparation of the material and product information according to the CTD rules
8. Patent and data protection
  - a. Intellectual property rights
  - b. Patent, examined and unexamined patent
  - c. Patent survey databases
  - d. Preparation of the patent document

- e. Data protection
- f. General information about the institutions such as Turkish Patent and Trademark Office, WIPO etc.

9. R-D Studies;

- a. Preformulation studies
- b. Formulation development
- c. Quantification methods and quantitative analysis
- d. Laboratory-scale production studies
- e. Stability tests
- f. Process validations
- g. Purity determinations
- h. Pilot production

10. Medical section, Pharmacovigilance

- a. Definition of the pharmacovigilance
- b. Duties and responsibilities of the pharmacovigilance unit
- c. Adverse effect, adverse events, and side effects
- d. Documentation of drug-related adverse effect reports
- e. TÜFAM
- f. Preparation of promotional material content of the drug
- g. Colloboration between medical departments

11. 11. Production

- a. a. General operation in drug production
- b. b. General information about the design of pharmaceutical production areas
- c. c. In-line and out-line production lines
- d. D. Packaging of medicines
- e. Planned and unplanned downtime and cleaning procedures in pharmaceutical production lines
- f. Finished product analysis

12. Marketing and sales

- a. Medical advertisement and marketing
- b. Sales models in the pharmaceutical industry
- c. Marketing mix elements (7P)
- d. The life adventure of a product
- e. Marketing research

13. Clinical research department

14. Market access section

## **C. PHARMACEUTICAL WAREHOUSE INTERNSHIP LEARNING OBJECTIVES**

### **C.1. Pharmacy Warehouse Internship - Learning Objectives**

1. The role, duties, and responsibilities of the pharmacist in the pharmacy warehouse
2. Necessary procedures to open a pharmacy warehouse
3. Required features of a pharmacy warehouse
4. The pharmacy warehouse's:
  - a. Classification of drugs
  - b. Staff status
  - c. Sections and their functions
  - d. Tools and equipment in the pharmacy warehouse
  - e. Cleaning and hygiene conditions
  - f. Storage conditions of cold-chain drugs
  - g. Conditions of delivery of these drugs to the pharmacy without breaking the cold chain
5. General operation in a pharmaceutical warehouse



## **UNIVERSITY LAB. INTERNSHIP**

Learning objectives in these internships are carried out with the approval of the Head of the relevant Department and the Internship Commission. The objectives are determined by the advisor, according to the field of study and the content of the project, if any.

**DİĞER**

The internships outside of a public pharmacy or a hospital pharmacy, under the supervision of a pharmacist, a pharmaceutical manufacturing facility, cosmetics factory, and/or the R&D centers related to production areas by the amendment in the Official Gazette dated 25.05.2018 and numbered 30431, are carried out with the approval of the Internship Commission, and learning objectives are determined and followed according to the content of the internship.

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**REPORTING OF THE INTERNSHIP LEARNING**

**OBJECTIVES**

General rules:

\* Practices and observations made within the scope of the Internship Learning Objectives, should be written in easy-to-understand, formal language.

\* An Internship Approval Form must be filled for each Internship.

\* Internship reports must be at least 3 pages cover page containing the student/institution information.

\* Each page of the Internship Approval Form must be signed and approved by the authorized supervisor in the institution where the internship is done.

\* Students should prepare and submit the Internship Logbook as a single notebook after receiving the Internship Application Form and Internship Approval Forms from the Secretariat at the end of their 5th year.