

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: PHAR 102

Credit Hours: 3

Course Title: Pharmacy Practice

Course Prerequisites: enrollment in, or completion of, all program qualification courses; departmental permission

Course Co-requisite: PHAR 104; PHAR 102L, PHAR 101

Textbooks: Ballington, D.; Pharmacy Practice for Technicians, 6th edition;
The Pharmacy Technician, 6th edition

Course Description:

This course for the pharmacy technician student provides instruction on routes of drug administration and dosage formulations, pharmacy measurements and calculations, community pharmacy dispensing, healthcare and prescription drug insurance, the business of community pharmacy, extemporaneous, nonsterile compounding, hospital pharmacy dispensing, and medication safety.

Learning Outcomes:

At the end of this course, the student will be able to:

- A- Describe the pharmacy technician's role, pharmacist's role, and other occupations in the healthcare environment. (2.3)
- B- Demonstrate basic knowledge of anatomy, physiology and pharmacology, and medical terminology relevant to the pharmacy technician's role. (2.5)
- C- Perform mathematical calculations essential to the duties of pharmacy technician's in a variety of settings. (2.6)
- D- Assist pharmacists in collecting, organizing, and recording demographic and clinical information for the Pharmacist Patient Care Process. (3.1)
- E- Receive, process, and prepare prescriptions/ medication orders for completeness, accuracy, and authenticity to ensure safety. (3.2)
- F- Assist pharmacists in the identification of patients who desire/ require counseling to optimize the use of medication and equipment. (3.3)
- G- Assist the pharmacist in preparing, storing, and distributing medication products including those requiring special handling and documentation. (3.6)
- H- Assist the pharmacist in monitoring medication therapy. (3.7)
- I- Apply quality assurance practices to pharmaceuticals, durable and non-durable medical equipment, devices and supplies. (3.11)
- J- Explain procedures and communication channels to use in the event of a product recall or shortage, a medication error, or identification of another problem. (3.12)
- K- Use current technology to ensure the safety and accuracy of medication dispensing. (3.13)

- L- Collect payment for medications, pharmacy services, and devices. (3.14)
- M- Describe basic concepts related to preparation for sterile and non-sterile compounding. (3.15)
- N- Explain accepted procedures in purchasing pharmaceuticals, devices, and supplies. (3.18)
- O- Explain accepted procedures in inventory control of medications, equipment, and devices. (3.19)
- P- Explain accepted procedures utilized in identifying and disposing of expired medications. (3.20)
- Q- Prepare, store and deliver medication products requiring special handling and documentation. (3.22)
- R- Initiate, verify, and manage the adjudication of billing for complex and/or specialized pharmacy services and goods. (3.26)
- S- Apply accepted procedures in purchasing pharmaceutical devices and supplies. (3.27)
- T- Explain the Pharmacist's Patient Care Process and describe the role of the pharmacy technician in the patient care process. (4.1)
- U- Apply patient, and medication safety practices in aspects of the pharmacy technician's role. (4.2)
- V- Explain pharmacist and pharmacy technician roles in medication management services. (4.7)
- W- Participate in the operations of medication management services. (4.11)
- X- Describe pharmacy compliance with professional standards and relevant legal, regulatory, formulary, contractual, and safety requirements. (5.5)

To achieve the learning outcomes, the student will:

Chapter 5: Routes of Drug Administration and Dosage Formulation

1. Differentiate between the routes of administration, dosage form, and drug delivery system (B)
2. Identify different inactive and inert ingredients and various tablet coating and their function. (B)
3. Explain the properties of oral, transmucosal, topical (dermal and transdermal), inhalation, and parenteral routes of administration and their dosage forms. (B)
4. Explain the advantages and disadvantages of the various routes of administration to better understand and remember prescription and OTC directions. (B)
5. Explain the advantages and disadvantages of the varying drug formulations and their indications. (B)
6. Demonstrate correct techniques for administration of topicals, eye drops, inhalers, and various parenteral injections. (B)
7. Contrast the advantages and disadvantages of insulin administration from syringes versus pens, and discuss the importance of syringe and needle selection. (B)
8. Describe the common drug delivery systems that delay, extend, or target delivery and their prescriptive notations. (B)

Chapter 6: Pharmacy Measurements and Calculations

1. Review basic arithmetic calculations. (C)
2. Convert Roman numerals to Arabic numerals. (C)
3. Convert percentages to and from fractions and to and from decimals. (C)
4. Perform basic operations with ratios and proportions, including finding an unknown quantity in a proportion. (C)
5. Convert standard time to 24 hour time. (C)
6. Convert temperatures to and from Fahrenheit and Celsius (C)
7. Describe the different systems of measurement (avoirdupois, imperial, apothecary, household, and metric) that have been used in pharmacy. (C)
8. Explain why the metric system is the official pharmaceutical system and explain the meaning of the prefixes most commonly used. (C)
9. Convert from one metric unit to another. (C)
10. Convert units from other measurement systems to metric. (C)
11. Accurately calculate dosages from weight-in-weight, volume-in-volume, and weight-in-volume concentration ratios. (C)
12. Perform dosage calculations using body weight and body surface area. (C)
13. Reconstitute powdered medications by determining volume-in-volume powder measurements and administration volumes. (C)
14. Solve compounding problems involving powder volume in solution and dilutions. (C)
15. Apply the alternate allegation method to prepare a solution and topical products. (C)
16. Calculate the specific gravity of a liquid. (C)
17. Demonstrate how to utilize millequivalents. (C)

Chapter 7: Community Pharmacy Dispensing

1. Discuss the overall processes of community dispensing and a pharmacy technician's general role responsibilities within them. (A) (E)
2. Identify the parts of a prescription and the most commonly used abbreviations. (E)
3. Describe the various types of prescriptions and the step-by-step procedures to fill them. (E)
4. Describe the role of the pharmacy technician in identifying patients who need or desire counseling. (F)
5. Describe how the pharmacy data management system interfaces online with an external health information network and databases, and with internal software for varied pharmacy and business functions. (K)
6. Describe how to build a patient profile and discuss the importance of updating current information about drug and supplement use, allergies, adverse drug reactions and insurance for medication reconciliation and following HIPAA mandated guidelines. (D)(X)
7. Describe the process and importance of the Drug Utilization Review. (E)
8. Identify the parts of a stock drug label and describe the importance of the Drug Utilization Review. (E)

9. Identify the parts of a stock drug label and describe the importance of comparing National Drug Code numbers in medication selection and filling. (E)
10. Discuss how automation is utilized along with a final check and verification by the pharmacist to minimize medication errors. (K)
11. Describe Medication Therapy Management (MTM) and other health services provided in a community pharmacy setting. (H)(W)(V)
12. Describe how the pharmacy technician can assist in MTM in accordance with Louisiana State Law. (H)(W)(V)

Chapter 8: Healthcare and Prescription Drug Insurance

1. Describe the importance of insurance to address rising prescription drug cost. (L)
2. Explain the various forms of coverage plans: commercial, Health Maintenance Organizations, Preferred Provider Organization, workers' compensation, Medicare, Medicaid, and military insurance. (L)
3. Define key terms including average wholesale price, monthly premium, insurance policy, benefits, deductible, copayment, coinsurance, tiered copay, in-network provider, out-of-network provider, prior authorization, pharmacy benefits manager, coordination of benefits, and online adjudication. (L)(R)
4. Explain the concept of tiered copayments for private commercial drug insurance programs. (L)
5. Describe the Affordable Care Act's expansion of Medicaid and state healthcare exchanges to provide coverage for those who are uninsured or underinsured. (L)
6. Read a drug insurance card and identify the necessary information to process claims online for various types of insurance and workers' compensation claims. (L)
7. Describe the role of technician in identifying and resolving errors in online adjudication. (L)(R)
8. Describe the role of the technician in explaining insurance drug coverage to patients. (L)
9. Describe how to assist financially struggling patients through medication assistance advocacy. (L)
10. Identify the steps to resolve problems with audits and charge-backs. (L)

Chapter 9: The Business of Community Pharmacy

1. Describe the roles, responsibilities, and limitations of the pharmacy technician in the safe use of over-the-counter (OTC) drugs, supplements and retail items (A)(T)
2. Define the patient-care process. (T)
3. Describe the role of the pharmacy technician in the patient care processing. (T)
4. Describe how to accurately process restricted OTC drug sales, such as Schedule V cough syrups and decongestants containing pseudoephedrine. (W)
5. Identify the advantages and disadvantages of homeopathic drugs and various dietary supplements such as herbs, vitamins, and minerals, and describe the differences in regulatory control and labeling requirements for prescription drugs. (W)
6. Describe how to address customer needs for medical and home health supplies and durable medical equipment. (I)(S)

7. Explain the application of quality assurance standards to pharmacy, durable and non durable medical equipment, devices and supplies (I)
8. Identify necessary cash register functions, bar code scanning, taxable and non-taxable items. (L)
9. Explain how to change register receipt paper and ink toner, and provide correct change. (L)
10. Demonstrate the ability to calculate markup, discounts, and average wholesale prices. (C)
11. Describe the importance of computer management and pharmacy informatics for generating business reports. (K)
12. Explain the technician's role in handling inventory- purchasing, receiving, posting, expiring, and returning for credit of stock. (N)(P)(S)
13. Describe the significance of pharmacy productivity and profits for ensuring a pharmacy's sustainability as a business. (N)

Chapter 10: Extemporaneous Nonsterile Compounding

1. Describe the terms compounding, extemporaneous, nonsterile, and anticipatory compounding. (M)
2. Distinguish between a manufactured drug product and a compounded nonsterile preparation, and the purpose of USP Chapter <795>. (M)
3. Describe the role and training requirements of pharmacy technicians in nonsterile compounding. (M)
4. Explain the contemporary demands for nonsterile compounding and the process for accreditation of specialty compounded pharmacies. (M)
5. Describe the distinct purposes of the master formulation record and the compounding record. (M)
6. Describe nonsterile compounding hand hygiene and garbing requirements. (M)
7. Identify the functions and limitations of the equipment used for weighing, measuring and compounding, and the proper techniques for using each. (M)
8. Define the term percentage error and its function. (C)(M)
9. Discuss the types of compounding ingredients (including hazardous substances) and how to determine their quality and safety. (M)(Q)(U)
10. Define various methods for the comminution and blending of ingredients. (M)
11. Explain the differing techniques by which solutions, suspensions, ointments, creams, powders, suppositories, rapid-dissolving tablets, troches, and capsules are prepared. (M)
12. Describe the final compounding steps, including calculating beyond-use dating, labelling, offering patient education, and clean-up and equipment management. (C)(M)

Chapter 11: Hospital Pharmacy Dispensing

1. Describe the function of the hospital and its organizational framework. (A)
2. Define the roles and functions of the Pharmacy and Therapeutics Committee (especially on the hospital formulary) and the Institutional Review Board. (A)

3. Explain the functions of the pharmacy department within the hospital structure and the roles and responsibilities of the director of pharmacy, pharmacist, and pharmacy technician. (A)
4. Describe the role of the interoperability of hospital management software, different types of electronic health records, medication orders, and automated technology. (K)
5. Describe the functions and benefits of CPOE, AMDS, BPOC, and eMARs. (K)
6. Describe the different dispensing systems for medication orders, such as unit dose carts, robotic filing and dispensing cabinets, and specialty cleanroom services. (K)
7. Explain the proper procedure for preparing, labeling, and repackaging unit dose medications. (E)
8. Describe inventory management of pharmaceuticals, including drug bidding, ordering, receiving, and storage processes. (O)
9. Describe the ordering, receipt, and documentation of controlled medications, including the advantage of utilizing an automated dispensing storage unit. (Q) (G)
10. Explain the major role of the Joint Commission in establishing accreditation standards for hospitals. (X)
11. Identify the importance and types of various measurements of productivity in the pharmacy department. (A)

Chapter 14: Medication Safety

1. Describe patient medication rights, the extent of preventable medication errors, and their effects on patient safety and healthcare cost. (U)
2. Identify specific categories of medication errors, their causes, and how to avoid them. (U)
3. Describe the various potential errors per each step of the dispensing process. (U)
4. Describe tools to assist in preventing medication errors, including the use of automation and package design. (K)(U)
5. Explain why errors are unreported and what can be done. (J)
6. Identify the common programs available for reporting medication errors. (J)
7. Explain why prescription abuse is a public safety issue. (J)
8. Describe ways to detect drug seekers and forged prescriptions for controlled substances. (U)
9. Identify and resolve drug abuse issues among coworkers. (U)
10. Outline appropriate behavior during a robbery using the acronym REACT. (U)
11. Define medication management services. (V)(W)
12. Describe the role of the pharmacy technician in medication management services. (V)(W)

Course Requirements: To earn a grade of “C” or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- Demonstrate the ability to type 40 words per minute
- minimum average score of 70% on chapter tests
- minimum average of 70% on the comprehensive midterm and final tests
- minimum average of 70% overall in course

Course Grading Scale:

- A- 90% or more of the total possible points and a minimum of 70% average on the midterm and final exams and minimum 70% average on chapter tests
- B- 80% or more of the total possible points and a minimum of 70% average on the midterm and final exams and minimum 70% average on chapter tests
- C- 70% or more of the total possible points and a minimum of 70% average on the midterm and final exams and minimum 70% average on chapter tests
- D- 60% or more of the total possible points and a minimum of 70% average on the midterm and final exams and minimum 70% average on chapter tests
- F.-less than 60% of the total possible points or less than 70% average on the midterm and final exams and minimum 70% average on chapter tests

Attendance Policy: The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

Nondiscrimination Statement

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA

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