

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. Perform mathematical calculations essential to the duties of a pharmacy technician.
- B. Demonstrate knowledge of processing and handling of medications and medication orders.
- C. Demonstrate knowledge of prescription drug insurance and business aspects of pharmacy practice, including applications of technology.
- D. Describe and apply principles of extemporaneous nonsterile compounding
- E. Apply principles of patient care, quality and safety to community and hospital pharmacy practice.

To achieve the learning outcomes, the student will:

Routes of Drug Administration and Dosage Formulation

- 1. Differentiate between the terms route of administration, dosage form, and drug delivery system.
- 2. Explain the properties of oral, topical and parenteral dosage forms.
- 3. Identify inactive ingredients and the various coating of tablets and their functions.
- 4. Differentiate between a suspension and an emulsion liquid dosage form.
- 5. Identify dosage formulations utilizing the transmucosal route of administration.

6. Define the emulsion characteristics of topical products such as ointments, creams, lotions, and gels.
7. Explain the advantages and disadvantages of oral, topical, and parenteral dosage formulations.
8. Discuss the importance of syringe selection for a diabetic patient.
9. Contrast the advantages and disadvantages of insulin in multi-dose vials and prefilled insulin syringes.
10. Identify the stability and expiration dates of insulin at room and refrigerated temperatures.
11. Demonstrate the correct technique for administration of eyedrops, eardrops, metered-dose inhalers, and various parenteral injections.
12. Differentiate among enteric-coated, sustained-release, and extended-release dosage formulations.
13. Convert standard time and temperatures to and from Fahrenheit and Celsius.
14. Describe the different systems of measurement (avoirdupois, imperial, apothecary, household, and metric) that have been used in pharmacy.
15. Explain why the metric system is the official pharmaceutical system, and describe the meaning of the prefixes most commonly used.

Pharmacy Measurements and Calculations

1. Review basic arithmetic calculations.
2. Convert standard time and temperatures to and from Fahrenheit and Celsius.
3. Describe the different systems of measurement (avoirdupois, imperial, apothecary, household, and metric) that have been used in pharmacy.
4. Explain why the metric system is the official pharmaceutical system, and describe the meaning of the prefixes most commonly used.
5. Convert from one metric unit to another.
6. Calculate dosages from weight-in-weight, volume-in-volume, and weight-in-volume concentration ratios.
7. Perform dosage calculations using body weight and body surface area.
8. Determine volume-in-volume powder measurements and administration volumes to reconstitute powdered medications.
9. Solve compounding problems involving powder volume in solutions and dilutions.
10. Apply the allegation alternative method to prepare solutions and topical products.
11. Calculate the specific gravity of a liquid and use milliequivalents.

Community Pharmacy Dispensing

1. Outline the overall processes of community dispensing and a pharmacy technician's general responsibilities within them.
2. Identify the parts of a prescription and the most commonly used abbreviations.
3. Summarize the various types of prescriptions and the step-by-step procedures to fill them.

4. Translate the most commonly used pharmacy abbreviations.
5. Describe the role of the pharmacy technician in identifying patients who need or desire counseling.
6. 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.
7. Describe how to build a patient profile, 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.
8. Describe the process and importance of the Drug Utilization Review.
9. Identify the parts of a stock drug label and describe the importance of comparing National Drug Code numbers in medication selection and filling.
10. Discuss how the pharmacist, to minimize medication errors, utilizes automation, along with a final check and verification.
11. Identify three different NDC checks that help reduce the risk of medication errors.
12. Outline the different ways to educate a patient about their prescription using labels and medication guides.
13. Describe the steps a pharmacist will take when doing a final check on a prescription.
14. Summarize the aspects of patient prescription dispensing, including pre-pickup storage and pickup options.
15. Describe medication therapy management (MTM), Point of care testing, and other health services provided in a community pharmacy setting.
16. Describe how the pharmacy technician can assist in MTM in accordance with Louisiana State Law.

Prescription Drug Insurance in Healthcare

1. Describe the importance of insurance to address rising prescription drug cost. (L)
2. Identify components of health insurance, and define common terms and concepts associated with health insurance.
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. Identify various aspects of commercial insurance and how it works.
6. Describe multiple forms of government insurance, such as Medicare, Medicaid, and others.
7. Summarize the role of pharmacy benefit managers and the role of the technician in explaining to patients the costs and options related to insurance drug coverage.
8. Identify the necessary information on a prescription insurance card to process claims online for various types of insurance and workers' compensation claims,

- and paraphrase the role of technicians in identifying medication assistance and patient advocacy.
9. Paraphrase the role of technicians in identifying and resolving errors in online adjudication.
 10. Explain how to prepare a drug claim for online processing including entering specific information about each prescription filled, including the medication quantity and days' supply of medication.
 11. Summarize the role of technicians in explaining insurance drug coverage to patients.
 12. Identify steps to resolve problems with audits and charge-backs
 13. Discuss how to assist financially struggling patients through medication assistance advocacy.

The Business of Community Pharmacy

1. Describe the roles, responsibilities, and limitations of the pharmacy technician in the sale of over-the-counter (OTC) drugs, supplements, and retail items.
2. Paraphrase how to accurately process restricted OTC drug sales, such as Schedule V cough syrups and decongestants containing pseudoephedrine
3. Identify the advantages and disadvantages of alternative medicine products and various dietary supplements such as herbs, vitamins, and minerals, and list the differences in regulatory control and labeling requirements from prescription drugs.
4. Describe how to address customer needs for medical and home health supplies and durable medical equipment.
5. State necessary cash register functions for bar code scanning, taxable, and non-taxable items.
6. Describe how to change register receipt paper and ink toner, and how to provide correct change.
7. Calculate markups, discounts, and average wholesale prices.
8. Explain the technician's role in handling inventory-purchasing, receiving, posting, and returning stock for credit (including controlled substances).
9. Describe the importance of computer management and pharmacy informatics for generating business reports.
10. State the significance of pharmacy productivity and profits for ensuring a pharmacy's sustainability as a business.

Extemporaneous Nonsterile Compounding

1. Define the terms compounding, extemporaneous, nonsterile, and anticipatory compounding.
2. Understand the distinction between a manufactured drug product and a compounded nonsterile preparation, and preparation and the purpose of Chapter <795>.
3. Understand the role and training requirements of pharmacy technicians in nonsterile compounding.

4. Explain the contemporary demands for non-sterile compounding and the process for accreditation of specialty compounded pharmacies.
5. Describe the distinct purposes of the master formulation record and the compounding record.
6. Understand nonsterile compounding hand hygiene and garbing requirements.
7. Identify and describe the functions and limitations of the equipment used for the weighing, measuring, and compounding, and the proper techniques for using them.
8. Define the term percentage of error and its function.
9. Discuss the types of compounding ingredients and how to determine their quality and safety, and store them.
10. Define the various methods for the comminution and blending of ingredients.
11. Explain the differing techniques by which solutions, suspensions, ointments, creams, powders, suppositories, rapid dissolving tablets, troches, and capsules are prepared.
12. Understand the final compounding steps including calculating beyond-use-dating, labeling, offering patient education, and doing cleaning-up and equipment maintenance.

Hospital Pharmacy Dispensing

1. Describe the functions of a hospital and its organizational framework.
2. Define the roles and functions of the Pharmacy and Therapeutics Committee (especially on the hospital formulary) and the Institutional Review Board (on investigational drug studies).
3. Explain the functions of the pharmacy department within the hospital structure and the roles and responsibilities of the director of pharmacy, the pharmacist, and the pharmacy technician.
4. Identify the training and certifications required for a technician to work in a hospital pharmacy.
5. Paraphrase the role of the interoperability of hospital management software, different types of electronic health records, medication orders, and automated technology.
6. Discuss the functions and benefits of CPOE, AMDS, BPOC, and eMARs.
7. Describe the different dispensing systems for medication orders, such as unit dose carts, robotic filling and dispensing equipment, automated dispensing cabinets, and specialty cleanroom services.
8. Explain the proper procedure for preparing, labeling, and repackaging unit dose medications.
9. Describe the ordering, receipt, and documentation of controlled medications, including the advantage of utilizing an automated dispensing storage unit.
10. Understand inventory management of pharmaceuticals, including drug bidding, ordering, receiving, and storage processes.
11. Describe other institutional pharmacy practice settings that serve the aging population.

12. Explain the major role of the Joint Commission in establishing accreditation standards for hospitals.
13. Identify the importance and types of various measurements of productivity in the pharmacy department.

Medication Safety

1. Describe patient medication rights, the extent of preventable medication errors, and the effects of errors on patient safety and healthcare costs.
2. Identify specific categories of medication errors, their causes, and how to avoid them.
3. Describe the various potential errors per each step of the dispensing process.
4. List tools to assist in preventing medication errors, including the use of automation and package design.
5. State why errors are unreported and what can be done to insure proper reporting
6. Identify the common programs available for reporting medication errors.
7. Define FDA safety strategies to prevent adverse effects in high-risk drugs, including Medication Guide and REMS programs.
8. Differentiate the terms drug tolerance, psychological and physical dependence, and addiction.
9. Explain why prescription drug abuse is a public safety issue.
10. Describe ways to detect drug seekers and forged prescriptions for controlled drugs.
11. Identify and resolve drug abuse issues among coworkers.
12. Outline appropriate behavior during a robbery using the acronym REACT

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

Angie Cao, Student and Disability Services Specialist
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Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources

Human Resources Office, A-105

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