Course Prefix and Number: PHAR 102  
Credit Hours: 3

Course Title: Pharmacy Practice

Course Prerequisites: CIS 099 or documentation of typing proficiency; enrollment in or completion of ALTH 116; 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 in the laws, dosage forms, billing, inventory management, extemporaneous compounding, pharmaceutical calculations, written and oral communications, and medication safety.

Learning Outcomes:

At the end of this course, the student will

I. The foundational knowledge and skills necessary to function as a pharmacy technician in various pharmacy settings.
   A. Apply critical thinking skills, creativity, and innovation to solve problems.
   B. Demonstrate understanding of healthcare occupations and the health care delivery system.
   C. Demonstrate knowledge and skills in areas of science relevant to the pharmacy technician’s role, including anatomy/physiology and pharmacology.
   D. Perform mathematical calculations essential to the duties of the pharmacy technicians in a variety of contemporary settings.
   E. Demonstrate understanding of the pharmacy technician’s role in the medication-use process.

II. Skills and knowledge necessary to assist the pharmacist in the correct handling of medication and medication order processing.
   F. Assist pharmacist in collecting, organizing, and recording demographic and clinical information for direct patient care and medication-use review.
   G. Receive and screen prescriptions/medication orders for completeness, accuracy, and authenticity.
H. Assist pharmacists in the identification of patients who desire/require counseling to optimize the use of medications, equipment, and devices.
I. Prepare non-patient specific medications for distribution.
J. Distribute medications in a manner that follows specified procedures.
K. Assist pharmacists in preparing, storing, and distributing medication products requiring special handling and documentation (e.g., controlled substances, immunizations, chemotherapy, investigational drugs, drugs with mandated Risk Evaluation and Mitigation Strategies [REMS]).
L. Assist pharmacists in the monitoring of medication therapy.

III. The ability to accurately and safely perform sterile and non-sterile compounding.

M. Prepare medications requiring compounding of nonsterile products.

IV. Performance of administrative skills appropriate to the role of a pharmacy technician.

N. Initiate, verify, and assist in the adjudication of billing for pharmacy services and goods, and collect payment for these services
O. Apply accepted procedures in purchasing pharmaceuticals, devices and supplies
P. Apply accepted procedures in inventory control of medications, equipment and devices.

V. Application of patient and medication safety in all aspects of the operation of a pharmacy.

Q. Apply patient- and medication-safety practices in all aspects of the pharmacy technician’s roles

VI. The use of current technology in the operation of a pharmacy.

R. Describe the use of current technology in the healthcare environment to ensure the safety and accuracy of medication dispensing.

VII. Compliance with regulatory issues in the operation of a pharmacy.

S. Compare and contrast the roles of pharmacist and pharmacy technicians in ensuring pharmacy department compliance with professional standards and relevant legal, regulatory, formulary, contractual, and safety requirements.
T. Maintain confidentiality of patient information.

VIII. Application of the principles of quality assurance in pharmacy operations.
U. Apply quality assurance practices to pharmaceuticals, durable and nondurable medical equipment, devices and supplies.

V. Explain procedures and communication channels to use in the event of a product recall or shortage, a medication error, or identification of another problem.

To achieve the learning outcomes, the student will

1. distinguish between active and inert ingredients (C)
2. define the regulation and labeling requirements for over-the-counter drugs, homeopathic medications, and dietary supplements. (A,C,H,I,J,L M)
3. explain the parts of a National Drug Code number and its use by the Pharmacy Technician. (G,I,L,P)
4. identify the three classes of FDA drug recalls. (P,R,U,V)
5. list 6 different drugs that are subject to risk evaluation and mitigation strategies (REMS) for their safe use (B,G,J,K,L,U)
6. identify the function of various commonly used pharmaceutical reference texts. (A,R)
7. define and differentiate between the terms: dosage form, route of administration and drug delivery system. (A,C,I)
8. explain the properties of oral, topical, and parenteral dosage forms. (C)
9. identify various coatings of tablets and their functions (B)
10. differentiate between a suspension, solution, and an emulsion liquid dosage form. (C)
11. identify dosage formulations utilizing the transmucosal route of administration. (C)
12. define the emulsion characteristics of topical products such as ointments, creams, lotions, and gels (C)
13. explain the advantages and disadvantages of oral, topical, and parenteral dosage formulations (A,C)
14. discuss the importance of syringe selection for a diabetic patient. (C,J)
15. contrast the advantages and disadvantages of insulin in multi-dose and prefilled insulin syringes. (C,J,P)
16. identify the stability and expiration dates of insulin at room and refrigerated temperatures. (C)
17. demonstrate the correct techniques for administration of eye drops, eardrops, metered-dose inhalers, and various parenteral injections. (A,B,J)
18. differentiate among enteric-coated, sustained-release, and extended-release dosage formulations. (C)
19. describe four systems of measurement commonly used in pharmacy and be able to convert units from one system to another. (A,D,G,M)
20. explain the meanings of the prefixes most commonly used in metric measurement. (C,D,G,M)
21. convert from one metric unit to another (e.g., grams to milligrams). (D,M)
22. convert Roman numerals to Arabic numerals. (D,M)
23. convert temperatures to and from the Fahrenheit and Celsius scales. (D,M)
24. round decimals up and down appropriately. (D,M)
25. perform basic operations with proportions, including identifying equivalent ratios and finding an unknown quantity in a proportion. (D,M)
26. convert percents to and from fractions and ratios and convert percents to and from decimals. (D,M)
27. perform fundamental dosage calculations and conversions. (D,G,M)
28. use the allegation method to prepare solutions and topical products. (D,M)
29. solve problems involving powder solutions and dilutions. (A,C,D,M)
30. discuss overall community pharmacy operations and general responsibilities of the pharmacy technician with regard to the dispensing of prescription drugs (A,B,C,D,E,F,G,I,J,P,M,Q)
31. discuss the various types of prescriptions that are processed in a community pharmacy. (B,C,G,I)
32. discuss the advantages of electronic prescribing in modern-day community pharmacy practice. (B,G,I,J,R,T)
33. explain the federal laws on filling, refilling, and transferring of controlled substances. (G,I,J,S)
34. describe controls necessary for reviewing prescriptions of scheduled drugs, including the identification of possible forgeries (A,F,G,J,K,P,S)
35. describe the parts of a patient profile, detail the steps required to select a patient from the database, and discuss the importance of including up-to-date insurance, allergy and adverse drug reaction information. (E,F,G,I,J,T,Q,U)
36. identify the parts of a prescription stock label and know the importance of comparing National Drug Code numbers in medication selection and filling. (G,I,Q,U)
37. describe the parts of a medication container label. (G,I)
38. explain the step by step procedures for processing new and refill prescription orders (F,G,I,J,K,L,P,R)
39. explain how automation is utilized in community pharmacy to minimize the medication errors. (I,J,Q,R)
40. discuss the importance of a final check and verification by the pharmacist prior to dispensing to the patient (A,E,G,M,Q,R,S,U,V)
41. identify the OBRA-90 mandated regulation that must be executed by the pharmacy technician prior to dispensing medications to patients. (A,B,E,F,G,H,M,S)
42. describe the roles, responsibilities, and limitations of the technician in the sale of over-the-counter (OTC) drugs, dietary supplements, and medical supplies, especially for patients with diabetes. (A,G,C,E,F,H,J,M,N,S)
43. accurately process special OTC sales, such as Schedule V cough syrups, decongestants containing pseudoephedrine, and the emergency contraceptives (A,C,E,F,J,K,M,S)
44. explain the importance of necessary cash register management functions (K,N,R)
45. identify procedures for inventory management, including the purchasing, receiving, and storage of prescription drugs, including controlled substances (A,E,N,O,P,R).
46. demonstrate mathematical principles in calculating markup, discounts, and average wholesale price. (A,D,G,M,N).
47. define and explain the terms pharmacy benefits manager (PBM), deductible, co-payment, coinsurance, tiered co-pay, and prior authorization (A,D,L,N).
48. discuss drug insurance coverage for private, Medicaid, Tricare, and Medicare plans (A,N).
49. process a workers’ compensation insurance claim. (E,N).
50. define the term coordination of benefits. (N,U).
51. list options for lower prescription costs for uninsured patients. (A,N,O,U).
52. identify the necessary insurance information needed to process online claims for prescriptions. (A,G,N,U).
53. calculate days’ supply of medication for online billing. (D,G,N,M).
54. resolve problems with online claims processing, audits, and charge-backs. (A,E,L,P,U,V).
55. define the term compounding and describe common situations in which compounding is required, and identify rationale and examples of nonsterile compounding. (A,B,G).
56. discuss the impact of the Food and Drug Administration Modernization Act (FDAMA) of 1997 on the practice of a compounding pharmacy. (S,V).
57. define the regulatory role of the state board of pharmacy (G,H,J,S,T).
58. identify quality standards for nonsterile compounding contained in USP Chapter <795> including product selection and beyond-use or expiration dating. (I,J,L,S,U).
59. review and follow good compounding practices in the pharmacy (A,E,I,L,U).
60. discuss reasons and process for accreditation of specialty compounded pharmacies. (A,B,S).
61. identify the minimum training and attire requirements for pharmacy technicians in a compounding pharmacy. (D,E,G,J,L,Q,S,U).
62. distinguish the components and purpose of a master control record from a compounding log. (I,R,U).
63. define the term percentage of error and understand how the concept relates to accuracy in the compounding pharmacy. (D,M,Q,R,U).
64. identify and describe the function of the equipment used for the weighing, measuring, and compounding of pharmaceuticals (I,M).
65. explain the proper techniques for weighing pharmaceutical ingredients, measuring liquid volumes, and compounding nonsterile preparations. (I,M,Q,U).
66. define the various terms used for comminution and blending of pharmaceuticals ingredients (M).
67. examine the processes by which solutions, suspensions, ointments, creams, powders, suppositories, and capsules are prepared. (A,M).
68. calculate common mathematical problems that occur in a compounding pharmacy (D,M).
69. identify the steps that are necessary in the compounding process
70. compare reimbursement procedures of a compounding pharmacy and retail
    pharmacy (D,N,P)
71. identify references with a specialty focus on compounding. (A,M,R)
72. describe the classifications and functions of a hospital and its organizational
    framework. (B)
73. identify the roles of major hospital committees that impact pharmacy (B,S,V)
74. describe the role of the institutional review board (IRB) in approving
    investigational drug studies S,V)
75. identify services of a hospital pharmacy department (B,K,N)
76. describe the roles and responsibilities of the director of pharmacy, pharmacist,
    and pharmacy technician in a hospital pharmacy (B,E,F,G,J,K,N,S,T,V)
77. describe the types of medication orders and order entry system.(C,G,J,K)
78. explain the unit dose dispensing system and the unit dose cart used in hospital
    pharmacy practice. (A,D,E,G,J,K,L,M)
79. identify the advantages and disadvantages of a unit dose vs. a robotic drug
    distribution system. (J,K,Q)
80. explain the proper procedure for preparing, labeling, and repackaging of
    medications (A,C,D,E,I,J,K)
81. describe the process of medication filling and dispensing in a hospital
    pharmacy. (C,D,E,K,J,K,M)
82. describe specialty services, such as intravenous admixtures and total parenteral
    nutrition. (C,D,E,K,U)
83. discuss the advantages of an automated floor stock system for medications,
    including narcotics. (A,J,K,L,P,U)
84. describe the purpose and advantages of an electronic medication administration
    record. (G,K,P,R,U)
85. discuss the role of automation and inventory control in the hospital.
    (K,K,L,P,R,U)
86. describe inventory management of pharmaceuticals, including drug-bidding,
    ordering, receiving, and storage process. (E,J,O,P)
87. explain the major role of the Joint Commission in establishing accreditation
    standards for hospitals.(R,S,T)
88. describe the extent of medical and medication errors and their effects on
    patient health and safety. (A,E,O,R,V)
89. identify specific categories of medication errors. (R,V)
90. discuss examples of medication errors commonly seen in pharmacy settings.
    (R,U,V)
91. define strategies, including the use of automation, for preventing medication
    errors. (A,K,L,R,U,V)
92. identify the common systems available for reporting medication errors.
    (Q,R,V)
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.

- 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

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Equity/Compliance Coordinator