

**Bossier Parish Community College
Master Syllabus**

Course Prefix and Number: PHAR 104

Credit Hours: 5

Course Title: Pharmacology for Pharmacy Technicians

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

Course Co- requisites: PHAR 102, PHAR 102L, PHAR 101

Textbooks: Ballington; Pharmacology for Technicians, Ballington; 6th edition

Course Description:

This course for the pharmacy technician clinical student presents basic pharmacology with emphasis on drug therapy. The course content includes drug laws, terminology, therapeutic classes of drugs, indications, side effects, contraindications, generic and trade names and calculations.

Learning Outcomes:

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

- A- Communicate clearly and effectively, both verbally and in writing. (1.4)
- B- Describe wellness promotion and disease prevention concepts. (2.4)
- C- Demonstrate basic knowledge of anatomy, physiology, pharmacology, and medical terminology relevant to the pharmacy technician's role. (2.5)
- D- Describe the investigational drug process, medications being used in off-label indications, and emerging drug therapies. (2.9)
- E- Support wellness promotion and disease prevention programs. (2.11)
- F- Explain accepted procedures in delivery and documentation of immunizations.(3.21)
- G- Prepare, store and deliver medication products requiring special handling and documentation. (3.22)
- H- Process, handle, and demonstrate administration techniques and document administration of immunizations and other injectable medications. (3.29)
- I- Apply the appropriate medication use process to investigational drugs, medications being used in off-label indications, and emerging drug therapies, as required. (3.30)
- J- Apply patient and medication safety practices in aspects of the pharmacy technician's roles. (4.2)
- K- Explain how pharmacy technicians assist pharmacists in responding to emergent patient situations, safety and legally. (4.3)
- L- Explain basic safety and emergency preparedness procedures applicable to pharmacy practice. (4.4)

To achieve the learning outcomes, the student will:

Chapter 1:

1. Recognize the important contributors, events, and resources in pharmacology through the ages. (C)
2. Describe the term pharmacology(C)
3. Define drugs. (C)
4. Describe various drug sources and categories including complementary and alternative medicine. (C) (D)
5. List the procedure for getting a new drug to market. (C)

Chapter 2

6. Describe the role of receptors in the body. (C)
7. Compare and contrast the meaning of agonist and antagonist in terms of pharmacology. (C)
8. Describe the four processes of pharmacokinetics: absorption, distribution, metabolism, and excretion. (C)
9. Define the terms used to describe the beneficial and harmful effects of drugs. (C)
10. Describe the way through which common drug interactions occur. (C)

Chapter 4

11. Describe the differences between bacteria and fungi.(C)
12. Identify the major types of antibiotics by drug class. (C)
13. Determine which auxiliary labels to use when dispensing major types of antibiotics and antifungals. (C)(J)
14. Define therapeutic effects, side effects, contraindications, and administration routes of major antibiotics and antifungals. (C)
15. Utilize appropriate antibiotic and antifungal general drug terminology in written and oral communication. (C)
16. Describe the treatments for common sexually transmitted infections. (C)
17. Discuss storage requirements of liquid antibiotics. (C)
18. List common ophthalmic antibiotics. (C)

Chapter 5

19. Explain the differences among bacteria, fungi, and viruses, and why the drugs used to treat them must have very different mechanisms of action. (C)
20. Differentiate antiviral and antiretroviral drugs by their indications, therapeutic effects, side effects, dosages, and administration. (C)
21. Use antiviral antiretroviral terminology correctly in written and oral communication. (A)
22. Identify drugs used for HIV and understand their synergism. (C)
23. Describe the importance of immunization. (F)(H)
24. Identify immunization that are provided through pharmacies. (F)(H)
25. Describe the role of the pharmacy technician in immunization process. (F)(H)
26. Identify the common vaccines and their side effects. (C)

Chapter 6

27. Describe the division of the nervous system, their functions, and their interactions with drugs. (C)
28. Describe the concepts of general and local anesthesia, and the functions of these agents (C)
29. Define the action of neuromuscular blocking agents in reducing muscle activity. (C)
30. Describe the different schedules of narcotic and narcotic/nonnarcotic combination drugs and the role of the technician in monitoring use of these drugs. (C)
31. Describe the various treatments for migraine headache. (C)

Chapter 7

32. Differentiate antidepressant, antipsychotic, and antianxiety agents. (C)
33. Discuss the antidepressant classes, their uses, and their side effects. (C)
34. Describe the mechanism of lithium and other drugs used in treating bipolar disorders. (C)
35. List the antipsychotic and the drugs that prevent their side effect. (C)
36. Define anxiety, state its symptoms, and describe the drugs used in its treatment. (C)
37. Recognize the course and treatment of panic disorder, insomnia, and alcoholism. (C)

Chapter 8

38. Describe the physiologic processes that occur in epilepsy. (C)
39. Classify seizures and the goals of antiseizure therapy. (C)
40. Describe the specific drugs used in the treatment of different classes of seizures. (C)
41. Describe the pathophysiology and manifestations of Parkinson's disease. (C)
42. Explain drug treatments for Parkinson's disease. (C)
43. Identify drugs used to treat attention deficit disorder. (C)
44. Recognize drugs used to manage Alzheimer's disease. (C)

Chapter 9

45. Differentiate between the main pulmonary diseases. (C)
46. Describe the pathophysiology and treatment of asthma. (C)
47. Describe the pathophysiology and treatment of chronic obstructive pulmonary disease. (C)
48. Describe the reemergence of tuberculosis and its associated treatments. (C)
49. Describe the mechanism of action and uses of antitussives, expectorants, decongestants, and antihistamines(C)
50. Outline smoking cessation plans and supportive therapy. (B)(E)

Chapter 10

51. Describe basic gastrointestinal physiology. (C)
52. Describe drug treatments for GI diseases. (C)
53. Describe gastroesophageal reflux disease and its ramifications. (C)
54. Discuss antidiarrheal agents, and explain their mechanisms of action(C)
55. Describe the role of fiber in the digestive process. (C)
56. Discuss laxatives and their mechanisms of action. (C)
57. Identify the chemoreceptor trigger zone and discuss its role in nausea. (C)
58. State the antiemetic's that act on the CTZ and their mechanism of action. (C)
59. Describe methods to prevent and treat hepatitis. (C)

Chapter 11

60. Explain the renal system, its importance, and how it works. (C)
61. Describe the drugs used to treat the renal system (C)
62. Describe the causes and treatments of urinary tract infections. (C)
63. Explain the classes of diuretics and how they work. (C)

Chapter 12

64. Describe the basic anatomy and physiology of the cardiovascular system (C)
65. Describe the drugs and treatments for each type of cardiovascular disease. (C)
66. Recognize anticoagulant and antiplatelet drugs, and describe their function. (C)
67. Describe a cardiovascular accident (CVA) and the drugs used to treat it. (C)
68. Identify drugs used to treat hyperlipidemia, and its role in heart disease and cerebrovascular accident treatment(C)

Chapter 13

69. Define the role of muscle relaxants. (C)
70. Identify muscle relaxants and their various mechanisms of action(C)
71. Identify the nonnarcotic analgesics, and describe their uses and mechanisms of action. (C)
72. Identify agents used to treat osteoarthritis, and gout and discuss their usage and side effects. (C)
73. Define autoimmune disease. (C)
74. Describe the treatment of autoimmune disorders including rheumatoid arthritis and systemic lupus erythematosus. (C)

Chapter 14

75. Summarize the concept of hormones and how they regulate the body. (C)
76. Explain the treatments for disorders of the thyroid. (C)
77. Discuss adrenal sex hormones and male erectile dysfunction. (C)
78. Outline the concepts of hormone replacement therapy. (C)
79. Distinguish the various formulations of oral contraceptive. (C)
80. Outline the drugs used urgently during labor and at delivery. (C)
81. Describe the disease of the genital systems and their prevention. (C)
82. List commonly used corticosteroids(C)
83. Summarize diabetes and the proper treatment and care of patients. (C)
84. State the application of growth hormone. (C)

Chapter 15

85. Describe the skin as an organ. (C)
86. Describe the physiology of the skin. (C)
87. Describe the classes of topical drugs and the skin conditions they treat. (C)
88. Explain the action of topical corticosteroids and their application (C)
89. Recognize the classes of antiseptics and disinfectants. (C)
90. Recognize ophthalmic and otic agents and their uses. (C)

Chapter 16

91. Explain the basic physiology of malignancy and tumor cell growth (C)
92. Identify and provide examples of traditional chemotherapy and cytotoxic drugs, hormonal drug therapies, and targeted drug therapies (C)(C)(G)
93. Identify the generic names, brand names, indications, dosage ranges, side effects, and cautions and considerations associated with the drugs commonly used to treat cancer. (C)
94. Explain strategies that help prevent chemotherapy-related errors(C)G)
95. Identify current investigational therapies and alternative therapies used to treat cancer.(D)(I)
96. Describe the use of investigational drugs. (G)(I)
97. Explain how medications are utilized for off-labeled indications. (G)(I)
98. Describe the process of emerging drug therapy. (G)(I)
99. Describe current standards and regulations regarding investigational drugs. (G)(I)

Chapter 17

100. Describe how the body uses vitamins and electrolytes. (C)
101. Define obesity. (C)
102. Describe the prescription treatment for obesity. (C)
103. Compare and contrast enteral and parenteral nutrition, including its purposes, ingredients, stability, and complications. (C)
104. List the antidotes used to treat occurrences of poisoning. (C)
105. Describe the importance of the emergency cart, its supplies, and its maintenance. (K)(J)

106. Describe the role of the pharmacy technician in the event of a bioterrorist attack.
(K)(J)(L)
107. Describe poisons and antidotes. (C)

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 70% average on comprehensive midterm and final tests
- minimum 70% average on chapter tests
- overall minimum average of 70% in the course
- successful completion of an oral and written report on a selected pharmaceutical

Course Grading Scale

- A- 90% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- B- 80% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- C- 70% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- D- 60% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- F- less than 60% of the total possible points or less than 70% average on the comprehensive midterm and final tests or less than 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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COORDINATOR FOR SECTION 504 AND ADA

Angie Cao, Student and Disability Services Specialist

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Equity/Compliance Coordinator

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For assistance with study skills or time management contact the SNAH Student Success Coordinator, Sandra Roberson (B- 145; 678-6148; sroberson@bpcc.edu)

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