



Western Technical College

10543103 Nursing Pharmacology

Course Outcome Summary

Course Information

Description	This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.
Career Cluster	Health Science
Instructional Level	Associate Degree Courses
Total Credits	2
Total Hours	36

Textbooks

Open Educational Resource: *Nursing Pharmacology*. Copyright 2023. Chippewa Valley Technical College. Publisher: Open RN. <https://wtcs.pressbooks.pub/pharmacology2e/>

HESI Package (Dosage Calculation Online, Practice and Proctored Assessment Unlimited, HESI Case Studies, EAQ for NCLEX, 3 Day Review Course). Publisher: Elsevier Science. Required.

Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Live Responsibly: Foster Accountability
3. Refine Professionalism: Act Ethically
4. Refine Professionalism: Improve Critical Thinking

Program Outcomes

1. Integrate professional nursing identity reflecting integrity, responsibility, and nursing
2. Integrate theoretical knowledge to support decision making
3. Integrate the nursing process into patient care across diverse populations

Course Competencies

1. Apply basic pharmacology principles to medication management

Assessment Strategies

- 1.1. in an oral, written or performance assessment
- 1.2. Pre-class assignment
- 1.3. Written Objective Test

Criteria

Your performance will be successful when you:

- 1.1. discuss the processes of pharmacokinetics
- 1.2. use multiple professional resources including technology to identify pertinent information related to drugs
- 1.3. describe the processes of pharmacodynamics
- 1.4. consider pharmacodynamic differences across the life span
- 1.5. support your analysis with relevant evidence
- 1.6. use correct medical terminology
- 1.7. differentiate among prescription drugs, over the counter drugs, herbals, and dietary supplements

Learning Objectives

- 1.a. Explain key terms used in pharmacology.
- 1.b. Compare the significance of the chemical name, generic name, trade name, official name, and brand name of a medication.
- 1.c. Provide two examples of drug resources used by nurses.
- 1.d. Explain the difference between therapeutic effect and therapeutic regime.
- 1.e. Explain the common drug interactions: Additive effect, antagonistic effect, displacement, incompatibility, interference, and synergistic effect.
- 1.f. Compare the action of agonist and antagonist medications.
- 1.g. Explain and differentiate among each of the following adverse medication reactions: desired action, side effects, toxic effect, allergic reaction, idiosyncratic reaction, paradoxical reaction, anaphylactic response, and teratogenic effect.
- 1.h. Explain the terms: biotransformation, bioequivalence, medication half-life, and the cytochrome P-450 system.
- 1.i. Explain the pharmacokinetic processes: absorption, metabolism, distribution, and excretion across the Lifespan.
- 1.j. Explain the first pass effect.
- 1.k. Explain the importance of each of the following factors in the passage of a medication through the body: stomach acidity, the solubility of drug in fat, drug protein binding, tubular secretion, and glomerular filtration.
- 1.l. Examine considerations in giving medications to clients across the lifespan, including cultural, social, and environmental factors.
- 1.m. Apply the nursing process related to the administration of medications across the lifespan.

2. Examine legal, ethical, social, and cultural issues related to medication administration

Assessment Strategies

- 2.1. in an oral, written or performance assessment
- 2.2. Written Objective Test
- 2.3. Pre-class assignment

Criteria

Your performance will be successful when you:

- 2.1. support your analysis with relevant evidence
- 2.2. identify drug administration guidelines within the State Nurse Practice Act

- 2.3. identify nursing responsibility to prevent and respond to medication errors
- 2.4. identify nursing responsibilities associated with controlled substances
- 2.5. identify ethical responsibilities as they relates to medication errors
- 2.6. nursing response reflects respect for patient's rights and responsibilities with drug therapy
- 2.7. nursing actions are within the scope of nursing practice as it relates to the administration of medication.
- 2.8. demonstrate patient-centered care by respecting patient's gender, psychosocial and cultural needs
- 2.9. identify nursing responsibilities associated with safe medication administration
- 2.10. identify nursing responsibilities associated with patient medication education

Learning Objectives

- 2.a. Explain the key terms presented in assigned reading.
- 2.b. Explain important medication legislation passed at the state and federal levels and describe the impact of medication legislation on drug therapy development and nursing.
- 2.c. Explain the differences between scheduled drugs, controlled substances, over-the-counter drugs, and the nurse's responsibility.
- 2.d. Examine the relationship of the Wisconsin State Nursing Practice Act and the scope of nursing practice (including delegation) as it relates to medication administration.
- 2.e. Examine and list specific nursing activities related to assessing, diagnosing, planning, implementing and evaluating the client's response to medications.
- 2.f. Summarize specific nursing behaviors that the nurse can perform to respect client's rights and responsibilities during drug therapy.
- 2.g. Explain the rights, checks, and ethical responsibilities with drug administration the nurse follows to prevent medication errors.
- 2.h. Explain how the concept of health literacy relates to teaching clients about medication compliance and administration and with respect for gender, socio-cultural, and psychological needs.
- 2.i. Identify the common acceptable abbreviations in a written prescription order.

3. Apply components of the nursing process to the administration of antimicrobial drugs

Assessment Strategies

- 3.1. in an oral, written or performance assessment
- 3.2. Written Objective Test
- 3.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 3.1. cite the classifications and actions of antimicrobial drugs
- 3.2. give examples of when, how and to whom antimicrobial drugs may be administered
- 3.3. identify the side effects and special considerations associated with antimicrobial therapy
- 3.4. identify considerations and implications of using antimicrobial medications across the life span
- 3.5. apply evidence-based concepts when using the nursing process
- 3.6. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 3.7. identify and interpret related laboratory tests

Learning Objectives

- 3.a. Examine the classifications of antimicrobial drugs.
- 3.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the antimicrobial agents: antibiotics, antivirals, antifungals, antituberculars, antiparasitics, antiprotozoals, anthelmintic & antimalarial agents.
- 3.c. Apply evidence-based concepts while using nursing process to assist clients in the management of antimicrobial medication therapy.
- 3.d. Explain considerations and implications of using antimicrobial medications across the lifespan.
- 3.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 3.f. Examine and interpret related laboratory tests to include peak and trough.

4. Apply components of the nursing process to the administration of autonomic nervous system drugs

Assessment Strategies

- 4.1. in an oral, written or performance assessment

- 4.2. Written Objective Test
- 4.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 4.1. cite the classifications and actions of autonomic nervous system drugs
- 4.2. give examples of when, how and to whom autonomic nervous system drugs may be administered
- 4.3. identify the side effects and special considerations associated with autonomic nervous system drugs
- 4.4. nursing response evidences considerations and implications of using autonomic nervous system drugs across the life span
- 4.5. apply evidence-based concepts when using the nursing process
- 4.6. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 4.7. identify and interpret related laboratory tests

Learning Objectives

- 4.a. Examine the classifications of drugs that are used to augment, block, or mimic the autonomic nervous system.
- 4.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the autonomic nervous system medication classifications: adrenergic agonists; adrenergic blockers; cholinergic; anticholinergic; and antispasmodics.
- 4.c. Compare and contrast the actions of anticholinergic and antispasmodic medications on the gastrointestinal tract.
- 4.d. Apply evidence-based concepts while using nursing process to assist clients in the management of autonomic and antispasmodic medication therapy.
- 4.e. Explain considerations and implications of using autonomic nervous system medications across the lifespan.
- 4.f. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 4.g. Examine and interpret related laboratory tests.

5. Apply components of the nursing process to the administration of respiratory system drugs

Assessment Strategies

- 5.1. in an oral, written or performance assessment
- 5.2. Written Objective Test
- 5.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 5.1. cite the classifications and actions of respiratory system drugs
- 5.2. give examples of when, how and to whom respiratory system drugs may be administered
- 5.3. identify the side effects and special considerations associated with respiratory system medications
- 5.4. identify the considerations and implications of using respiratory systems medications across the life span
- 5.5. apply evidence-based concepts when using the nursing process
- 5.6. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 5.7. identify and interpret related laboratory tests

Learning Objectives

- 5.a. Examine the classifications of the medications used in the treatment of upper and lower respiratory system disease processes.
- 5.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the respiratory medications: antihistamines, bronchodilators, steroids, antitussives, expectorants, and mucolytics.
- 5.c. Apply evidence-based concepts while using nursing process to assist clients in the management of respiratory medication therapy.
- 5.d. Explain considerations and implications of using respiratory medications across the lifespan.
- 5.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.

5.f. Examine and interpret related laboratory tests

6. Apply components of the nursing process to the administration of cardiovascular and renal systems drugs

Assessment Strategies

- 6.1. in an oral, written or performance assessment
- 6.2. Written Objective Test
- 6.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 6.1. cite the classifications and actions of cardiovascular drugs
- 6.2. cite the classifications and actions of renal system drugs
- 6.3. give examples of when, how and to whom cardiovascular system drugs may be administered
- 6.4. give examples of when, how and to whom renal system drugs may be administered
- 6.5. identify the side effects and special considerations associated with cardiovascular and renal system drug therapy
- 6.6. identify considerations and implications of using cardiovascular system medications across the life span
- 6.7. identify considerations and implications of using renal system medications across the life span
- 6.8. apply evidence-based concepts when using the nursing process
- 6.9. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 6.10. identify and interpret related laboratory tests

Learning Objectives

- 6.a. Examine the classifications of the medications used in the treatment of common cardiac and renal disorders.
- 6.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the most commonly used cardiac and renal medications: antianginals, peripheral vasodilators, antidysrhythmics, antihyperlipidemic agents, cardiotonics, antihypertensives, diuretics, anticoagulants, antiplatelets, and thrombolytics.
- 6.c. Apply evidence-based concepts while using the nursing process to assist clients in the management of cardiac and renal disorders.
- 6.d. Explain considerations and implications of using cardiac and renal system medications across the lifespan.
- 6.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 6.f. Examine and interpret related laboratory tests.

7. Apply components of the nursing process to the administration of gastrointestinal system drugs

Assessment Strategies

- 7.1. in an oral, written or performance assessment
- 7.2. Written Objective Test
- 7.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 7.1. cite the classifications and actions of gastrointestinal system drugs
- 7.2. give examples of when, how and to whom gastrointestinal system drugs may be administered
- 7.3. identify the side effects and special considerations associated with gastrointestinal system drug therapy
- 7.4. identify considerations and implications of using gastrointestinal system medications across the life span
- 7.5. apply evidence-based concepts when using the nursing process
- 7.6. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 7.7. identify and interpret related laboratory tests

Learning Objectives

- 7.a. Examine the classifications of medications affecting the gastrointestinal system.
- 7.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the gastrointestinal medication classifications.
- 7.c. Compare and contrast the actions of anticholinergic and antispasmodic medications on the gastrointestinal tract.
- 7.d. Apply evidence-based concepts while using nursing process to assist clients in the management of gastrointestinal medication therapy.
- 7.e. Explain considerations and implications of using gastrointestinal medications across the lifespan.
- 7.f. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 7.g. Examine and interpret related laboratory tests.

8. Apply components of the nursing process to the administration of central nervous system drugs

Assessment Strategies

- 8.1. in an oral, written or performance assessment
- 8.2. Written Objective Test
- 8.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 8.1. cite the classifications and actions of central nervous system drugs
- 8.2. cite the classifications and actions of drugs used to treat psychiatric disorders
- 8.3. give examples of when, how and to whom central nervous system drugs may be administered
- 8.4. identify the side effects and special considerations associated with central nervous system drug therapy
- 8.5. identify considerations and implications of using central nervous system medications across the life span
- 8.6. apply evidence-based concepts when using the nursing process
- 8.7. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 8.8. identify and interpret related laboratory tests

Learning Objectives

- 8.a. Examine the classifications of the medications used in the treatment of common central nervous system (CNS) disorders.
- 8.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the most commonly used CNS medications: antimigraine agents; anticonvulsants; antiepileptics; antiemetics; antivertigo agents; antianxiety agents; antiparkinsonian agents; antidepressants; antipsychotics; antimanics; sedatives; hypnotics; and CNS stimulants.
- 8.c. Apply evidence-based concepts while using the nursing process to assist clients in the management of CNS disorders.
- 8.d. Explain considerations and implications of using CNS medications across the lifespan.
- 8.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 8.f. Examine and interpret related laboratory tests.

9. Apply components of the nursing process to the administration of endocrine system drugs

Assessment Strategies

- 9.1. in an oral, written or performance assessment
- 9.2. Written Objective Test
- 9.3. Pre-Class Assignment

Criteria

Your performance will be successful when you:

- 9.1. cite the classifications and actions of endocrine system drugs
- 9.2. give examples of when, how and to whom endocrine system drugs may be administered
- 9.3. identify the side effects and special considerations associated with endocrine system drug therapy
- 9.4. identify the considerations and implications of using endocrine system medications across the life span
- 9.5. apply evidence-based concepts when using the nursing process

- 9.6. identify indications, side effects and potential drug interactions associated with the use of herbal supplements
- 9.7. identify and interpret related laboratory tests

Learning Objectives

- 9.a. Examine the classifications of the medications used in the treatment of endocrine system disorders.
- 9.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the endocrine disorder medications: insulin; oral hypoglycemics; glucocorticoids; steroids; corticosteroids; estrogen; progestin; thyroid, parathyroid, and pituitary medications.
- 9.c. Apply evidence-based concepts while using nursing process to assist clients in the management of endocrine medication therapy.
- 9.d. Explain considerations and implications of using endocrine medications across the lifespan.
- 9.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 9.f. Examine and interpret related laboratory tests.

10. Apply components of the nursing process to the administration of analgesic and musculoskeletal system drugs

Assessment Strategies

- 10.1. in an oral, written or performance assessment
- 10.2. Pre-Class Assignment
- 10.3. Written Objective Test

Criteria

Your performance will be successful when you:

- 10.1. cite the classifications and actions of analgesics
- 10.2. cite the classifications and actions of musculoskeletal system drugs
- 10.3. give examples of when, how and to whom analgesics and musculoskeletal system drugs may be administered
- 10.4. identify the side effects and special considerations associated with analgesics
- 10.5. identify the side effects and special considerations associated with musculoskeletal system drugs
- 10.6. identify the considerations and implications of using analgesics across the life span
- 10.7. identify the considerations and implications of using musculoskeletal system medications across the life span
- 10.8. apply evidence-based concepts when using the nursing process

Learning Objectives

- 10.a. Examine the classifications of the medications used in the treatment of pain and musculoskeletal disorders.
- 10.b. Explain the actions, therapeutic effects, uses, contraindications, and side/adverse effects of the analgesic and musculoskeletal system medications: opioids, non-steroidal anti-inflammatories (NSAIDS), corticosteroids, anti-gout, antirheumatics, immunomodulators, antipyretics, and skeletal muscle relaxants.
- 10.c. Apply evidence-based concepts while using the nursing process to assist clients in the management of pain and musculoskeletal disorders.
- 10.d. Explain considerations and implications of using analgesic and musculoskeletal disorder medications across the lifespan.
- 10.e. Explain the indications, side effects and potential drug interactions associated with the use of herbal supplements and/or complementary therapies.
- 10.f. Examine and interpret related laboratory tests.