

**Ralph R Willis Career and Technical Center
School of Practical Nursing
Pharmacology**

OUTLINE	Theory	Testing	Lab	Clinical Practice
Chapter 33	4	1		
Chapter 34	4	1	4	4
Chapter 35	4	1	4	4
Chapter 36	4	1	4	4
Chapter 32	4	1		
Final		2		
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	20	7	12	12

Chapter 33 Pharmacology and Preparation for Drug Administration

Chapter 34 Administering Oral, Topical, and Inhalant Medications

Chapter 35 Administering Intradermal, Subcutaneous, and Intramuscular Injections

Chapter 36 Administering Intravenous Solutions and Medications

Chapter 32 Complementary and Alternative Therapies

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Placement: Semester 2

Course Hours: 51 Hours

Theory: 20 Hours

Testing: 7 Hours

Lab: 12 Hours

Clinical Practice: 12 Hours

Clinical Hours Integrated MS:

WVEIS:

TEXTBOOKS:

1. deWitt, Susan C. / O'Neal, Patricia; **FUNDAMENTAL CONCEPTS AND SKILLS FOR NURSING**, Saunders/Elsevier; 4th. edition; 2014.
2. deWitt, Susan C. / O'Neal, Patricia; **STUDY GUIDE FOR FUNDAMENTAL CONCEPTS & SKILLS FOR NURSING**, Philadelphia, Elsevier/Saunders; 4th. edition; 2014
3. deWitt, Susan C. / O'Neal, Patricia; **Virtual Clinical Excursions Pacific View Regional Hospital FOR FUNDAMENTAL CONCEPTS & SKILLS FOR NURSING**, Philadelphia, Elsevier/Saunders; 4th. edition; 2014
4. HESI/PASS Assured

Course Description

This course is an introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification. Topics include the skills, roles, and responsibilities of the nurse in safe administration of medications within an ethical/legal framework. Dosage calculations and medication administration skills are practiced in a laboratory setting. Pharmacology is integrated throughout the medical- surgical, geriatric and pediatric and obstetric courses interrelating the body system with the disease process as well as the drug classification, patient education, wellness, maintenance, alternative therapies and cultural considerations.

Course Objectives

At the end of this course the student will:

1. Describe how drugs are classified.
2. Explain the legal implications for administration of drugs by nurses.
3. Trace the general actions of drugs in the body.
4. Discuss measures used to prevent medication errors.
5. Discuss routes of medication administration.
6. Discuss special consideration of medication administration across the life span.
7. Calculate medication dosage.
8. Prepare and administer medication in the following form: Oral, Topical, Inhalant, Intradermal, Subcutaneous, Z-Track and Intramuscular.

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Clinical Practicum:

Completed in Acute and Long-Term Care.

Methods of Teaching:

1. Lecture, discussion, role playing emphasizing critical thinking
2. Videos
3. PowerPoint
4. Computer-assisted instruction- VCE – Case Studies
5. Demonstration
6. Individual and Group Conference
7. Written Exams
9. Clinical Lab Practice/ Clinical Setting
10. Evaluations

Student Responsibilities:

1. Read assigned chapter.
2. Refer to and follow student monthly calendar for exam dates.
3. Attend lectures and demonstrations.
3. Complete activities as assigned.
5. Participate in class/lab activities.
6. Discuss critical thinking activities associated with the lesson.
7. Refer and follow the policies as outlined and discussed in the Student Handbook.
8. Pass exams with a grade of 80% or higher.

Methods of Evaluation

1. The following letter grade system is utilized for theory:
A 93 - 100
B 86 - 92
C 80 - 85
F 79 - 0
2. The following grading calculation is utilized for theory:
Exams 60% Quizzes 10% Final 30%
3. Evaluation Tools:
 - a. Oral Presentations
 - b. Written Exams
 - c. Laboratory Skills
 - d. Homework Assignments
 - e. Computer Exams
 - f. Clinical Skills
4. Make-up Exam:
A student who misses an exam must be prepared to take the exam immediately upon return or as designated by the instructor. Students will automatically have 5% deducted.
5. Quizzes:
Students who are absent during a quiz will receive a Zero. Quizzes are NOT made up.
6. See student monthly calendar for schedule of exam dates.

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7. See Student Handbook for clinical grading guidelines.

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Chapter 33 Pharmacology and Preparation for Drug Administration
4hr

Testing 1 hr.

Lesson Content:

- I. Key Terms

- II. Pharmacology

- III. Uses for Drugs

- IV. Classification of Drugs

- V. Legal Control of Drugs
 - A. Drug Standards

- VI. Basic Concepts of Pharmacology
 - A. Drug Action and Pharmacokinetics
 - 1. Absorption
 - 2. Distribution
 - 3. Other Factors Affecting Drug Action
 - B. Drug Response and Pharmacodynamics
 - C. Drug and Food Incompatibilities

- VII. Medication Administration and Safety
 - A. Considerations for Infants and Children
 - B. Considerations for The Elderly
 - C. Considerations for Home Care
 - D. Types of Orders
 - E. Distribution of Drugs
 - F. Problems of Noncompliance

- VIII. Application of the Nursing Process
 - A. Assessment (Data Collection)
 - B. Nursing Diagnosis
 - C. Planning
 - D. Implementation
 - 1. Calculating the Drug Dosage to Be Given
 - a. Conversion Problems
 - 2. Practicing the Five Rights
 - E. Evaluation
 - F. Documentation

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Lesson Objectives:

Upon completing this chapter the student will:

1. Describe how drugs are classified.
2. Explain the legal implications for administration of drugs by nurses.
3. Trace the general actions of drugs in the body.
4. Discuss areas of concern regarding medication administration to children of the elderly.
5. Describe issues of medication administration in home care.
6. List three reasons why patients may be noncompliant with drug treatment.
7. Discuss measures used to prevent medication errors.

Clinical Practice:

1. Locate information about a drug, including action, use, usual dosage, side effects, interactions, recommended routes of administration, and nursing implications.
2. Identify information the patient must be taught to safely use a drug.
3. Demonstrate a method for accurately calculating a drug dosage.
4. Demonstrate safe practice in administration of medications.
5. Demonstrate the correct procedure for documenting medication administration.

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Chapter 34 Administering Oral, Topical, and Inhalant Medications

Theory- 4 hr.

Testing 1 hr.

Lab – 4 hr.

Clinical Practice-4hr.

Lesson Content:

- I. Key Terms

- II. Nursing Responsibilities in Medication Administration

- III. Classification of Drugs

- IV. Medication Orders
 - A. Dosage of Medications
 - B. Routes of Medication Administration
 - C. Regularly Scheduled Medication Orders
 - D. PRN Medication Orders
 - E. Stat and Single Dose Medication Orders
 - F. Renewal Orders
 - G. Stop or Discontinue Orders

- V. Medication Records
 - A. Medication Administration Record (MAR)
 - B. Medication Cards
 - C. Medication Administration and Technology

- VI. Medication Administration Systems
 - A. Unit-Dose System
 - B. Prescription System
 - C. Preparation of Oral Controlled Substances from A Dispenser
 - D. Topical Drugs

- VII. Application of the Nursing Process
 - A. Assessment (Data Collection)
 - B. Nursing Diagnosis
 - C. Planning
 - D. Implementation
 1. Oral Medication
 2. Eye and Ear Medications
 3. Nasal Medications
 4. Inhalation Medications
 5. Vaginal Medications
 6. Rectal Medications
 7. Topical Skin Medications

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E. Evaluation

VIII. Medication Error

Lesson Objectives:

Upon completing this chapter the student will:

1. Describe the legal and professional responsibilities of the LPN/LVN related to medication administration.
2. List the different classification of drugs based on their specific actions.
3. Identify the parts of a valid medication order.
4. Compare and contrast various medication record systems such as the medication
5. Discuss medication dispensing and delivery systems.
6. Discuss the advantages and disadvantages of the unit-dose system and the prescription system.
7. Consider special needs when administering oral and topical medications to an elderly patient.
8. Identify four principles to be followed when giving a medication through a feeding tube.
9. Discuss your responsibilities in the event of a medication error.

Clinical Practice

4 hrs

1. Demonstrate the accounting of doses of controlled drugs that must be withdrawn from the locked narcotics cabinet or dispensed from an automatic dispensing unit.
2. Give oral and topical medications using the Six Rights.
3. Prepare and apply topical medications such as eye ointments, eardrops, nasal medications, transdermal patches, and topical ointments.
4. Teach a patient to use a metered-dose inhaler.
5. Instill a vaginal and a rectal suppository safely and effectively.
6. Write a care plan for a patient who is receiving medication to include patient specific data, an identified nursing diagnosis, and interventions that you used.
7. Document medication administration and your patient's response to the therapy.

Skills & Steps

Skills:

1. Skill 34-1 Administering Oral Medications
2. Skill 34-2 Instilling Eye Medication
3. Skill 34-3 Administering Topical Skin Medications
4. Skill 34-4 Administering Medication Through a Feeding Tube

Steps:

1. Steps 34-1 Installing Otic Medication
2. Steps 34-1 Inserting a Rectal Suppository

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Chapter 35 Administering Intradermal, Subcutaneous, and Intramuscular Injections

Theory - 4 hr.

Testing 1 hr.

Lab – 4 hr.

Clinical Practice 4 hr.

Lesson Content:

- I. Key Terms

- II. Principles of Parenteral Injections

- III. Routes for Parenteral Medication
 - A. Intradermal Route
 - B. Subcutaneous Route
 - C. Intramuscular Route

- IV. Injection Equipment
 - A. Types of Syringes
 - B. Measurement Scales
 - C. Needle Gauge and Length
 - D. Preventing Needle Sticks
 - E. Syringe and Needle Selection
 - F. Preparing The Syringe for Use

- V. Parenteral Solutions
 - A. Using A Medication Ampule
 - B. Using A Medication Vial
 - C. Reconstitution of A Drug
 - D. Compatibility of Medications

- VI. Application of the Nursing Process
 - A. Assessment (Data Collection)
 - B. Nursing Diagnosis
 - C. Planning
 - D. Implementation
 1. Intradermal Injections
 2. Subcutaneous Injections
 3. Intramuscular Injections
 - a. Air Lock Technique
 - b. Intramuscular Injections in Children
 - c. The Z-Track Technique
 4. Anaphylactic Shock
 - E. Evaluation
 - F. Documentation

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Lesson Objectives

Upon completing this chapter the student will:

1. Identify the principles for safe and effective administration of intradermal, subcutaneous, and intramuscular injections.
2. List the routes used for administering parenteral medications and the advantages and disadvantages of each route for pediatric, adult, and elderly patients.
3. Discuss the signs, symptoms, and nursing management of anaphylactic shock.

Clinical Practice

4 hr

1. Choose the appropriate syringe and needle for the type of injection ordered.
2. Follow Standard Precautions when administering injections and disposing of used equipment.
3. Aseptically and accurately withdraw and measure the ordered dose of a medication from a vial or an ampule.
4. Demonstrate reconstitution of a drug from a powder.
5. Demonstrate the correct method for drawing up two types of drugs, including insulin, in one syringe.
6. Use the five rights of medication administration, also checking for patient drug allergies.
7. Locate the appropriate site on a patient to give an intradermal, subcutaneous, or intramuscular injection by identifying correct anatomic landmarks.
8. Correctly prepare, administer, and interpret the results of an intradermal injection, using the five rights and aseptic technique.
9. Correctly prepare and administer a subcutaneous injection with 100% accuracy.
10. Correctly prepare and administer an intramuscular injection with 100 % accuracy.
11. Correctly document injections administered after administration.

Skills & Steps:

Skills:

1. Skill 35-1 Administering an Intradermal Injection
2. Skill 35-2 Administering a Subcutaneous Injection
3. Skill 35-3 Administering an Intramuscular Injection

Steps:

1. Steps 35-1 Preparing a Syringe for Use
2. Steps 35-2 Withdrawing Medication from an Ampule
3. Steps 35-3 Withdrawing Medication from a Vial
4. Steps 35-4 Combining Insulins
5. Steps 35-5 Giving a Z-Track Injection

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Chapter 36 Administering Intravenous Solutions and Medications

Theory - 4 hr

Testing 1 hr.

Lab – 4 hr.

Clinical Practice 4 hr.

Lesson Content:

- I. Key Terms

- II. Intravenous Therapy

- III. LPN/LVN's Role in Intravenous Therapy

- IV. Types of Intravenous Solution

- V. Equipment for Intravenous Administration
 - A. Administration Sets
 - 1. Primary Intravenous Set
 - 2. Secondary, or Piggyback, Intravenous Set
 - 3. Parallel, or Y, Intravenous Set
 - 4. Controlled-Volume Intravenous Set
 - 5. Intermittent Intravenous Device (Saline or PRN Lock)
 - 6. Filters
 - B. Infusion Pumps and Controllers
 - C. Venous Access Devices
 - 1. Intravenous Needles and Catheters
 - 2. Central Venous Catheters and Peripherally Inserted Central Catheters
 - 3. Infusion Ports

- VI. Complications of Intravenous Therapy
 - A. Infiltration
 - B. Extravasation
 - C. Phlebitis
 - D. Bloodstream Infection
 - E. Other Complication

- VII. Application of The Nursing Process
 - A. Nursing Diagnosis
 - B. Planning
 - 1. Calculation of Flow Rates
 - C. Implementation
 - 1. Initiating Intravenous Therapy
 - 2. Managing Intravenous Therapy
 - 3. Administering Intravenous Medications
 - 4. Administering Heparin Infusions

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- D. Evaluation
 - 1. Documentation

Lesson Objectives

Upon completing this chapter the student will:

1. List four purposes for administering intravenous (IV) therapy.
2. Evaluate the advantages and potential problems of using an infusion pump to deliver fluids or medications.
3. Summarize the possible complications that can arise from the use of the IV route and the corrective actions you should take for each one.
4. State at least seven guidelines related to IV therapy of fluids or medications.
5. Summarize special considerations for elderly patients who need IV therapy.
6. Recognize the signs and symptoms of a blood transfusion reaction, and describe the steps you should take if one occurs.

Clinical Practice

4 hr

1. Prepare to give medications using each of the following methods:
 - A. Using an infusion pump
 - B. Using a second IV line as a piggyback
 - C. Using a controlled-volume device
 - D. Using an intermittent IV or a PRN (as-needed) lock
 - E. Giving the medication as a bolus
2. Devise a care plan with patient-specific data for a patient who needs IV fluid therapy.
3. Calculate the rate of flow of IV fluid from various IV orders.
4. Initiate IV therapy by performing venipuncture with an IV cannula (catheter over the stylet), using aseptic technique, and starting the ordered infusion.
5. Add a new bag of fluid to replace one from which the solution has infused.
6. Discontinue an IV infusion and evaluate the site and surrounding tissue.
7. Safely monitor a patient receiving a blood transfusion; document your actions and the patient's response to therapy.
8. Collect data on a patient who is receiving total parenteral nutrition; document your findings and the patient's response to therapy.

Skills & Steps:

1. Skill 36-1 Starting the Primary Intravenous Infusion
2. Skill 36-2 Hanging a New Solution Using an Existing Intravenous Infusion Setup
3. Skill 36-3 Administering Intravenous Piggyback Medication
4. Skill 36-4 Administering Medication via Saline or PRN Lock
5. Skill 36-5 Administering Medication with a Controlled-Volume Set
6. Skill 36-6 Administering Blood Products
7. Steps 36-1 Changing Intravenous Tubing
8. Steps 36-2 Adding Medication to an Intravenous Solution
9. Steps 36-3 Administering an Intravenous Bolus Medication (IV Push)
10. Steps 36-4 Discontinuing an Intravenous Infusion or PRN Lock

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Lesson Objectives

Upon completing this chapter the student will:

1. Discuss the use of complementary and alternative medicine (CAM) in integrative medicine.
2. Consider each therapy that is considered a part of CAM.
3. Examine five commonly used complementary and alternative therapies.
4. Contrast four mind-body therapies.
5. Direct patients to information needed to make a decision on whether to use an herbal remedy.
6. Describe the desired outcome of spinal manipulation during chiropractic treatment.

Clinical Practice

1. Assist patients in using relaxation and imagery.
2. Assess the use of complementary and alternative therapies by assigned patients.
3. Direct patients to information about complementary and alternative therapies.

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Final

2 hr.

Students will take and pass the final exam with an 80% or better for overall unit.