

LOS ANGELES COUNTY COLLEGE OF NURSING AND ALLIED HEALTH  
*School of Nursing*

**Nursing 111:**

**NURSING PHARMACOLOGY**

**Spring 2018**

**COURSE TITLE:** **N111 Nursing Pharmacology**

**PRE-REQUISITES:** Acceptance into the Nursing Program

**UNITS:** 1 Unit

**HOURS:** 3 hours per week

**LENGTH:** 7 Weeks

**PLACEMENT:** Semester 1

**CONCURRENCY:** All semester theory courses are taken concurrently with the clinical courses.

**COURSE DESCRIPTION:** This is an introductory course designed to serve as a foundation for the integration of pharmacology content into subsequent nursing courses. The student is introduced to the general aspects of drug standards, legislation, action and classification necessary to understand the role of drug therapy in the management of clients with common health problems.

The major classifications of drugs studied are fluid and electrolytes, antihypertensives, anti-inflammatory and pain management agents, antineoplastics, drugs affecting the respiratory system and to treat Tuberculosis.

The nurse's role and responsibility related to safe administration of drugs, including standard methods of dosage calculation, are emphasized throughout this course.

**COURSE OBJECTIVES:** Upon satisfactory completion of the course, the student will:

1. Discuss the nursing process in understanding the mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of selected pharmacologic agents for safe patient-centered care of individuals with common health problems.
2. Identify the electronic drug resources and references that provide information on basic concepts in pharmacology and regulations guiding the safe standards of medication administration.
3. State the collaborative relationships with healthcare providers to promote safe medication administration.
4. Discuss the legal/ethical implications of drug administration to improve quality of care for individuals with common health problems.

5. Identify the responsibilities of the nurse in decision-making for safe medication administration.
6. Identify the educational needs, teaching methodologies, and evidence-based practice on medication administration for individuals with common health problems.
7. Acknowledge the value of sociocultural variations of individuals with common health problems in relation to various practices and beliefs on medications.

STUDENT LEARNING  
OUTCOME:

Students competently identify the integration of pharmacological knowledge in the delivery of nursing care to clients receiving medications.

TEACHING  
METHODS:

Discussion, case studies, computer-assisted instruction, handouts, and lectures.

METHOD OF  
EVALUATION:

Students attain an overall cumulative score of 70% or higher on examinations and quizzes indicating attainment of student learning outcome.

Grade is calculated from:

3 exams consisting of 50 questions each

Exam 1: 33% of total grade

Exam 2: 33% of total grade

Final Exam: 34% of total grade

GRADING SCALE:

The percentage grading scale is used as the method of scoring and determining final grade in course (See the student handbook on grading policy).

REQUIRED READING:

Kee, J.L., Hayes, E., & Mc Cuiston, L. (2015). *Pharmacology A nursing process approach* (8<sup>th</sup> ed.). Philadelphia: Lippincott.

Kee, J.L., Hayes, E., & Mc Cuiston, L. (2015). *Pharmacology A nursing process approach* (8<sup>th</sup> ed.). *Study Guide*. Philadelphia: Lippincott.

LAC+USC Medical Center Protocols and Policies

Black Box Warning Medication Administration  
Policy #909

Medication Reconciliation  
Policy #721

High Alert Medications

Policy #910

(Note: To access the LAC+USC Medical Center Protocols and Policies, log-on to LAC+USC Intranet; click on “POLICIES AND PROCEDURES”, use the drop down menu to choose “LAC+USC Medical Center”, then under Policy Manuals use the drop down menu and click on “NURSING CLINICAL PROTOCOLS” or “NURSING STANDARDS”. Enter search criteria.

**All academic policies are strictly enforced.**

<b>Unit Title: Introduction to Drug Therapy</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Discusses basic concepts of pharmacology related to competent nursing practice.</p> <p>1. Defines the following terms:</p> <ul style="list-style-type: none"> <li>• Pharmacology</li> <li>• Generic names</li> <li>• Trade names</li> <li>• Pharmacokinetics</li> <li>• Pharmacodynamics</li> <li>• Adverse reaction</li> <li>• Toxic effects</li> </ul> <p>2. States the pharmacokinetics of drug actions in relation to absorption, distribution, metabolism, and excretion to include:</p> <ul style="list-style-type: none"> <li>• Effects of protein binding on drug absorption, distribution, metabolism and elimination</li> <li>• Side effects, adverse reactions, and drug toxicity</li> <li>• Peak and trough drug levels</li> </ul>	<p>A. Concepts of pharmacology:</p> <p>1. Definitions</p> <ul style="list-style-type: none"> <li>• Pharmacology</li> <li>• Pharmaceutic phase of drug action</li> <li>• Pharmacokinetic phase of drug action</li> <li>• Pharmacodynamic phase of drug action</li> </ul> <p>2. Basic concepts/process</p> <ul style="list-style-type: none"> <li>• Absorption</li> <li>• Distribution</li> <li>• Metabolism</li> <li>• Excretion</li> <li>• Other considerations               <ol style="list-style-type: none"> <li>a. Side effects</li> <li>b. Adverse reactions</li> <li>c. Drug toxicity</li> <li>d. Drug levels</li> </ol> </li> </ul>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 1-13, 14-20.</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L. (<b><u>Study Guide</u></b>), NCLEX Questions, pp. 1-4, 5-7.</p> <p><b><u>References:</u></b></p> <p>–Policy 909: Black Box Warning</p> <p>–Policy 721: Medication Reconciliation</p> <p>–Policy 910: High Alert Medications</p>

Unit Title: <b>Introduction to Drug Therapy (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
B. Discusses drug standards and regulations guiding nursing practice related to drug administration. <ol style="list-style-type: none"> <li>1. States the purpose and function of the FDA</li> <li>2. Describes federal legislation regarding medications</li> <li>3. Describes the schedules for controlled substances. Identifies the legal/ethical responsibilities of the nurse related to safe drug administration</li> </ol>	B. Legal/ethical: Accountability in medication administration: <ol style="list-style-type: none"> <li>1. FDA               <ul style="list-style-type: none"> <li>• Purpose</li> <li>• Function</li> </ul> </li> <li>2. Federal legislation               <ul style="list-style-type: none"> <li>• Federal Food, Drug, and Cosmetic Act</li> <li>• Controlled Substance Act                   <ul style="list-style-type: none"> <li>- Regulation of controlled substances</li> <li>- Nursing interventions</li> <li>- Schedule categories of controlled substances                       <ul style="list-style-type: none"> <li>« Schedule I                           <ul style="list-style-type: none"> <li>▪ Non-medical use</li> </ul> </li> <li>« Schedule II                           <ul style="list-style-type: none"> <li>▪ High drug abuse potential</li> </ul> </li> <li>« Schedule III                           <ul style="list-style-type: none"> <li>▪ Dependence risk &lt; Schedule I &amp; II</li> </ul> </li> <li>« Schedule IV                           <ul style="list-style-type: none"> <li>▪ May cause dependence</li> </ul> </li> <li>« Schedule V                           <ul style="list-style-type: none"> <li>▪ Very limited potential for dependence</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ol>	

Unit Title: <b>Introduction to Drug Therapy</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>C. Identifies common drug resources/reference books.</p> <p>D. Review of the medication reconciliation process.</p> <ol style="list-style-type: none"> <li>1. Define the term “Medication Reconciliation”</li> <li>2. State the purposes of a Medication Reconciliation Policy</li> <li>3. Summarize briefly the Medication Reconciliation Policy, inclusive of the five steps that are designated to actualize this process</li> </ol>	<ol style="list-style-type: none"> <li>3. Nurse Practice Acts           <ul style="list-style-type: none"> <li>• Laws regarding drug administration</li> <li>• Legal terms               <ul style="list-style-type: none"> <li>- Misfeasance</li> <li>- Nonfeasance</li> <li>- Malfeasance</li> </ul> </li> </ul> </li> <li>4. Drug Names           <ul style="list-style-type: none"> <li>• Generic</li> <li>• Trade</li> </ul> </li> </ol> <p>C. Drug Information Resources:</p> <ol style="list-style-type: none"> <li>1. References           <ul style="list-style-type: none"> <li>• Nursing Drug Guides</li> <li>• On Line Sites</li> <li>• Smartphone Applications</li> </ul> </li> <li>2. Black Box Warning</li> <li>3. High Alert Medications</li> </ol> <p>D. Joint Commission involvement and recommendations for medication reconciliation:</p> <ol style="list-style-type: none"> <li>1. Definition and rationale for recommendation to instate medication reconciliation</li> <li>2. LAC+USC Medication Reconciliation Policy (#721)</li> </ol>	

<b>Unit Title: Nursing Process in Medication Administration</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Identifies the use of the nursing process in relation to drug therapy.</p> <ol style="list-style-type: none"> <li>1. Discusses the importance of the assessment step in client teaching.</li> <li>2. Describes common nursing diagnoses related to drug therapy.</li> <li>3. Recognizes the significance of the planning step in assisting the client in drug therapy.</li> <li>4. Outlines the format for effective client teaching in the implementation step.</li> <li>5. Discusses the importance of the evaluation step in client teaching.</li> <li>6. Identifies guidelines for successful teaching sessions.</li> </ol>	<p>A. Client and family teaching for safe drug administration in a home setting:</p> <ol style="list-style-type: none"> <li>1. Possible pharmacodynamic interactions; client teaching           <ul style="list-style-type: none"> <li>• Drug-food interaction</li> <li>• Drug-laboratory interaction</li> <li>• Drug-induced photosensitivity</li> </ul> </li> <li>2. General information           <ul style="list-style-type: none"> <li>• Importance of compliance</li> <li>• OTC medications/herbal products</li> <li>• Importance of lab tests</li> </ul> </li> <li>3. Essential information           <ul style="list-style-type: none"> <li>• Proper technique/asepsis</li> <li>• Self-administration</li> <li>• Diet based on specific drug therapy</li> <li>• Side effects/adverse reactions</li> <li>• Cultural considerations</li> <li>• Evaluation</li> </ul> </li> <li>4. Home safety:           <ul style="list-style-type: none"> <li>• Proper storage</li> <li>• Proper disposal</li> <li>• Poison Control Centers</li> <li>• Other resources (pharmacist)</li> </ul> </li> <li>5. Pediatric and Older Adult Considerations</li> </ol>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 32-39, 61-66, 75-78, 79-87, 88-91, 94-96, 113-119.</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., (<u>Study Guide</u>), pp. 8-9, 11-13, 21-22, 23-25, 31-32.</p>

Unit Title: <b>Nursing Process in Medication Administration</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>B. Identifies effective teaching principles for individuals about safe, effective use of medications.</p> <ol style="list-style-type: none"> <li>1. Identifies three (3) components of general information included in client teaching.</li> <li>2. States the essential information needed to teach clients about drug therapy and safe self-administration of medications.</li> <li>3. Describes the nurse's role in teaching clients about home safety.</li> <li>4. Identifies possible pharmacodynamic interactions.</li> <li>5. Identifies pediatric and older adult considerations.</li> </ol>	<p>B. Nursing process in medication administration:</p> <ol style="list-style-type: none"> <li>1. Applying QSEN competencies to medication administration</li> <li>2. Assessment: Nurse's physical examination of client, including:             <ul style="list-style-type: none"> <li>• Monitor lab values</li> <li>• Diagnostic studies</li> </ul> </li> <li>3. Nursing diagnosis/diagnoses: Accurate identification of potential diagnoses based on assessment data.</li> <li>4. Planning: Characterized by goal setting or establishing expected outcomes of clients.</li> <li>5. Interventions: Key nursing responsibilities are client education, administration of medications, and assessment of medication effectiveness.</li> <li>6. Evaluation: To determine effectiveness of health teaching and goal attainment.</li> <li>7. Teaching tools.</li> </ol>	

<b>Unit Title: Fluids and Electrolytes, Nutrition</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Discusses the nursing process in the promotion and maintenance of system stability related to vitamin and mineral uses.</p> <ol style="list-style-type: none"> <li>1. Identifies the following characteristics of vitamins and minerals:           <ul style="list-style-type: none"> <li>• Pharmacokinetics</li> <li>• Pharmacodynamics</li> <li>• Therapeutic uses</li> <li>• Indication for use</li> <li>• Route and dosage range</li> <li>• Mechanism of action</li> <li>• Interactions with medications</li> <li>• Contraindications and adverse effects</li> <li>• Nursing assessment and interventions</li> <li>• Client education</li> </ul> </li> <li>2. Discusses the nursing responsibilities as they relate to the administration of vitamins and minerals.</li> </ol>	<p>A. Promoting and maintaining system stability in individuals receiving vitamins and minerals:</p> <ol style="list-style-type: none"> <li>1. Effects of age on pharmacokinetics and pharmacodynamics of nutrients in:           <ul style="list-style-type: none"> <li>• Children</li> <li>• The elderly</li> </ul> </li> <li>2. Fat Soluble Vitamins           <ul style="list-style-type: none"> <li>• Vitamin A</li> <li>• Vitamin D</li> <li>• Vitamin E</li> <li>• Vitamin K</li> </ul> </li> <li>3. Water Soluble Vitamins           <ul style="list-style-type: none"> <li>• Vitamin B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>6</sub></li> <li>• Vitamin B<sub>12</sub></li> <li>• Folate acid (folate)</li> <li>• Vitamin C</li> </ul> </li> </ol>	<p><b><u>Required Reading:</u></b></p> <p><u>Vitamins and Minerals:</u>            Kee, J. L. Hayes, E., &amp; McCuiston, L., pp. 211-222.</p> <p><u>Fluid and Electrolytes:</u>            Kee, J.L., Hayes. E., &amp; McCuiston, L., pp. 223-242.</p> <p><u>Nutritional Support:</u>            Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 243-251.</p>

<b>Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>B. Identifies the educational needs of clients on vitamin and mineral therapy with regards to dietary considerations and dosing.</p> <ol style="list-style-type: none"> <li>1. Explains the usage of iron, copper, zinc, chromium and selenium.</li> <li>2. Describes interactions between iron and some commonly used herbal remedies.</li> <li>3. Discusses the chelating agents used to remove excessive copper, iron, and lead from body.</li> </ol>	<p>B. Education needs regarding vitamin/mineral therapy:</p> <ol style="list-style-type: none"> <li>1. Minerals: chromium, selenium, copper, iodine, zinc, and iron           <ul style="list-style-type: none"> <li>• Characteristics</li> <li>• Function</li> <li>• Food sources</li> <li>• Signs/symptoms of deficiency/excess</li> <li>• Treatment</li> <li>• Contraindications</li> <li>• Complications</li> </ul> </li> <li>2. Medications used to treat iron deficiency           <ul style="list-style-type: none"> <li>• Ferrous gluconate</li> <li>• Ferrous sulfate</li> <li>• Ferrous fumarate</li> </ul> </li> <li>3. Need for increased supplements of iron</li> <li>4. Herbal interactions with iron</li> <li>5. Excess states of iron           <ul style="list-style-type: none"> <li>• Iron poisoning (acute)</li> <li>• Hemochromatosis (chronic)</li> <li>• Chelating agent-metal antagonist               <ul style="list-style-type: none"> <li>▪ Penicillamine</li> <li>▪ Succimer</li> <li>▪ BAL</li> </ul> </li> <li>• Deferoxamine</li> </ul> </li> </ol>	

<b>Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>C. Applies the nursing process in understanding mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications in the maintenance of system stability.</p> <ol style="list-style-type: none"> <li>1. Defines osmosis, osmotic, osmolality, tonicity, ion, and electrolyte.</li> <li>2. Discusses and identifies the osmolar states of intravenous solution.</li> <li>3. Identifies the purpose and client/disease-related considerations of the various intravenous solutions.</li> <li>4. Identifies other medications and their purposes used in intravenous infusions.</li> <li>5. Identifies assessment needs during administration and adverse reactions of the various intravenous infusions and their additives.</li> <li>6. Identifies the purpose of blood and blood product transfusions.</li> <li>7. Discusses the role of hyperalimentation, lipids, and enteral feedings.</li> <li>8. Identifies assessments and interventions for adverse reactions during feedings.</li> </ol>	<p>C. Actions, doses, indications, adverse reactions, and nursing implications of fluids:</p> <ol style="list-style-type: none"> <li>1. Osmolar states of fluids in relationship to serum           <ul style="list-style-type: none"> <li>• Isotonic</li> <li>• Hypotonic</li> <li>• Hypertonic</li> </ul> </li> <li>2. Classifications of intravenous solutions           <ul style="list-style-type: none"> <li>• Crystalloids</li> <li>• Colloids</li> <li>• Blood and blood products</li> <li>• Lipids</li> </ul> </li> <li>3. Crystalloids           <ul style="list-style-type: none"> <li>• Water and electrolyte solutions</li> </ul> </li> <li>4. Colloids           <ul style="list-style-type: none"> <li>• Albumin</li> <li>• Plasma protein fractions</li> <li>• Dextran</li> <li>• Hetastarch</li> </ul> </li> <li>5. Blood and blood products           <ul style="list-style-type: none"> <li>• Whole blood</li> <li>• Packed red blood cells (PRBC)</li> <li>• Plasma &amp; Platelets</li> <li>• Albumin</li> </ul> </li> <li>6. Hyperalimentation (PPN/TPN)</li> <li>7. Lipids</li> <li>8. Enteral feedings.</li> </ol>	

<b>Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>D. Discusses age considerations for intravenous infusions.</p> <p>E. Discusses the legal/ethical implications of drug administration for individuals with common health problems and their families.</p> <p>F. Identifies the implementation of the nursing process in the promotion and maintenance of system stability.</p> <ol style="list-style-type: none"> <li>1. Describes signs, symptoms, and lab values of sodium, potassium, chloride, magnesium, calcium, and phosphorus imbalances.</li> <li>2. Discusses the treatments used to correct sodium, potassium, chloride, magnesium, calcium, and phosphorus deficiency and excess.</li> </ol>	<p>D. Geriatric and pediatric populations</p> <p>E. Legal/ethical implications of IV therapy:</p> <ol style="list-style-type: none"> <li>1. Protocols and Procedures</li> <li>2. RN responsibilities</li> </ol> <p>F. Promoting system stability related to fluid &amp; electrolyte imbalances:</p> <ol style="list-style-type: none"> <li>1. Electrolyte function, food source, and normal serum levels           <ul style="list-style-type: none"> <li>• Sodium</li> <li>• Potassium</li> <li>• Chloride</li> <li>• Magnesium</li> <li>• Calcium</li> <li>• Phosphorus</li> </ul> </li> <li>2. Treatment of electrolyte imbalances           <ul style="list-style-type: none"> <li>• Medical interventions</li> <li>• Nursing assessments and interventions</li> </ul> </li> </ol>	

<b>Unit Title: Anti-inflammatory and Pain Management Agents</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of selected drugs affecting the central nervous system.</p> <ol style="list-style-type: none"> <li>1. Discusses the pharmacodynamics and pharmacokinetics of the following drug categories.               <ul style="list-style-type: none"> <li>• Opioid analgesics</li> <li>• Opioid agonist-antagonists</li> <li>• Opioid antagonists</li> </ul> </li> <li>2. Differentiates between the terms agonist and antagonists.</li> <li>3. Explains why higher dosage of opioid analgesics are required when the drug is given orally.</li> <li>4. Discusses the role of the nurse in assessing pain and the effects of opiates.</li> <li>5. Identifies signs and symptoms of opioid overdose and withdrawal and the treatment of each.</li> <li>6. States the definition and purpose for procedural/conscious sedation.</li> </ol>	<p>A. Pain: Definition:</p> <ol style="list-style-type: none"> <li>1. Types of pain               <ul style="list-style-type: none"> <li>• Acute</li> <li>• Chronic</li> <li>• Superficial</li> <li>• Visceral</li> </ul> </li> <li>2. Opioid Analgesic               <ul style="list-style-type: none"> <li>• Mechanism of action</li> <li>• Indication for use</li> <li>• Contraindication for use</li> <li>• Dosage factors</li> <li>• Adverse effects</li> <li>• Laboratory tests</li> </ul> </li> <li>3. Pharmacodynamics and pharmacokinetics for               <ul style="list-style-type: none"> <li>• Opioid analgesics:                   <ul style="list-style-type: none"> <li>- Morphine</li> <li>- Hydromorphone</li> <li>- Meperidine</li> <li>- Methadone</li> </ul> </li> <li>• Opioid Agonist-Antagonist</li> <li>• Opioid Antagonist</li> </ul> </li> </ol>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 291-298, 335-344, 348-351, 352-368.</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., (<u>Study Guide</u>),        Chapter 21:            Matching Exercise,            Items 29-34            NCLEX Review Items            35-36, 41, 42</p> <p>Chapter 25:            Matching Exercise,            Items 1-9            NCLEX Review Items            16-26, 30</p> <p>Chapter 26:            NCLEX Review Items            7-16</p>

Unit Title: <b>Anti-inflammatory and Pain Management Agents (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
7. Reviews the nursing responsibilities for client care before, during and after the conscious sedation procedure. 8. Explains the rationale for use of patient controlled analgesia (PCA). 9. Discusses possible side effects, adverse reactions, and contraindications of opioid use.	<ul style="list-style-type: none"> <li>• Opioid Overdose               <ul style="list-style-type: none"> <li>- Signs and symptoms</li> <li>- Overdose treatment</li> </ul> </li> <li>• Opioid withdrawal with chronic dosing               <ul style="list-style-type: none"> <li>- Signs and symptoms</li> <li>- Drug withdrawal treatment:                   <ul style="list-style-type: none"> <li>« Methadone programs</li> <li>« Clonidine</li> </ul> </li> </ul> </li> </ul> 4. Procedural/conscious sedation <ul style="list-style-type: none"> <li>• Effects of conscious sedation drugs</li> <li>• Sedation</li> <li>• Relaxation</li> </ul> 5. PCA- Patient Controlled Analgesia <ul style="list-style-type: none"> <li>• Purpose</li> </ul> 6. Closely monitor clients for complications of opioid use including: <ul style="list-style-type: none"> <li>• Side effects</li> <li>• Adverse Reactions</li> <li>• Contraindications</li> </ul>	

Unit Title: <b>Anti-inflammatory and Pain Management Agents</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
B. Discusses the legal/ethical implications of drug administration with common health problems in relation to administering narcotics. <ol style="list-style-type: none"> <li>1. Identifies populations at risk for opioid addiction or abuse including the elderly.</li> <li>2. Reviews the nursing responsibilities for the administration of opioid analgesics.</li> </ol>	B. Legal-ethical implications in drug administration: <ol style="list-style-type: none"> <li>1. Opiate addiction or abuse</li> <li>2. Nursing responsibilities</li> </ol>	

<b>Unit Title: Anti-inflammatory and Pain Management Agents (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>C. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of selected drugs used to reduce pain, inflammation and fever.</p> <ol style="list-style-type: none"> <li>1. Discusses the role of prostaglandins in etiology of pain, fever, and inflammation.</li> <li>2. States pharmacodynamics of aspirin and nonsteroidal anti-inflammatory drugs with consideration for the elderly and young children.</li> <li>3. Compares and contrast aspirin, other NSAIDS, and acetaminophen.</li> <li>4. Differentiates among antiplatelet, analgesic, and anti-inflammatory doses of aspirin.</li> </ol>	<p>C. Application of the Nursing Process:</p> <ol style="list-style-type: none"> <li>1. Prostaglandins: Effects in the treatment of:           <ul style="list-style-type: none"> <li>• Pain</li> <li>• Fever</li> <li>• Inflammation</li> </ul> </li> <li>2. Aspirin (ASA), NSAIDS, acetaminophen:           <ul style="list-style-type: none"> <li>• Comparison of action</li> <li>• Management of Tylenol toxicity: Mucomyst therapy</li> <li>• Lab Tests</li> <li>• Possible side effects</li> </ul> </li> <li>3. Pharmacodynamics of the following drugs:           <ul style="list-style-type: none"> <li>• Analgesics:               <ul style="list-style-type: none"> <li>- Acetylsalicylic acid</li> <li>- Ibuprofen</li> <li>- Naproxen</li> <li>- Cyclooxygenase-2 inhibitor</li> </ul> </li> <li>• Antigout Medications:               <ul style="list-style-type: none"> <li>- Colchicine</li> <li>- Uric Acid Inhibitor</li> <li>- Uricosurics</li> </ul> </li> </ul> </li> </ol>	

Unit Title: <b>Anti-inflammatory and Pain Management Agents</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>D. Discusses the use of sedative and hypnotics on the central nervous system.</p> <p>E. Identifies the educational needs and teaching methodologies regarding drugs and drug implications for effective use of opioid analgesics, acetaminophen and anti-inflammatory drugs, to include the elderly population.</p>	<p>D. Sedative-hypnotic drugs:</p> <ol style="list-style-type: none"> <li>1. Pharmacodynamics           <ul style="list-style-type: none"> <li>• Barbiturates               <ul style="list-style-type: none"> <li>- Long acting</li> <li>- Intermediate acting</li> <li>- Short acting</li> </ul> </li> <li>• Benzodiazepines–also used for anti-anxiety</li> <li>• Nonbenzodiazepines</li> </ul> </li> </ol> <p>E. Client teaching including discussion about the effects of polypharmacology:</p> <ol style="list-style-type: none"> <li>1. Safe use</li> <li>2. Effective use</li> <li>3. Monitor for interactions between drugs.</li> </ol>	

<b>Unit Title: Drugs Affecting the Immune System: Antineoplastic</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of drugs antineoplastic/oncology treatments.</p> <ol style="list-style-type: none"> <li>1. Defines the terms antineoplastic and oncology.</li> <li>2. Discusses rationales for using combination chemotherapy drugs, with surgical treatment, and with radiation treatment.</li> <li>3. Describes the effects of the following drugs on cancer cells and normal cells during treatment:           <ul style="list-style-type: none"> <li>• Cytotoxics</li> <li>• Alkalating agents</li> <li>• Antimetabolites</li> <li>• Antitumor antibiotics</li> <li>• Plant alkaloids</li> <li>• Miscellaneous cytotoxic agents.</li> </ul> </li> <li>4. Lists cytotoxic neoplastic drugs that are associated with serious adverse effects: Bone marrow depression, cardiotoxicity, hepatotoxicity, nephrotoxicity, neurotoxicity.</li> </ol>	<ol style="list-style-type: none"> <li>A. Terminology: Antineoplastic, oncology</li> <li>B. Pharmacodynamics/pharmacokinetics of drugs:           <ol style="list-style-type: none"> <li>1. Cytotoxics</li> <li>2. Alkylating Agents</li> <li>3. Antimetabolites</li> <li>4. Antitumor antibiotics</li> <li>5. Plant alkaloids</li> <li>6. Miscellaneous cytotoxic agents</li> </ol> </li> <li>C. Hormone and antihormone: Anticancer effects.</li> <li>D. Nursing process implications for antineoplastic drug therapy:           <ol style="list-style-type: none"> <li>1. Assessment</li> <li>2. Nursing Diagnoses</li> <li>3. Planning/Goals</li> <li>4. Interventions</li> <li>5. Evaluations</li> </ol> </li> <li>E. Cytotoxic antineoplastic drugs associated with serious adverse effects:           <ol style="list-style-type: none"> <li>1. Bone marrow depression, cardiotoxicity, hepatotoxicity, nephrotoxicity, neurotoxicity</li> </ol> </li> </ol>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 500-529.</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., (<u>Study Guide</u>), pp. 150-153.</p> <p><b><u>Recommended Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 554-570.</p>

Unit Title: <b>Drugs Affecting the Immune System: Antineoplastic</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
5. Plans interventions for chemotherapy side effects and complications: Chemotherapy-induced nausea and vomiting, anorexia, fatigue, alopecia, mucositis, infection, bleeding, hyperuricemia, extravasation. 6. Summarizes guidelines for handling cytotoxic antineoplastic drugs. 7. Lists drugs used in oncology treatment that are associated with second malignancies. 8. States the rationale for the anticancer effects of hormones and antihormones. 9. Discusses monitoring effects of chemotherapy using CBC, absolute neutrophil count.	F. Interventions for chemotherapy side effects complications: 1. Antiemetics 2. Colony-stimulating factors  G. Guidelines for handling cytotoxic neoplastic drugs and for accident prevention to employees who manage cytotoxin waste removal from wards  H. Drugs used in oncology treatments that are associated with second malignancies  I. Cytotoxic drugs for which cytoprotective drugs are available  J. Lab test monitoring for chemotherapy drugs  K. Managing and handling chemotherapy drugs  L. Client and family education: Chemotherapy	

<b>Unit Title: Drugs Used to Treat Infection: Respiratory</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Discusses the nursing implications of selected drugs used to treat tuberculosis.</p> <p>1. Identifies the following categories for all tuberculin medications:</p> <ul style="list-style-type: none"> <li>• Pharmacokinetics</li> <li>• Pharmacodynamics</li> <li>• Therapeutic uses</li> <li>• Indication for use</li> <li>• Route and dosage range</li> <li>• Mechanism of action</li> <li>• Contraindications</li> <li>• Adverse effects (including lab values)</li> <li>• Nursing assessment</li> <li>• Nursing intervention</li> <li>• Client education</li> </ul>	<p>A. Nursing implications of selected antitubercular drugs:</p> <ol style="list-style-type: none"> <li>1. Isoniazid</li> <li>2. Rifampin</li> <li>3. Ethambutol</li> <li>4. Pyrazinamide</li> </ol>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 436-440, Table 32-2, p. 439</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., (<u>Study Guide</u>), pp. 161-165.</p>

<b>Unit Title: Drugs Affecting the Respiratory System</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Discusses the nursing process and the nursing implications of selected drugs affecting the respiratory system.</p> <p>1. Discusses the following characteristics of all respiratory medications:</p> <ul style="list-style-type: none"> <li>• Pharmacokinetics</li> <li>• Pharmacodynamics</li> <li>• Therapeutic uses</li> <li>• Indication for use</li> <li>• Route and dosage range</li> <li>• Mechanism of action</li> <li>• Contraindications</li> <li>• Adverse effects (including lab values)</li> <li>• Nursing assessment</li> <li>• Nursing intervention</li> <li>• Client education</li> </ul> <p>2. Discusses drugs used to treat upper respiratory conditions.</p> <ul style="list-style-type: none"> <li>• Antihistamine</li> <li>• Nasal decongestants</li> <li>• Systemic decongestants</li> <li>• Intranasal glucocorticoids</li> <li>• Antitussives</li> <li>• Expectorants</li> </ul>	<p>A. Nursing implications and the nursing process related to selected respiratory drugs:</p> <p>1. Common drugs used to treat upper respiratory disorders:</p> <ul style="list-style-type: none"> <li>• Antihistamines               <ul style="list-style-type: none"> <li>- H blockers or H antagonists</li> <li>- 1st generation antihistamines</li> <li>- 2nd generation antihistamines</li> </ul> </li> <li>• Nasal and systemic decongestants               <ul style="list-style-type: none"> <li>- Sympathomimetic amines</li> </ul> </li> <li>• Intranasal glucocorticoids               <ul style="list-style-type: none"> <li>- Dexamethasone (Decadron)</li> <li>- Fluticasone (Flonase)</li> </ul> </li> <li>• Antitussives               <ul style="list-style-type: none"> <li>- Codeine</li> <li>- Dextromethorphan</li> </ul> </li> <li>• Expectorants               <ul style="list-style-type: none"> <li>- Robitussin</li> </ul> </li> </ul>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 573-582, 583-598.</p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., <u>Study Guide</u> pp. 161-165.</p>

<b>Unit Title: Drugs Affecting the Respiratory System (Cont'd)</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>3. Discusses the following classifications of medications used to treat lower respiratory conditions:</p> <ul style="list-style-type: none"> <li>• Alpha-adrenergic agonists</li> <li>• Beta-adrenergic agonists</li> <li>• Anticholinergics</li> <li>• Methylxanthine derivatives</li> <li>• Leukotriene receptor antagonists</li> <li>• Glucocorticoids</li> <li>• Mucolytics</li> </ul> <p>4. Discusses the characteristics of the following drugs:</p> <ul style="list-style-type: none"> <li>• Adrenergic bronchodilators</li> <li>• Anticholinergics</li> <li>• Methylxanthine derivatives</li> </ul> <p>5. Discusses the use of asthma drugs according to severity and age.</p> <p>6. Discusses the educational needs of clients who use the aerosol inhaler (MDI and DPI) to promote self-care.</p>	<p>2. Respiratory medications:</p> <ul style="list-style-type: none"> <li>• Isoproterenol</li> <li>• Metaproterenol</li> <li>• Albuterol</li> <li>• Epinephrine</li> <li>• Atrovent (Ipratropium)</li> <li>• Montelukast</li> <li>• Theophylline</li> <li>• Cromolyn and Nedocromil</li> <li>• Decadron</li> <li>• Acetylcysteine (Mucomyst)</li> </ul>	

<b>Unit Title: Antihypertensives</b>		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
<p>A. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of antihypertensive drugs.</p> <ol style="list-style-type: none"> <li>1. Contrasts nonpharmacologic versus pharmacologic treatments for hypertension including the major considerations in using antihypertensive therapy with elderly clients and children.</li> <li>2. Explains how the blood pressure can be reduced with the use of:           <ul style="list-style-type: none"> <li>• Angiotensin-Converting Enzyme Inhibitors</li> <li>• Angiotensin II Receptor Antagonist</li> <li>• Alpha and Beta Adrenergic Blockers</li> <li>• Calcium Channel Blockers</li> <li>• Vasodilators.</li> </ul> </li> <li>3. Discusses how the blood pressure can be reduced with the use of diuretic therapy:           <ul style="list-style-type: none"> <li>• Loop diuretics,</li> <li>• Thiazide, Potassium Sparing Diuretics, Osmotic Diuretics.</li> </ul> </li> <li>4. States how adverse effects of antihypertensive drugs can be minimized or prevented.</li> <li>5. Outlines the contents of a teaching plan for a client newly diagnosed with hypertension.</li> </ol>	<ol style="list-style-type: none"> <li>A. Nonpharmacologic and pharmacologic treatment for hypertension:           <ol style="list-style-type: none"> <li>1. Diet</li> <li>2. Exercise</li> <li>3. Lifestyle</li> <li>4. Medications</li> <li>5. Major considerations in using antihypertensive therapy with elderly clients and children</li> <li>6. Lipid studies: Normal Levels: Cholesterol, Triglyceride, HDL, LDL</li> </ol> </li> <li>B. Major considerations in using antihypertensive therapy with older client and children</li> <li>C. Pharmacodynamics/pharmacokinetics of drugs:           <ol style="list-style-type: none"> <li>1. Angiotensin-Converting Enzyme Antagonist</li> <li>2. Angiotensin II Receptor Antagonist</li> <li>3. Calcium Channel Blockers</li> <li>4. Alpha and Beta Adrenergic Blockers</li> <li>5. Vasodilators</li> <li>6. Diuretics: Thiazide, Loop, Potassium Sparing, Osmotic</li> </ol> </li> <li>D. Nursing process implication for antihypertensive drug therapy including teaching plan:           <ol style="list-style-type: none"> <li>1. Assessment</li> <li>2. Nursing Diagnoses</li> <li>3. Planning/Goals</li> <li>4. Interventions</li> <li>5. Evaluation</li> </ol> </li> </ol>	<p><b><u>Required Reading:</u></b></p> <p>Kee, J.L., Hayes, E., &amp; McCuiston, L., pp. 620-632, 633-649.</p>

Unit Title: <b>Antihypertensives</b> (Cont'd)		
<b>Objectives</b>	<b>Content Outline</b>	<b>Student Activities</b>
6. States interventions by the various health care providers that may help hypertensive clients adhere to their treatment regimens. 7. States potential consequences of untreated or inadequately treated hypertension. 8. Summarizes the rationale for using combination drugs in the treatment of hypertension.	E. Minimizing and preventing side effects of antihypertensive drug therapy F. Interventions from health team collaboration G. Consequences of inadequate treatment H. Nurse’s responsibilities in maintaining continuity of care during long-term antihypertensive care in essential hypertension. I. Effects of diuretic therapy on hypertension J. Identification of clients at risk for adverse effects to diuretic therapy K. Lab test monitoring for diuretic therapy serum electrolytes	