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

Nursing 111:

NURSING PHARMACOLOGY

Spring 2013

N111: NURSING PHARMACOLOGY

Level I, Semester I

WEEK	TOPIC	HOURS	DATE
10	Course Orientation Drug Calculation Nursing Process in Drug Therapy	1 1.5	03/28/13 0700-0930
11	Introduction to Drug Therapy: Introduction to Pharmacology Basic Concepts and Processes, Administering Medications	1.5	04/04/13 0700-0830
12	**QUIZ #1** Antihypertensives	3	04/11/13 0700-1000
13	**EXAM #1**	1	04/18/13 0700-1000
	Pain Management Agents , Sedatives/Hypnotics	2	
14	Fluid and Electrolytes, Nutrition	3	04/25/13 0700-1000
15	**QUIZ #2** Drugs Affecting the Respiratory System	2	05/02/13 0700-0900
16	Drugs Affecting the Immune System: Antineoplastic Course Evaluations	1.5 0.5	05/09/13 0700-0900
17	**FINAL EXAM**	1	05/16/13 0700-0800

COURSE TITLE:	**N111 Nursing Pharmacology**
PRE-REQUISITES:	Acceptance into the Nursing Program
UNITS:	1 Unit
HOURS:	2-3 hours per week
LENGTH:	8 Weeks
PLACEMENT:	Level I: Semester 1
CONCURRENCY:	All courses must be taken concurrently.

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, drugs affecting the central nervous system, respiratory system, autonomic nervous system, and the immune system.

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:

1. Discusses the nursing process in understanding mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of selected pharmacologic agents in the care of individuals with common health problems.

2. Discusses the legal/ethical implication of drug administration to individuals with common health problems with emphasis on simple variations from wellness.

3. Identifies the educational needs and teaching methodologies regarding drugs and the implications for individuals with common health problems.

4. Identifies sociocultural variations of individuals with common health problems in relation to various medications.

STUDENT LEARNING OUTCOME:

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

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:

2 quizzes each consisting of 15 questions each worth 10% of the grade

2 exams consisting of 50 questions each worth 40% of the grade

GRADING SCALE:

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

TEACHING METHODS:

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

REQUIRED READING:

Berman, A., Snyder, S. Kozier, B. (2012). *Kozier & Erb's Fundamentals of nursing: Concepts, process and practice* (9th ed.). New Jersey: Prentice-Hall, Inc.

Kee, J.L., Hayes, E., & Mc Cuistion, L. (2012). *Pharmacology A nursing process approach* (7th ed.). Philadelphia: Lippincott.

Kee, J.L., Hayes, E., & Mc Cuistion, L. (2012). *Pharmacology A nursing process approach* (7th ed.). *Study Guide*. Philadelphia: Lippincott.

Pickar, G. (2013). *Dosage Calculations* (9th ed.). New York: Thomson Delmar Learning.

Internet Readings:

FDA U.S. Food and Drug Administration
http://www.fda.gov

Proper disposal of prescription drugs
http://nodrugsdownthedrain.org/disposal.html

World Health Organization:
www.who.int/gtb/dots/whatisdots.htm

LAC+USC Medical Center Protocols and Policies

Black Box Warning Medication Administration
Policy #909

Medication Reconciliation
Policy #721

(Note: To access the LAC+USC Medical Center Protocols and Policies, log-on to LAC+USC Intranet; click on "Departments," then click on "Nursing Services." Under Clinical Resources click on "Nursing Standards," then click on Policies or Clinical Protocols)

All academic policies are strictly enforced.

Unit Title: Drug Calculation		
Objectives	**Content Outline**	**Student Activities**
A. Explains the five rights for safe drug administration.	A. Five Rights 1. Right drug • Drug preparation/form 2. Right dose • Mathematical Calculation - Formula - Ratio/proportion 3. Right client 4. Right Route • Intravenous, intramuscular, subcutaneous, oral (tablets and capsules), topical, transdermal, suppositories, instillation • Safety implications to prevent injury to self and patient • Aseptic practice 5. Right time	**Required Reading:** Kee, J.L., Hayes, E., & McCuistion, L., pp. 22-45, 48-103. Pickar, G., pp 123-129, 207-241, 255-277, 439-451, 454-468, 480-482.

Unit Title: Drug Calculation (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Discusses the legal/ethical implications of drug administration for individuals with common health problems and their families. 1. Identifies intravenous calculations for safe administration of intravenous fluids 2. Calculates flow rates using a formula method. 3. Identifies the abbreviations used for IV fluids.	B. Legal/ethical implications of IV therapy 1. Intravenous Calculations • Flow rate calculations • Intravenous tubing - Macrodrip - Microdrip Formula A – to find **gtt / minute** $\frac{\text{amount of solution (mL) x drop factor}}{\text{time in minutes}}$ Formula B – to find **mL / hour** $\frac{\text{Total mL Ordered}}{\text{Total Hours Ordered}}$ Formula C – flow rate for volumetric pump $\frac{\text{amount of solution (mL) x 60 minutes}}{\text{time in minutes}}$	

Unit Title: Nursing Process in Drug Therapy		
Objectives	**Content Outline**	**Student Activities**
A. Identifies the use of the nursing process in relation to drug therapy. 1. Discusses the importance of the assessment step in client teaching. 2. Describes common nursing diagnoses related to drug therapy. 3. Recognizes the significance of the planning step in assisting the client in drug therapy. 4. Outlines the format for effective client teaching in the implementation step. 5. Discusses the importance of the evaluation step in client teaching.	A. Nursing process in medication administration 1. Assessment: Nurse's physical examination of client, including: • Monitor lab values • Diagnostic studies 2. Nursing diagnosis/diagnoses: Accurate identification of potential diagnoses based on assessment data. 3. Planning: Characterized by goal setting or establishing expected outcomes of clients. 4. Interventions: Key nursing responsibilities are client education, administration of medications, and assessment of medication effectiveness. 5. Evaluation: To determine effectiveness of health teaching and goal attainment.	**Required Reading:** Kee, J.L., Hayes, E., & McCuistion, L., Ch. 2, 7, 8, 12 and pp. 157-162, 169, 172-175, 176-184

Unit Title: **Nursing Process in Drug Therapy** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Identifies effective teaching principles for individuals about safe, effective use of medications. 1. States the essential information needed to teach clients about drug therapy and safe self-administration of medications in a home setting. 2. Describes the nurse's role in teaching clients about home safety. 3. Identifies possible pharmacodynamic interactions.	B. Patient and family teaching for safe drug administration in a home setting • Essential information - Proper technique/asepsis - Self-administration - Diet based on specific drug therapy - Side effects/adverse reactions - Cultural considerations - Evaluation • Home safety: - Proper storage - Proper disposal - Poison Control Centers - Other resources (pharmacist) • Possible pharmacodynamic interactions - Drug/food - Drug/drug - Drug/laboratory	
C. Identifies contemporary issues in pharmacological nursing. 1. Describes use of over-the-counter (OTC) drugs. 2. Explains the client's responsibilities in taking herbs and botanical preparations.	C. Contemporary Issues in Pharmacology • Use of over-the-counter drugs • Use of herbal, botanical drugs and social drugs	

Unit Title: **Nursing Process in Drug Therapy** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
D. Identifies the effects of pharmacological interventions based on variations in physiological, psychological and sociocultural factors. 1. States the principles of drug therapy for clients including older adults and children. 2. Describes methods of drug dosage and calculation for children. 3. Describes principles of medication administration for the elderly. 4. States how racial origin affects metabolism of pharmacologic agents. 5. Discusses the impact of psychological and sociocultural factors have on drug therapy, including the elderly and children.	D. Pharmacological interventions based on variation in physiological, psychological, and sociocultural factors: • Principle of drug therapy for children - Calculation of drug dosage using body surface area/nomogram measuring device - Weight in kilograms • Drug therapy in the elderly • Selected aspects of cultural perception of drug therapy - Family organization - Biocultural Ecology - Spirituality	

Unit Title: Introduction to Drug Therapy		
Objectives	**Content Outline**	**Student Activities**
A. Discusses basic concepts of pharmacology related to competent nursing practice. 1. Defines the following terms: • Pharmacology • Generic names • Trade names • Pharmacokinetics • Pharmacodynamics • Adverse reaction • Toxic effects 2. States the pharmacokinetics of drug actions in relation to absorption, distribution, metabolism, and excretion to include: • Effects of protein binding on drug absorption, distribution, metabolism and elimination • Side effects, adverse reactions, and drug toxicity • Peak and trough drug levels	A. Definitions • Pharmacology • Generic names • Trade names • Pharmaceutic phase of drug action • Pharmacokinetic phase of drug action • Pharmacodynamic phase of drug action • Adverse reaction • Toxic effects: Pathophysiologic changes/effects/injuries related to specific drug therapies 2. Basic concepts/process • Absorption • Distribution • Metabolism • Excretion • Other considerations a. Side effects b. Adverse reactions c. Drug toxicity d. Drug levels	**Required Reading:** Kee, J.L., Hayes, E., & McCuistion, L., pp. 1-13, 108-115. Kee, J.L., Hayes, E., & McCuistion, L. (Study Guide), NCLEX Questions, pp. 1-6, 60-63. **References:** –Policy 909: Black Box Warning –Policy 721: Medication Reconciliation –CDC Website: http://www.cdc.gov/ –Joint Commission Website http://www.jointcommission.org

Unit Title: **Introduction to Drug Therapy** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Discusses drug standards and regulations guiding nursing practice related to drug administration. 1. States the purpose and function of the FDA 2. Describes federal legislation regarding medications 3. Describes the schedules for controlled substancesIdentifies the legal/ethical responsibilities of the nurse related to safe drug administration	B. Legal/ethical: Accountability in medication administration: 1. FDA • Purpose • Function 2. Federal legislation • Federal Food, Drug, and Cosmetic Act • Controlled Substance Act - Regulation of controlled substances - Narcotic drug use and abuse 3. Controlled substances • Schedule I - Non-medical use - Prototype • Schedule II - Increase abuse potential - Prototype • Schedule III - Psychological and/or physiological - Prototype • Schedule IV - Potential for abuse - Prototype • Schedule V - Moderate amount of controlled substance	

Unit Title: **Introduction to Drug Therapy** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
	5. Nursing Practice Act • Laws regarding drug administration • Legal terms - Misfeasance - Nonfeasance - Malfeasance	
C. Identifies common drug resources/reference books.	C. Drug Information Resources 1. References • Nursing Drug Guides • On Line Sites • Smartphone applications 2. Black Box Warning Labels 3. High Alert Medications	

Unit Title: **Introduction to Drug Therapy** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
D. Review of the medication reconciliation process. 1. Define the term "Medication Reconciliation" 2. State the purposes of a Medication Reconciliation Policy 3. Summarize briefly the Medication Reconciliation Policy, inclusive of the five steps that are designated to actualize this process	D. Joint Commission involvement and recommendations for medication reconciliation • Definition and rationale for recommendation to instate medication reconciliation • LAC+USC Medication Reconciliation Policy (#721)	

Unit Title: Antihypertensives		
Objectives	**Content Outline**	**Student Activities**
A. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of antihypertensive drugs. 1. Contrasts nonpharmacologic versus pharmacologic treatments for hypertension including the major considerations in using antihypertensive therapy with elderly clients and children. 2. Explains how the blood pressure can be reduced with the use of: • Angiotensin-Converting Enzyme Inhibitors • Angiotensin II Receptor Antagonist • Alpha and Beta Adrenergic Blockers • Calcium Channel Blockers • Vasodilators. 3. Discusses how the blood pressure can be reduced with the use of diuretic therapy: • Loop diuretics, • Thiazide, Potassium Sparing Diuretics, Osmotic Diuretics. 4. States how adverse effects of antihypertensive drugs can be minimized or prevented. 5. Outlines the contents of a teaching plan for a client newly diagnosed with hypertension.	A. Nonpharmacologic and pharmacologic treatment for hypertension: • Diet • Exercise • Lifestyle • Medications • Major considerations in using antihypertensive therapy with elderly clients and children • Lipid studies: Normal Levels: Cholesterol, Triglyceride, HDL, LDL B. Major considerations in using antihypertensive therapy with older client and children C. Pharmacodynamics/pharmacokinetics of drugs: • Angiotensin-Converting Enzyme Antagonist • Angiotensin II Receptor Antagonist • Calcium Channel Blockers • Alpha and Beta Adrenergic Blockers • Vasodilators • Diuretics: Thiazide, Loop, Potassium Sparing, Osmotic D. Nursing process implication for antihypertensive drug therapy including teaching plan • Assessment • Nursing Diagnoses • Planning/Goals • Interventions • Evaluation	**Required Readings:** Kee, J.L., Hayes, E., & McCuistion, L., pp. 638-651, 652-669.

Unit Title: **Antihypertensives** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
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 client at risk for adverse effects to diuretic therapy K. Lab test monitoring for diuretic therapy serum electrolytes	

Unit Title: Antiinflammatory and Pain Management Agents		
Objectives	**Content Outline**	**Student Activities**
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. 1. Discusses the pharmacodynamics and pharmacokinetics of the following drug categories. • Opioid analgesics • Opioid agonist-antagonists • Opioid Antagonists 2. Differentiates between the terms agonist and antagonists. 3. Explains why higher dosage of opioid analgesics are required when the drug is given orally. 4. Discusses the role of the nurse in assessing pain and the effects of opiates. 5. Identifies signs and symptoms of opioid overdose and withdrawal and the treatment of each. 6. States the definition and purpose for conscious sedation.	A. Pain: Definition 1. Types of pain • Acute • Chronic • Superficial • Visceral 2. Opioid Analgesic • Mechanism of action • Indication for use • Contraindication for use • Dosage factors • Adverse effects • Laboratory tests 3. Pharmacodynamics and pharmacokinetics for • Opioid analgesics: - Morphine - Fentanyl - Codeine - Hydrocodone - Hydromophone - Meperidine - Methadone - Oxycodone • Opioid Agonist-Antagonist • Opioid Antagonist	**<u>Required Reading:</u>** Kee, J.L., Hayes, E., & McCuistion, L., pp. 294-301, 343-351, 356-359, 360-378. Pickar, pp. 455. Kee, J.L., et al <u>Study Guide</u> Chapter 21: Matching Exercise, Items 14-17 NCLEX Review Items 35-36, 41, 42 Chapter 25: Matching Exercise, Items 10-15 NCLEX Review Items 16-35 Chapter 26: Matching Exercise, Items 11-16 NCLEX Review Items 17-36

Unit Title: **Antiinflammatory and Pain Management Agents (Cont'd)**		
Objectives	**Content Outline**	**Student Activities**
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 the advantages and nursing responsibilities for the use of the on-Q PainBuster System on post-operative clients. 10. Discusses possible side effects, adverse reactions, and contraindications of opioid use.	• Opioid Overdose - Signs and symptoms - Overdose treatment • Opioid withdrawal with chronic dosing - Signs and symptoms - Drug withdrawal treatment: « Methadone programs « Clonidine 4. Procedural sedation/induction pre-anesthesia • Drugs used: Versed, Propofol 5. Effects of conscious sedation drugs • Sedation • Relaxation 6. PCA- Patient Controlled Analgesia • Purpose 7. On-Q PainBuster System: • Purpose • Nursing Responsibilities 8. Closely monitor clients for complications of opioid use including: • Side effects • Adverse Reactions • Contraindications	

Unit Title: **Antiinflammatory and Pain Management Agents** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Discusses the legal/ethical implications of drug administration with common health problems in relation to administering narcotics. 1. Identifies populations at risk for opioid addiction or abuse including the elderly. 2. Reviews the nursing responsibilities for the administration of opioid analgesics.	B. Legal-ethical implications in drug administration: • Opiate addiction or abuse • Nursing responsibilities	

Unit Title: Antiinflammatory and Pain Management Agents (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
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. 1. Discusses the role of prostaglandins in etiology of pain, fever, and inflammation. 2. States pharmacodynamics of aspirin and nonsteroidal anti-inflammatory drugs with consideration for the elderly and young children. 3. Compares and contrast aspirin, other NSAIDS, and acetaminophen. 4. Differentiates among antiplatelet, analgesic, and anti-inflammatory doses of aspirin.	1. Prostaglandins: Effects in the treatment of: • Pain • Fever • Inflammation 2. Aspirin (ASA), NSAIDS, acetaminophen: • Comparison of action • Management of Tylenol toxicity: Mucomyst therapy 3. Dose differences in aspirin when used as: • Antiplatelet • Analgesic • Anti-inflammatory • Lab test: activated thromboplastin time • Possible side effects 4. Pharmacodynamics and pharmacokinetics of prostaglandin drugs 5. Pharmacodynamics of the following drugs: • Analgesics: - Acetylsalicylic acid - Ibuprofen - Naproxen - Cyclooxygenase-2 inhibitor • Antigout Medications: - Colchicine - Uric Acid Inhibitor - Uricosurics	

Unit Title: **Antiinflammatory and Pain Management Agents** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
D. Discusses the use of sedative and hypnotics on the central nervous system.	D. Sedative-hypnotic drugs • Barbiturates - Long acting Purpose Example - Intermediate acting Purpose Example - Short acting o Purpose o Example • Miscellaneous drugs: Pharmacodynamics - Benzodiazepines - Nonbenzodiazepines - Chloral Hydrate	
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.	E. Client teaching including discussion about the effects of polypharmacology. • Safe use • Effective use • Monitor for interactions between drugs.	

Unit Title: Fluids and Electrolytes, Nutrition		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process in the promotion and maintenance of system stability related to vitamin and mineral uses. 1. Identifies the following characteristics of vitamins and minerals: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Interactions with medications • Contraindications and adverse effects • Nursing assessment and interventions • Patient education 2. Reviews functions and food sources of essential vitamins and minerals. 3. Identifies the nutritional states and diseases caused by vitamin and mineral imbalances. 4. Discusses the nursing responsibilities as they relate to the administration of vitamins and minerals.	A. Promoting and maintaining system stability in individuals receiving vitamins and minerals. 1. Affects of age on pharmacokinetics and pharmacodynamics of nutrients in: • Children • The elderly 2. Fat Soluble Vitamins • Vitamin A • Vitamin D • Vitamin E • Vitamin K 3. Water Soluble Vitamins • Vitamin B_1, B_2, B_3, B_6 • Vitamin B12 • Folate acid (folate) • Vitamin C	**<u>Required Reading</u>**: <u>Vitamins and Minerals:</u> Kee, J. L. Hayes, E., & McCuistion, L., pp. 213-228 <u>Fluid and Electrolytes:</u> Kee, J.L., Hayes. E., & McCuistion, L., pp. 229-244 <u>Nutritional Support:</u> Kee, J.L., Hayes, E., & McCuistion, L., pp. 245-253

Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Identifies the educational needs of clients on vitamin and mineral therapy with regards to dietary considerations and dosing. 1. Explains the usage of iron, copper, zinc, chromium and selenium. 2. Describes iron deficiencies and excess states. 3. Describes interactions between iron and some commonly used herbal remedies. 4. Discusses the chelating agents used to remove excessive copper, iron, and lead from body.	B. Education needs regarding vitamin/mineral therapy 1. Minerals: chromium, selenium, copper, iodine, zinc, and iron • Characteristics • Function • Food sources • Signs/symptoms of deficiency/excess • Treatment • Contraindications • Complications 2. Medications used to treat iron deficiency • Ferrous gluconate • Ferrous sulfate • Ferrous fumarate 3. Need for increased supplements of iron 4. Herbal interactions with iron 5. Excess states of iron • Iron poisoning (acute) • Hemochromatosis (chronic) • Chelating agent-metal antagonist ▪ Penicillamine ▪ Succimer ▪ BAL • Deferoxamine	

Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
C. Applies the nursing process in understanding mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications in the maintenance of system stability. 1. Defines osmosis, osmotic, osmolality, tonicity, ion, and electrolyte. 2. Discusses and identifies the osmolar states of intravenous solution. 3. Identifies the purpose and patient/disease-related considerations of the various intravenous solutions. 4. Identifies other medications and their purposes used in intravenous infusions. 5. Identifies assessment needs during administration and adverse reactions of the various intravenous infusions and their additives. 6. Identifies the purpose of blood and blood product transfusions. 7. Discusses the role of hyperalimentation, lipids, and enteral feedings. 8. Identifies assessments and interventions for adverse reactions during feedings.	C. Actions, doses, indications, adverse reactions, and nursing implications of fluids 1. Osmolar states of fluids in relationship to serum • Isotonic • Hypotonic • Hypertonic 2. Classifications of intravenous solutions • Crystalloids • Colloids • Blood and blood products • Lipids 3. Crystalloids • Water and electrolyte solutions 4. Colloids • Albumin • Plasma protein fractions • Dextran • Hetastarch 5. Blood and blood products • Whole blood • Packed red blood cells (PRBC) • Plasma & Platelets • Albumin 6. Hyperalimentation (PPN/TPN) 7. Lipids 8. Enteral feedings.	

Unit Title: Fluids and Electrolytes, Nutrition (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
D. Discusses age considerations for intravenous infusions.	D. Geriatric and pediatric populations	
E. Discusses the legal/ethical implications of drug administration for individuals with common health problems and their families.	E. Legal/ethical implications of IV therapy • Protocols and Procedures • RN responsibilities	
F. Identifies the implementation of the nursing process in the promotion and maintenance of system stability. 1. Describes signs, symptoms, and lab values of sodium, potassium, chloride, magnesium, calcium, and phosphorus imbalances. 2. Discusses the treatments used to correct sodium, potassium, chloride, magnesium, calcium, and phosphorus deficiency and excess.	F. Promoting system stability related to fluid & electrolyte imbalances. 1. Electrolyte function, food source, and normal serum levels • Sodium • Potassium • Chloride • Magnesium • Calcium • Phosphorus 2. Treatment of electrolyte imbalances • Medical interventions • Nursing assessments and interventions	

Unit Title: Drugs Used to Treat Infection: Tuberculosis		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing implications of selected drugs used to treat tuberculosis. 1. Identifies the following categories for all tuberculin medications: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Contraindications • Adverse effects (including lab values) • Nursing assessment • Nursing intervention • Patient education	A. Nursing implications of selected antitubercular drugs. 1. Isoniazid 2. Rifampin 3. Ethambutol 4. Pyrazinamide	**Required Reading**s: Kee, J.L., Hayes, E., & McCuistion, L., pp. 447-451, Table 32-2, p. 450 Kee, J.L., et al Study Guide pp 161-162 Matching Exercise, Items 21-24, 26-30

Unit Title: Drugs Affecting the Respiratory System		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process and the nursing implications of selected drugs affecting the respiratory system. 1. Discusses the following characteristics of all respiratory medications: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Contraindications • Adverse effects (including lab values) • Nursing assessment • Nursing intervention • Patient education 2. Discusses drugs used to treat upper respiratory conditions. • Antihistamine • Nasal decongestants • Systemic decongestants • Intranasal glucocorticoids • Antitussives • Expectorants	A. Nursing implications and the nursing process related to selected respiratory drugs. 1. Common drugs used to treat upper respiratory disorders: • Antihistamines - H blockers or H antagonists - 1st generation antihistamines - 2nd generation antihistamines • Nasal and systemic decongestants - Sympathomimetic amines • Intranasal gluocorticoids - Dexamethasone (Decadron) - Fluticasone (Flonase) • Antitussives - Codeine - Dextromethorphan • Expectorants - Robitussin	**Required Reading**s: Kee, J.L., Hayes, E., & McCuistion, L., pp. 586-598, 599-614. Table 40-1, pp. 590-591 Kee, J.L. et al Study Guide pp. 195-197, 199-201 Matching Exercise, Fill-ins, NCLEX Review Items

Unit Title: Drugs Affecting the Respiratory System (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
3. Discusses the following classifications of medications used to treat lower respiratory conditions: • Alpha-adrenergic agonists • Beta-adrenergic agonists • Anticholinergics • Methylxanthine derivatives • Leukotriene receptor antagonists • Glucocorticoids • Mucolytics 4. Discusses the characteristics of the following drugs: • Adrenergic bronchodilators • Anticholinergics • Methylxanthine derivatives 5. Discusses the use of asthma drugs according to severity and age. 6. Discusses the educational needs of clients who use the aerosol inhaler (MDI and DPI) to promote self-care.	2. Respiratory medications: • Isoproterenol • Metaproterenol • Albuterol • Epinephrine • Atrovent (Ipratropium) • Montelukast • Theophylline • Cromolyn and Nedocromil • Decadron • Acetylcysteine (Mucomyst)	

Unit Title: Drugs Affecting the Immune System: Antineoplastic		
Objectives	**Content Outline**	**Student Activities**
A. Applies the nursing process in determining the mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of drugs antineoplastic/oncology treatments. 1. Defines the terms antineoplastic and oncology. 2. Discusses rationales for using combination chemotherapy drugs, with surgical treatment, and with radiation treatment. 3. Describes the effects of the following drugs on cancer cells and normal cells during treatment: • Cytotoxics • Alkalating agents • Antimetabolites • Antitumor antibiotics • Plant alkaloids • Miscellaneous cytotoxic agents. 4. Lists cytotoxic neoplastic drugs that are associated with serious adverse effects: Bone marrow depression, cardiotoxicity, hepatotoxicity, nephrotoxicity, neurotoxicity.	A. Terminology: Antineoplastic, oncology B. Pharmacodynamics/pharmacokinetics of drugs: • Cytotoxics • Alkylating Agents • Antimetabolites • Antitumor antibiotics • Plant alkaloids • Miscellaneous cytotoxic agents C. Hormone and antihormone: Anticancer effects. D. Nursing process implications for antineoplastic drug therapy: • Assessment • Nursing Diagnoses • Planning/Goals • Interventions • Evaluations E. Cytotoxic antineoplastic drugs associated with serious adverse effects: • Bone marrow depression, cardiotoxicity, hepatoxicity, nephrotoxicity, neurotoxicity	**<u>Required Readings:</u>** Kee, J.L., Hayes, E., & McCuistion, L., pp. 511-540.

Unit Title: **Drugs Affecting the Immune System: Antineoplastic** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
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 • Antiemetics G. Guidelines for handling cytotoxic neoplastic drugs and for accident prevention to employees who manage cytoxin waste removal from wards H. Drugs used in oncology treatments that are associated with second malignancies I. Cytoxic 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	