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

NURSING 121
NURSING PHARMACOLOGY

Spring 2013

N121: NURSING PHARMACOLOGY
Spring 2013 – Semester 2

CARLSON CLASSROOM

Mondays, 0800 – 1100

WEEK	TOPIC	HOURS	INSTRUCTOR	DATE
1	Drugs Affecting the GI System	2	Trongone	01/14/13
2	***Martin Luther King Holiday***			01/21/13
3	Drugs Affecting Childbearing Women & Newborns	3	Thompson	01/28/13
4	**EXAM #1**	1		02/04/13
	Drugs Affecting the Immune System: Biological Response Modifiers	2	Mwangi	
5	Drugs Affecting the Endocrine System	3	Najera	02/11/13
6	***President's Day Holiday***			02/18/13
7	**EXAM #2**	1		02/25/13
	Drugs Used to Treat Infection: Antivirals	2	Webster	
8	Drugs Used to Treat Infection: Antimicrobial	3	Martinez	03/04/13
9	**EXAM #3**	1		03/11/13

COURSE TITLE:	**N121 NURSING PHARMACOLOGY**
PRE-REQUISITES:	Completion of Semester 1 requirements
UNITS:	1 unit
HOURS:	3 hours per week
LENGTH:	7 weeks
PLACEMENT:	Semester 2
CONCURRENCY:	All courses must be taken concurrently
COURSE DESCRIPTION:	This course builds on the content presented in Nursing Pharmacology 111. The major classifications of drugs studied are those affecting the endocrine system, the respiratory system, the digestive system, drugs used to treat infection, and drugs affecting the maternal child patient. This course emphasizes the nursing responsibilities related to the safe use of medications including dosage calculation when caring for all patients with special consideration to the childbearing and pediatric patient.

COURSE OBJECTIVES:

Upon satisfactory completion of the course, the student:

1. Applies the nursing process in understanding the mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of selected pharmacologic agents in the care of individuals and their families.

2. Discusses the legal/ethical implication of drug administration for individuals and their families.

3. Identifies the educational needs regarding drugs and the implication for individuals and their families.

4. Identifies sociocultural variables with respect to various medications for individuals and their families.

STUDENT LEARNING OUTCOMES:

Students competently identify the application and implementation of pharmacological knowledge needed in the nursing care delivery of patients receiving medications with special considerations for the childbearing and pediatric clients.

METHOD OF STUDENT EVALUATION:

Students attain an overall cumulative score of 70% or higher on exams indicating attainment of student learning outcome. Students are expected to attend lectures, prepare and participate in assigned learning activities.

Grade is calculated from:

3 exams consisting of 50 questions each

Exam 1 = 34%
Exam 2 = 33%
Exam 3 = 33%

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:

Lecture, discussion, visual aids, and reading material.

REQUIRED READINGS:

Kee, J.L., Hayes, E., & McCuistion, L.E. (2012). *Pharmacology A nursing process approach.* (7th ed.). St. Louis: Elsevier.

Berman, A., Snyder, S., Kozier, B., and Erb, G (2012). *Fundamentals of nursing* (9th ed). Upper Saddle River, New Jersey: Prentice Hall Health.

Lewis, S., Heitkemper, M. (2011). *Medical surgical nursing*. (8th ed.). St. Louis: Mosby Year Books.

McKinney, E. James, S.R., Ashwill, J.W., Murray, S. (2013). *Maternal-child nursing* (4th ed.). St. Louis: Elsevier Saunders.

Pickar, G. (2008). *Dosage calculations.* (8th ed.). Clifton Park, NY: Thomas Palmer Learning.

INSTRUCTOR REFERENCES:

www.drugguide.com
www.medscape.com
www.drugs.com
MICROMEDEX

All academic policies are strictly enforced.

Unit Title: Drugs Affecting The Gastrointestinal System		
Objectives	**Content Outline**	**Student Activities**
A. Utilizes assessment skills and the nursing process to ensure safe and appropriate medication administration. 1. Discusses the various drugs used to treat common gastrointestinal problems. • Anti-emetics – Emetics • Anti-diarrheal • Laxatives • Anti-ulcer • Anti-hemorrhoidal 2. Identifies the following characteristics and nursing implications of gastrointestinal drugs: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Contraindications • Adverse effects • Laboratory testing • Nursing assessment • Nursing intervention • Patient education 3. Discusses monitoring of drug effectiveness.	A. Using the nursing process to safely administer gastrointestinal system medications with special emphasis on educational needs, legal-ethical behaviors, and sociocultural needs of patients and families. 1. Review the digestive system (alimentary canal) and its function. 2. Antiemetics: antihistamines, anticholinergics, dopamine antagonists, and serotonin antagonists. • Meclizine (Antivert) • Scopalomine (Transderm-Scop) • Phenothiazines: o prochlorperazine (Compazine) o chlorpromazine (Thorazine) • Antihistamine: o promethazine (Phenergan) • Prokinetic agents: o metoclopramide (Reglan) • 5-HT3 receptor antagonists: o ondansetron (Zofran) o dolasetron (Anzemet) 3. Emetics/adsorbents • Syrup of ipecac • Activated charcoal	**<u>Required Reading</u>**: Kee: pp. 694-727. **<u>Discussion Topics</u>**: Review roles of digestive secretions and hormones. (Lewis et al. 8th ed. pp. 901-905 including tables 39-1, 39-2, 39-3, and 39-4.) Be prepared to discuss common medications for gastrointestinal disorders: Nausea & vomiting Diarrhea Constipation Gastroesophageal reflux disease (GERD) Peptic ulcer disease (PUD)

Unit Title: Drugs Affecting The Gastrointestinal System (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
4. Considers effects of gastrointestinal drugs on the following: • Pediatric patients • Elderly patients • Renal impaired patients • Hepatic impaired patients • Critically ill patients • Pregnant patients B. Identifies educational needs of the family and the individual receiving gastrointestinal medication. 1. Discusses side effects of medication. 2. Discusses proper dosing of medication and compliance with regimen. 3. Identifies potential problems as a result of habitual use. 4. Identifies important dietary teaching to enhance progression to well-being. 5. Drug to drug/food interactions. C. Demonstrates legal/ethical behaviors that indicate accountability in the administration of medication. D. Identifies sociocultural variables of individuals with common health problems in relation to various medications.	4. Anti-diarrheals • Opiates and opiate related agents: o diphenoxylate with atropine sulfate (Lomotil) o loperamide (Imodium, Kaopectate II) • Absorbents: o bismuth subsalicylate (Pepto-Bismol, Kaopectate) • Somatostatin analog: o octreotide acetate (Sandostatin) • Antibacterial agents • Miscellaneous 5. Laxatives and cathartics • Osmotics (saline): o Mg citrate solution o polyethylene glycol (MiraLax) o Mg hydroxide (MOM) o sodium phosphate (Fleets enema) o lactulose • Stimulants: o senna (Senokot) o bisacodyl (Dulcolax, Correctol) • Lubricant: o mineral oil	

Unit Title: Drugs Affecting The Gastrointestinal System (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
	• Bulk-forming o psyllium (Metamucil) o polycarbophil (FiberCon) o methylcellulose (Citrucel) • Stool softeners: o docusate sodium (Colace) 6. Anti-ulcer drugs • Antacids: o aluminum hydroxide, (Amphojel) o magnesium hydroxide (MOM) o combination: (Mylanta, Maalox) • H2 receptor antagonists: o ranitidine (Zantac) o famotidine (Pepcid) o cimetidine (Tagamet) • Proton pump inhibitors: o omeprazole (Prilosec) o lanzoprazole (Prevacid) o combinations (Prevpac) • Prostaglandin analog: o misoprostol (Cytotec) • Pepsin inhibitor: o sucralfate (Carafate)	

Unit Title: Drugs Affecting Childbearing Women and Newborns		
Objectives	**Content Outline**	**Student Activities**
A. Utilizes the nursing process in the proper administration of medications to childbearing women and newborns. 1. Identifies nursing considerations when using medications during the preconception and antepartum periods. 2. Identifies the following characteristics for all medications used in the perinatal area. Pharmacokinetics Pharmacodynamics Therapeutic uses Indication for use Route and dosage range Mechanism of action Contraindications Adverse effects Laboratory testing Nursing assessment Nursing intervention Patient education	A. Using the nursing process to administer medications to childbearing women and their newborns: 1. Medications in the preconception and antepartum periods. • Contraception - OCP - DepoProvera - Transdermal - IUD - Emergency Contraception (EC) 2. Therapeutic use of medication and herbs during pregnancy. • Iron • Folic acid • Prenatal vitamins • Meds for N/V • Meds for heartburn • Meds for pain 3. Medications used to treat PTL. • Tocolytics - Magnesium sulfate - Terbutaline - Nifedipine • Corticosteroids - Betamethasone	**Required Reading**: Kee: pp. 800-890 (Chapters 53-56) McKinney: pp. 281-287, 395-410, 589-596, 651-654, 697-698, 742-748, 756, 789-792 **Discussion Topics**: Review the female reproductive system. Be prepared to discuss medications related to the following: Family Planning Labor Management Medication and Nutrition for Mother and Newborn Perinatal Hemorrhage Pre-eclampsia Pre-term Labor (PTL)

Unit Title: Drugs Affecting Childbearing Women and Newborns (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
B. Identifies nursing considerations when using medications during the intrapartum period. C. Identifies nursing considerations when using medications during the postpartum period. D. Discusses specific patient education needs with various medications. E. Compares and contrasts various beliefs of different ethnic groups relating to childbearing.	4. Medications used to treat preclampsia. • Magnesium sulfate • Hydralazine • Labetalol 5. Medications in the intrapartum period. • Oxytocin • Carboprost • Methergine • Prostaglandin • Abortifacient 6. Medications in the postpartum period. • Lactation suppressants/stimulants • After pain • Perineal wounds • Bowel function • Hemorrhoids • Immune globulins - Rhogam - Rubella • Newborns - Vitamin K - Erythromycin ophthalmic ointment - Triple Dye	

Unit Title: Drugs Affecting Childbearing Women and Newborns (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
	7. Medications used with other disorders • PMS • Endometriosis • Menopause - HRT 8. Patient Education Issues • Ascorbic acid with iron • Iron rich foods • Rh and Rhogam 9. Sociocultural considerations in medication administration. • Nutrition and supplementation • Substance abuse • Childbirth pain	

Unit Title: Drugs Affecting the Immune System: Biologic Response Modifiers		
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 affecting hematopoietic and immune system. 1. Defines the following terms: biologic response modifiers, hematinic, hematopoiesis, granulocyte, colony stimulating factor, thrombocytopenia, anemia, neutropenia. 2. Discusses the characteristics of hematopoietic and immunostimulant drugs. 3. Discusses the biologic response modifiers in the treatment of anemia, leukopenia, neutropenia, and thrombocytopenia. 4. Describes the use of filgrastim and sargrasmostim (Colony Stimulating Factor) in the treatment of neutropenia. 5. Lists the laboratory tests the nurse can use to determine the effectiveness of immunostimulant drug (epogen). 6. Names vitamins and minerals that play a role in hematinic function in all age groups: the elderly, children and infants.	A. Terminology: Definitions of: biologic response modifiers, hematinic, hematopoiesis, granulocyte, colony stimulating factor, thrombocytopenia, anemia, neutropenia B. Overview of the hematopoietic and immune stimulating drugs • Colony Stimulating Factors/Growth Factors • Interleukins • Interferons C. Characteristics of hematopoietic and immunostimulant drugs • Goals and methods of enhancing hematopoietic and immune functions. • Adverse effects of drugs. D. Management of patients receiving hematopoietic and immune system drugs • Nursing Process implication in drug administration: - Assessment - Nursing diagnoses - Planning/Goals - Interventions - Evaluation .	**<u>Required Readings:</u>** Kee, J.L., Hayes, E., & McCuistion, L., pp. 568-585.

Unit Title: **Drugs Affecting the Immune Systems: Biologic Response Modifiers** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
7. Describes the sociocultural and religious considerations in administering erythropoietin.	E. Principles of drug therapy (colony stimulating factors) • Inpatient versus outpatient drug administration • Lab monitoring: CBC • Use in patients with cancer • Existing renal or hepatic impairment F. Sociocultural consideration • Ethical: Appropriateness of epoetin administration in Jehovah's Witness client	

Unit Title: Endocrine Drugs		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process in understanding selected endocrine drugs utilized in the care of individuals with endocrine problems. 1. Identifies and discusses general characteristics of medications affecting the endocrine system. Pharmacokinetics Pharmacodynamics Therapeutic uses Indication for use Route and dosage range Mechanism of action Contraindications Adverse effects Laboratory testing Nursing assessment Nursing intervention Patient education 2. Discusses the drugs used to diagnose and treat endocrine disorders. 3. Discusses the agents for disorders involving the pituitary gland, thyroid gland, parathyroid gland, adrenal gland and ADH.	A. Using the nursing process to administer endocrine drugs: 1. Origin, function and effects of the following: Hormone Hypophysis Thyroxine Glucocorticoids 2. Hormones secreted from the adenohypophysis and the neurohypophysis. 3. General characteristics of medications for the following: Thyroxine (T4) Triiodothyronine (T3) Parathyroid hormone (PTH) Glucocorticoids Mineralcorticoids	**Required Readings**: Kee: pp. 763-779, 780-795. **Discussion Topics**: Review A & P of Endocrine System Be prepared to discuss what major organs produce hormones and how they act in various ways.

Unit Title: Endocrine Drugs (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
4. Identifies sociocultural variable when providing safe and appropriate medication administration to individuals with inappropriate carbohydrate metabolism. 5. Discusses the parenteral types of antidiabetic agents, syringe types and proper storage. 6. Discusses the nursing implications of the various types of oral agents. B. Identifies the educational needs of the individual and their families affected by diabetes.	B. Client teaching 1. Hormonal replacement 2. Hormonal inhibition for the pituitary, thyroid, parathyroid and adrenal glands. 3. Antidiabetic agents Insulin - Rapid acting - Regular - Intermediate acting - Long acting - Combination /mixed Oral Hypoglycemic Drugs - Sulfonylureas - Biguanides - Alpha glucosidase inhibitors - Thiazolidinediones - Meglitinides - Incretin modifiers - Amylin analog - Fixed combination oral antidiabetic drugs Hyperglycemic Drugs - Glucagon - Diazoxide	**<u>Discussion Topics</u>**: Be prepared to discuss antidiabetic drugs. Be prepared to discuss the onset, peak and duration of action time for the different types of insulin and when a hypoglycemic reaction is most likely to occur.

Unit Title: Drugs Used to Treat Infection: Antivirals, Antifungals, Antiparasitics, and Antiprotozoals		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process and the nursing implications of selected drugs used to treat viral infections, parasites, and protozoas. 1. Identifies the following categories for all anti-infectives 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. Applying the nursing process to selected anti-infective drugs. 1. Antiviral drugs Acyclovir Amantadine Rimantadine 2. Antifungal drugs Amphotericin Fluconazole Nystatin 3. Antiparasitic drugs Amebicides Antimalarial agents Antihelmintics Metronidazole Scabicides and pediculicides	**Required Readings**: Kee: pp. 451-470 McKinney: pp. 1031-1032, 1309-1319 **Discussion Topics**: Discuss the various types of drugs used for: Herpes infections Malaria Influenza A Helminthiasis Scabies infestation Helminthiasis Discuss the common treatment of parasitic infections in school age children.

Unit Title: Drugs Used in the Treatment of Infection: Antimicrobial		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process in understanding mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implications of selected antimicrobials utilized in the care of individuals with common health problems. 1. States the meaning of the term antibacterial/antimicrobial. 2. Describes the general characteristics of selected antimicrobial drugs in terms of: • Effectiveness • Safety • Microbial activity • Mechanism of action • Indications for use 3. States principles of therapy specific to each antimicrobial category. 4. States guidelines for drug administration for each antimicrobial category. 5. Discusses common and potentially serious adverse effects of antimicrobial drugs. 6. Discusses ways to increase benefits and decrease hazards of antimicrobial therapy. 7. States ways to minimize the emergence of drug-resistant microorganisms.	A. Definition of antimicrobial as a drug category • General characteristics of antimicrobial drugs B. Pharmacokinetics, pharmacodynamics, and physiology of antimicrobials in the treatment of infections and infections that may be transmitted to others by birth, STI's, and specific organisms • Penicillin • Cephalosporin • Macrolides • Tetracyclines • Aminoglycosides • Fluoroquinolones • Sulfonamides • Drugs for urinary tract disorders C. Identification of common side effects for each antimicrobial category: • Drug monitoring for each category - Peak and trough testing - Lab tests - Physical assessment findings	**Required Reading:** Kee, J.L., Hayes, E., & McCuistion, L. pp. 408-445, 471-478 **Recommended Reading** Kee, J.L. Study Guide: Chapters 29, 30, 31, & 34

Unit Title: **Drugs Used in the Treatment of Infection: Antimicrobial** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
8. States appropriate nursing implications for a client receiving antimicrobial drugs. 9. Differentiates factors significant to the use of antimicrobial drugs in children, elderly adults, client with renal or hepatic impairment, and those with critical illness.	D. Effects of probenecid when used in conjunction with penicillins and aminoglycosides E. Foods and drugs that interfere with absorptions of specific antimicrobial drugs F. Nursing process use in antimicrobial therapy • Assessment • Nursing diagnoses • Planning/goals • Interventions • Evaluation	
B. Discusses the legal/ethical implications of drug administration for individuals with common health problems in relation to antimicrobials. 1. Discusses the steps the nurse should take to inform the health care team regarding a client's medication allergies. 2. States how the nurse could recognize clients who have or are at risk for renal or hepatic impairment prior to drug administration. 3. Recognizes drugs with known side effects such as nephrotoxicity or ototoxicity, or others that may place a client at risk.	G. Drug reactions • Close monitoring of clients for: - Drug allergies - Therapeutic and/or side effects • Prompt documentation and reporting of: - Drug reactions/side effects	

Unit Title: **Drugs Used in the Treatment of Infection: Antimicrobial** (Cont'd)		
Objectives	**Content Outline**	**Student Activities**
C. Identifies the educational needs and teaching methodologies appropriate for clients receiving antimicrobial therapy. 1. Discusses client teaching for each of the of the antimicrobial drug categories. 2. Teaches clients strategies for preventing, recognizing, and intervening in situations that may put them at risk for infection.	H. Teaching guidelines for antimicrobial drug administration: • Content of the teaching plan for the drug • Validation of client understanding of the instructions - Client responses to action/s required for side effects or if the drug is not producing the expected results.	
D. Recognizes sociocultural variations of individuals with common health problems in relationship to antimicrobial therapy. 1. Assesses clients in the context of biocultural variations, heredity, genetics, endemics. 2. Obtains client information regarding use of traditional and folk therapies. 3. Provides information to clients as needed to increase their compliance with prescriptive therapies.	I. Discussion of complementary, alternative, and traditional medications • Client preferences: Some may prefer non-prescriptive remedies vs. prescribed medications. - Dangers of relying solely on non-prescriptive remedies in the presence of severe infection/illness. - Need for additional teaching/ reassessment - Include client's family in health teaching	

11/2012