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

NURSING 121:

NURSING PHARMACOLOGY

Spring 2023

COURSE TITLE:	**N121 NURSING PHARMACOLOGY**
PRE-REQUISITES:	Completion of Semester 1 requirements
UNITS:	1 unit
HOURS:	Approximately 3 hours per week
LENGTH:	8 weeks
PLACEMENT:	Semester 2
CONCURRENCY:	All semester theory courses are taken concurrently with their corresponding clinical courses.

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 gastrointestinal system, the female reproductive system, the immune system, and drugs used to treat infection. This course emphasizes nursing responsibilities related to the safe and appropriate use of medications including dosage calculation when caring for all clients with special consideration to the childbearing and pediatric clients. This course will also discuss the role of the nurse as to education of clients and their families regarding medication administration.

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

1. Apply the nursing process in understanding the mechanism of action, therapeutic dose, indications, adverse reactions and the nursing implications of selected pharmacologic agents for safe patient-centered care of individuals and their families.

2. Utilize medication information and electronic drug guides to communicate effectively, manage knowledge and mitigate errors in the care of individuals and their families.

3. Discuss importance of establishing collaborative relationships with members of the healthcare team for the

purpose of providing and improving the safety of medication administration.

4. Examine the legal/ethical implications of medication administration to improve quality of care for individuals and their families.

5. Describe factors that create a culture of safety in decision-making for medication administration.

6. Discuss the educational and teaching needs using current evidence-based practice regarding drugs and the implication for individuals and their families.

7. Identify the impact of sociocultural variables with respect to practices and beliefs about 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.

TEACHING METHODS: Lecture, discussion, visual aids, and reading material.

METHOD OF EVALUATION: Students attain an overall cumulative score of 70% or higher on Exams indicating attainment of student learning outcomes. Students are expected to attend lectures, prepare and participate in assigned learning activities.

<u>Grade is calculated from:</u>
3 exams consisting of 50 questions each
Exam 1 = 32%
Exam 2 = 32%
Exam 3 = 32%

4 Adaptive Learning Assignments = 4% (1% per chapter assigned)

NO LATE ASSIGNMENTS WILL BE ACCEPTED

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.

REQUIRED READINGS:

Taylor, C., Lynn, P., & Bartlett, J.L. (2019). *Fundamentals of nursing: The art and science of person-centered nursing care* (9th ed). Philadelphia, PA: Lippincott Williams & Wilkins.

Frandsen, G., & Pennington, S.S. (2021). *Abrams' Clinical Drug Therapy: Rationales for nursing practice* (12th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Hinkle, J., & Cheever, K.H. (2022). *Brunner & Suddarth's textbook of medical-surgical nursing* (15th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

McKinney, E., Murray, S., Mau, K., James, S., Nelson, K., Ashwill, J., & Carroll, J. (2022). *Maternal-child nursing* (6th ed.). St. Louis: Elsevier.

INSTRUCTOR REFERENCES:

https://www.drugguide.com
https://www.reference.medscape.com
https://www.drugs.com
MICROMEDEX

All academic policies are strictly enforced.

For any conflict or issue, students must first meet with their respective instructor to discuss a solution. If issue is not resolved, students must adhere to the appropriate chain of command starting with the Semester Coordinator, SON Dean, and Provost

Nursing Pharmacology

Lippincott CoursePoint+ for Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Twelfth Edition.

N121

Your CLASS CODE is: **B55BCB7**

1. If you don't already have access to Lippincott CoursePoint+ for Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Twelfth Edition., redeem your **ACCESS CODE** and complete registration at http://thePoint.lww.com/activate.
2. Once you have redeemed your Access Code and are logged into thePoint, from the **"My Content"** page, click **Launch** under Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Twelfth Edition.
3. On the content homepage, select "Join a Class", enter your **CLASS CODE: 36619400**, and click "Join this Class"

If you experience any problems, check the code again and re-enter it. If it does not work, contact Lippincott Online Product Support at

1-800-468-1128 or techsupp@lww.com for assistance.
Not sure what an **ACCESS CODE** is?
Learn more at http://thepoint.lww.com/Help/BookAccess.

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 GI problems. • Anti-emetics & emetics • Anti-diarrheal • Laxatives • Anti-ulcer • Anti-hemorrhoidal 2. Identifies the following characteristics and nursing implications of GI drugs: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Contraindications • Adverse effects • Laboratory testing • Nursing assessment • Nursing interventions • Patient education 3. Discusses monitoring of drug effectiveness.	A. Using the nursing process to safely administer GI 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 functions. 2. Anti-emetics: antihistamines, anticholinergics, dopamine antagonists, and serotonin antagonists. • Meclizine (Antivert) • Scopolamine (Transderm-Scop) • Phenothiazines: ○ Prochlorperazine (Compro) ○ Chlorpromazine (Thorazine) • Antihistamine: ○ Hydroxyzine (Vistaril) ○ Promethazine (Phenergan) • 5-HT3 receptor antagonists: ○ Ondansetron (Zofran) ○ Dolasetron (Anzemet) 3. Emetics/adsorbents • Activated charcoal • Syrup of ipecac	**<u>Required Readings:</u>** **Frandsen text:** Toxicology/Drug OD pp. 29-30 Pepcid ulcer disease & hyperacidity pp. 744-762 Nausea & vomiting pp. 764-781 Constipation & elimination problems pp. 784-796 Drug therapy for diarrhea pp. 799-808

UNIT TITLE: Drugs affecting the gastrointestinal system cont.		
Objectives	**Content Outline**	**Student Activities**
4. Considers effects of GI drugs on the following: • Pediatric patients • Elderly patients • Renal or hepatic impaired • Critically ill patients • Pregnant patients B. Identifies educational needs of the family and the individual receiving GI 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.	4. Anti-diarrheal • Opiates & 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) o Lactulose • Lubricant: o Mineral oil • Bulk-forming o Psyllium (metamucil) o Polycarbophil (FiberCon) o Methylcellulose (Citrucel)	

UNIT TITLE: Drugs affecting the gastrointestinal system cont.		
Objectives	**Content Outline**	**Student Activities**

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.
 	
E. Identifies nonpharmacologic management.
	• Stool Softeners:
	  ○ Docusate sodium (Colace)
	
	6. Anti-ulcer drugs
	• Antacids:
	  ○ Aluminum hydroxide (Amphojel)
	  ○ Magnesium hydroxide (MOM)
	  ○ Combination (Mylanta, Maalox)
	  ○ Calcium carbonate (Tums)
	• H2 receptor antagonists:
	  ○ Famotidine (Pepcid)
	  ○ Cimetidine (Tagamet)
	  ○ Nizatidine (Axid)
	• Proton Pump inhibitors:
	  ○ Omeprazole (Prilosec)
	  ○ Esomeprazole (Nexium)
	  ○ Lansoprazole (Prevacid)
	  ○ Pantoprazole (Protonix)
	  ○ Rabeprazole (Aciphex)
	  ○ Combinations (prevpac)
	• Prostaglandin analog:
	  ○ Misoprostol (Cytotec)
	• Pepsin inhibitor:
	  ○ Sucralfate (Carafate)
	
	7. Acupuncture, acupressure, and herbal supplements.	

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 interventions • 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:	**<u>Required Readings:</u>** **Frandsen text:** Adrenocorticoid/mineralocorticoid pp. 901 – 910 Corticosteroids pp. 332 – 354 Pituitary drugs pp. 865 – 882 Thyroid drugs pp. 850 – 864 Parathyroid drugs pp. 883 – 900 Antidiabetic drugs pp. 812 – 849 **<u>CoursePoint + Prep U</u>** **Chapter 41** –Diabetes Mellitus **Chapter 42** –Hyperthyroidism and Hypothyroidism ***Due 02/09/23 @ 1030*** **Discussion topics:** • Review A&P of Endocrine system • Be prepared to discuss what major organs produce hormones and how they act in various ways. • 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: Endocrine cont.

Objectives	Content Outline	Student Activities
	• Adrenocorticoids • Mineralocorticoids • Corticosteroids • Growth hormone • Thyroid drugs • Parathyroid drugs • Antidiabetic drugs	
4. Identifies sociocultural variable when providing safe and appropriate medication administration to individuals with inappropriate carbohydrate metabolism.	4. Sociocultural variable in safe medication administration to individuals with inappropriate carbohydrate metabolism	
5. Discusses the parenteral types of antidiabetic agents, syringe types and proper storage.	5. Antidiabetic Agents • Insulin /Oral hypoglycemic • Routes (oral & parenteral) • Types of syringe • Proper storage	
6. Discusses the nursing implications of the various types of oral agents.	6. Nursing Implications	
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. Anti-diabetic agents	

UNIT TITLE: Endocrine cont.		
Objectives	**Content Outline**	**Student Activities**
	Insulin types • Rapid acting • Short acting • 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	

UNIT TITLE: Drugs used to treat infections: Part I (viruses, fungi, and parasitic infections)		
Objectives	**Content Outline**	**Student Activities**
A. Discuss the nursing process and the nursing implication of selected drugs used to treat viral infections, parasitic infections, and protozoal infections. 1. Identify the following categories for all anti-infective medications: • Pharmacokinetics • Pharmacodynamics • Therapeutic uses • Indication for use • Route and dosage range • Mechanism of action • Contraindications • Adverse effects • Laboratory values • Nursing assessment • Nursing interventions • Patient education	A. Apply the nursing process and implications to selected viral, parasitic, and protozoal drugs. 1. Anti-infective medication categories: A. Antiviral drugs • Acyclovir • Valacyclovir • Rimantadine • Remdesivir • Monoclonal antibodies • Oseltamivir B. Antifungal drugs • Amphotericin • Fluconazole • Nystatin C. Antiparasitic drugs • Amebicides • Antimalarial agents • Anthelmintic • Scabicides & Pediculicides	**<u>Required Readings:</u>** **Frandsen text:** Viral infections pp. 433 – 449 Fungal infections pp. 472 – 484 Parasitic infections pp. 493 – 505 **McKinney text:** Helminths p. 928 Candidiasis pp. 1189 – 1190 Herpes pp. 1193 – 1194 Skin infestations pp. 1194 – 1197 **Discussion topics:** Herpes, COVID-19, influenza A, candidiasis, mycoses, amebiasis, malaria, trichomoniasis, helminthiasis, scabies and lice. Discuss common treatment of parasitic infections in school-age children.

UNIT TITLE: Drugs used in the treatment of infection: Part II (anti-bacterials)		
Objectives	**Content Outline**	**Student Activities**
A. Discusses the nursing process in understanding mechanism of action, therapeutic dose, indications, adverse reactions, and nursing implication 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 • Indication for use	A. Nursing process, mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of selected drug categories. • Penicillins • Cephalosporins • Aminoglycosides • Fluoroquinolones • Tetracyclines • Sulfonamides • Macrolides • Miscellaneous anti-infective agents 1. Types of microorganism's drugs act upon 2. Effectiveness of drug, safety concern, pharmacokinetics, pharmacodynamics, and indication for use in the treatment of infections and those that may be transmitted to others by birth, STI's, and specific organisms.	**Required Readings:** **Frandsen text:** Beta-Lactam antibacterial agents pp. 355-368 Aminoglycosides & fluoroquinolones pp. 375-384 Tetracyclines, sulfonamides & urinary antiseptics pp. 387-397 Macrolides & miscellaneous anti-infectives pp. 401-406, and Metronidazole pp. 410 Vancomycin pp. 411 **CoursePoint + Prep U** Chapter 23 – viral infections Chapter 24 – fungal infections ***Due 02/23/23 @ 1030***

UNIT TITLE: Drugs used in the treatment of infection: Part II (anti-bacterials) cont.		
Objectives	**Content Outline**	**Student Activities**
3. States ways to minimize the emergence of drug-resistant microorganisms. 4. States appropriate nursing implications for a client receiving antimicrobial drugs. 5. Differentiates factors significant to the use of antimicrobial drugs in children, elderly adults, clients with renal or hepatic impairment, and those with critical illness. 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, ototoxicity, or others that may place a client at risk.	3. Drug resistance prevention and secondary infections related to antimicrobial therapy 4. Nursing implications • Peak and trough testing • Pertinent lab results • Physical assessment findings • Food and drug interactions • Culture and sensitivity 5. Safety concerns and administration of antimicrobial drugs in children, elderly adults, clients with renal or hepatic impairment and those with critical illness. B. Legal and ethical implications of drug administration 1. Prompt documentation and reporting of drug reactions & side effects, close monitoring for drug allergies, adverse & therapeutic effects. 2. Labs and co-morbidities that may put a client at risk for renal or hepatic impairment. 3. Drug classes with known adverse effects • Various beta-lactam antibacterials • Aminoglycosides • Fluoroquinolones	

UNIT TITLE: OB pharmacology and women's health cont.		
Objectives	**Content Outline**	**Student Activities**
A. Utilized the nursing process in the proper administration of medications to childbearing women and newborns. 1. Identifies nursing considerations when using various 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	A. Using the nursing process to administer medications to women across the span of reproductive to non-reproductive life: 1. Medications in the preconception and post reproductive periods. • Contraception ○ OCP ○ Injections ○ Transdermal ○ IUD ○ Emergency contraception (EC) • Medications used with other disorders ○ PMS ○ Endometriosis ○ Menopause - HRT - bisphosphonates 2. Therapeutic use of medications/supplements during pregnancy and the antepartum period. • Iron • Folic acid • Prenatal vitamins • Meds for N/V – heartburn • Medications used to treat PTL ○ Tocolytics - Magnesium sulfate	**<u>Required Readings:</u>** **Frandsen (pharm) text:** Pregnancy/Lactation pp. 93-106 Women's health pharm pp. 108-127 Vitamin D & Bisphosphonates pp. 892-895 **McKinney (maternal-child) text:** Nutritional requirements during childbearing pp. 260-267 Pharmacologic pain mgmt. pp. 364-377 Pregnancy related complications pp. 539-553 Hormonal contraceptives pp. 668-673

UNIT TITLE: OB pharmacology and women's health cont.		
Objectives	**Content Outline**	**Student Activities**
• Contraindications • Adverse effects • Laboratory testing • Nursing assessment • Nursing interventions • Patient education	- Terbutaline - Nifedipine ○ Corticosteroids - Betamethasone ○ Prophylactic - Progesterone • Medications used to treat pre-eclampsia ○ Magnesium sulfate ○ Hydralazine ○ Labetalol	
B. Identifies nursing considerations when using medications during the intrapartum period.	B. Therapeutic use of medications during intrapartum period. • Oxytocin • Carboprost • Methergine • Prostaglandin • Analgesia/sedation • Regional anesthesia	
C. Identifies nursing considerations when using medications during the postpartum period.	C. Medications in the postpartum period. • Lactation suppressants/stimulants • Pain • Perineal wounds • Bowel function • Hemorrhoids • Rhogam (Immune globulin)	
D. Discusses educational needs regarding various medications and consideration of different beliefs/ethnic groups..	D. Importance of patience education and consideration of different beliefs/ethnic groups when planning education.	

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 hematopoiesis and the 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 (BRMs) in the treatment of anemia, leukopenia, neutropenia, and thrombocytopenia.	A. Nursing process, mechanism of action, therapeutic dose, indications, adverse reactions and nursing implications of drug affecting the immune system. 1. Terminology/Definitions: biologic response modifiers, hematinic, hematopoiesis, granulocyte, colony stimulating factor, thrombocytopenia anemia, and neutropenia. 2. Overview and characteristics of the hematopoietic and immune stimulating drugs: • Erythropoiesis stimulating agents – *Epoietin, Darbapoietin* • Granulocyte colony stimulating factor (G-CSF) – *Filgrastim, Pegfilgrastim* • Granulocyte-Macrophage (GM-CSF) – *Sargramostim* • Interferons • Interleukins – *Aldesleukin, Oprelvekin* 3. Biologic response modifiers • Goals and methods of enhancing hematopoietic / immune functions • Adverse effects of drugs	**<u>Required Readings:</u>** **Frandsen text:** Hematopoietic disorders pp. 193 – 208 Monoclonal Antibodies pp. 238 – 243

UNIT TITLE: Drugs affecting the immune system: Biologic response modifiers cont.		
Objectives	**Content Outline**	**Student Activities**
4. Describes the use of filgrastim, pegfilgrastim and sargramostim (Colony Stimulating Factor) in the treatment of neutropenia.	4. Management of patients receiving immune response medications using nursing process and in treating the neutropenia using the nursing process	
5. Lists the laboratory tests the nurse can use to determine the effectiveness of immunostimulant drugs.	5. Principles of drug therapy • Inpatient vs outpatient drug Administration • Lab monitoring: CBC • Use in patients with cancer • Existing renal or hepatic impairment	
6. Names vitamins and minerals that play a role in hematinic function in all age groups: the elderly, children and infants.	6. Vitamins and minerals • Role in hematinic function in all age groups	
7. Describes the sociocultural and religious considerations in administering erythropoietin.	7. Sociocultural considerations • Ethical: Appropriateness of epoetin administration in Jehovah's Witness client	