

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

NURSING 121:
NURSING PHARMACOLOGY

Fall 2020

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 semester theory courses are taken concurrently with the 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: <ol style="list-style-type: none">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.

****Due to Covid-19, lecture format will be audio PowerPoint presentations. Each lecture will be posted on the School website the week the lecture is scheduled. All questions following the presentation will be answered via email by the lecturer.**

**METHOD OF
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 = 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. (2018). *Abrams' Clinical Drug Therapy: Rationales for nursing practice* (11th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Hinkle, J., & Cheever, K.H. (2018). *Brunner & Suddarth's textbook of medical-surgical nursing* (14th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

McKinney, E., James, S., Murray, S., Nelson, K., & Ashwill, J. (2018). *Maternal-child nursing* (5th ed.). St. Louis: Elsevier.

**INSTRUCTOR
REFERENCES:**

www.drugguide.com
www.medscape.com
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

Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Eleventh Edition

Your CLASS CODE is: 702761B2

1. If you don't already have access to Lippincott Course Point+ for Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Eleventh Edition, redeem your **ACCESS CODE** and complete registration at <http://thePoint.lww.com/activate>.
2. From the **“My Content”** page, click on Lippincott Course Point+ for Frandsen & Pennington: Abrams' Clinical Drug Therapy: Rationales for Nursing Practice, Eleventh Edition.
3. On the welcome screen or from **“My Classes”**, select **“Join a Class”**, enter your **CLASS CODE: 702761B2** and click **“Enroll”**.

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: Endocrine Drugs		
Objectives	Content Outline	Student Activities
<p>A. Discusses the nursing process in understanding selected endocrine drugs utilized in the care of individuals with endocrine problems.</p> <ol style="list-style-type: none"> 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. 	<p>A. Using the nursing process to administer endocrine drugs:</p> <ol style="list-style-type: none"> 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 	<p><u>Required Readings:</u></p> <p>Frandsen & Pennington: Corticosteroids pp: 326-347 Pituitary Drugs pp: 841-857 Thyroid Drugs pp: 827-839 Parathyroid Drugs pp: 859-874 Antidiabetic Drugs pp: 790-826</p> <p><u>Discussion Topics:</u></p> <p>Review A & P of Endocrine System</p> <p>Be prepared to discuss what major organs produce hormones and how they act in various ways.</p>

Unit Title: Endocrine Drugs (Cont'd)		
Objectives	Content Outline	Student Activities
<p>4. Identifies sociocultural variable when providing safe and appropriate medication administration to individuals with inappropriate carbohydrate metabolism.</p> <p>5. Discusses the parenteral types of antidiabetic agents, syringe types and proper storage.</p> <p>6. Discusses the nursing implications of the various types of oral agents.</p> <p>B. Identifies the educational needs of the individual and their families affected by diabetes.</p>	<p>B. Client teaching</p> <ol style="list-style-type: none"> 1. Hormonal replacement 2. Hormonal inhibition for the pituitary, thyroid, parathyroid and adrenal glands. 3. Antidiabetic agents <ul style="list-style-type: none"> Insulin <ul style="list-style-type: none"> - Rapid acting - Short acting - Intermediate acting - Long acting - Combination /mixed <p>Oral Hypoglycemic Drugs</p> <ul style="list-style-type: none"> - Sulfonylureas - Biguanides - Alpha glucosidase inhibitors - Thiazolidinediones - Meglitinides - Incretin modifiers - Amylin analog - Fixed combination oral antidiabetic drugs <p>Hyperglycemic Drugs</p> <ul style="list-style-type: none"> - Glucagon - Diazoxide 	<p><u>Discussion Topics:</u></p> <p>Be prepared to discuss antidiabetic drugs.</p> <p>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.</p>

Unit Title: OB Pharmacology and Women's Health		
Objectives	Content Outline	Student Activities
<p>A. Utilizes the nursing process in the proper administration of medications to childbearing women and newborns.</p> <p>1. Identifies nursing considerations when using medications during the preconception and antepartum periods.</p> <p>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</p>	<p>A. Using the nursing process to administer medications to women across the span of reproductive to non-reproductive life:</p> <p>1. Medications in the preconception and post reproductive periods.</p> <ul style="list-style-type: none"> • Contraception <ul style="list-style-type: none"> ○ OCP ○ Injections ○ Transdermal ○ IUD ○ Emergency Contraception (EC) • Medications used with other disorders <ul style="list-style-type: none"> ○ PMS ○ Endometriosis ○ Menopause <ul style="list-style-type: none"> - HRT - biphosphonates <p>2. Therapeutic use of medications/supplements during pregnancy the antepartum period.</p> <ul style="list-style-type: none"> ○ Iron ○ Folic acid ○ Prenatal vitamins ○ Meds for N/V - heartburn ○ Meds for discomfort ○ Medications used to treat PTL. <ul style="list-style-type: none"> ○ Tocolytics <ul style="list-style-type: none"> - Magnesium sulfate - Terbutaline - Nifedipine ○ Corticosteroids <ul style="list-style-type: none"> - Betamethasone ○ Prophylactic <ul style="list-style-type: none"> - Progesterone 	<p><u>Required Reading:</u></p> <p>Frandsen: pp. 89-125 (Chapter 6 & 7) pp. 868-870</p> <p>McKinney: pp. 256-262, 360-374, 534-547, 666-670</p>

Unit Title: OB Pharmacology and Women’s Health (Cont’d)		
Objectives	Content Outline	Student Activities
<p>B. Identifies nursing considerations when using medications during the intrapartum period.</p> <p>C. Identifies nursing considerations when using medications during the postpartum period.</p> <p>D. Discusses specific patient education needs with various medications.</p> <p>E. Compares and contrasts various beliefs of different ethnic groups relating to childbearing.</p>	<ul style="list-style-type: none"> • Medications used to treat pre-eclampsia. <ul style="list-style-type: none"> ○ Magnesium sulfate ○ Hydralazine ○ Labetalol <p>3. Therapeutic use of medications during intrapartum period.</p> <ul style="list-style-type: none"> • Oxytocin • Carboprost • Methergine • Prostaglandin • Analgesia/Sedation • Regional Anesthesia <p>4. Medications in the postpartum period.</p> <ul style="list-style-type: none"> • Lactation suppressants/stimulants • Pain • Perineal wounds • Bowel function • Hemorrhoids • Immune globulins <ul style="list-style-type: none"> - Rhogam • Newborns <ul style="list-style-type: none"> - Vitamin K - Erythromycin ophthalmic ointment 	

Unit Title: Drugs Used to Treat Infection: Antiviral, Antifungal, Antiparasitic, and Antiprotozoal		
Objectives	Content Outline	Student Activities
<p>A. Discusses the nursing process and the nursing implications of selected drugs used to treat viral infections, parasites, and protozoas.</p> <p>1. Identifies the following categories for all anti-infectives medications:</p> <ul style="list-style-type: none"> 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 	<p>A. Applying the nursing process to selected anti-infective drugs.</p> <ol style="list-style-type: none"> 1. Antiviral drugs <ul style="list-style-type: none"> Acyclovir Valacyclovir Amantadine Rimantadine Oseltamivir 2. Antifungal drugs <ul style="list-style-type: none"> Amphotericin Fluconazole Nystatin 3. Antiparasitic drugs <ul style="list-style-type: none"> Amebicides Antimalarial agents Anthelmintic Metronidazole Scabicides and pediculicides 	<p><u>Required Readings:</u></p> <p>Frandsen: pp. 426-439 pp. 459-478 pp. 480-494</p> <p>McKinney: pp. 925, 1181-1183</p> <p><u>Adaptive Learning assignment:</u></p> <p><u>Discussion Topics:</u></p> <p>Discuss the various types of drugs used for:</p> <ul style="list-style-type: none"> Herpes infections Malaria Influenza A Helminthiasis Scabies infestation <p>Discuss the common treatment of parasitic infections in school age children.</p>

Unit Title: Drugs Affecting the Immune System: Biologic Response Modifiers		
Objectives	Content Outline	Student Activities
<p>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.</p> <ol style="list-style-type: none"> 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 sargramostim (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. 	<p>A. Terminology: Definitions of: biologic response modifiers, hematinic, hematopoiesis, granulocyte, colony stimulating factor, thrombocytopenia, anemia, neutropenia</p> <p>B. Overview of the hematopoietic and immune stimulating drugs</p> <ul style="list-style-type: none"> • Erythropoiesis Stimulating Agents • Granulocyte Colony Stimulating Factor • Granulocyte-Macrophage (GM-CSF) • Interferons • Interleukins <p>C. Characteristics of hematopoietic and immunostimulant drugs</p> <ul style="list-style-type: none"> • Goals and methods of enhancing hematopoietic and immune functions. • Adverse effects of drugs. <p>D. Management of patients receiving hematopoietic and immune system drugs</p> <ul style="list-style-type: none"> • Nursing Process implication in drug administration: <ul style="list-style-type: none"> - Assessment - Nursing diagnoses - Planning/Goals - Interventions - Evaluation 	<p><u>Required Readings:</u></p> <p>Frandsen: pp. 191-206</p> <p>Monoclonal Antibodies pp: 236-238</p>

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) <ul style="list-style-type: none"> • Inpatient versus outpatient drug administration • Lab monitoring: CBC • Use in patients with cancer • Existing renal or hepatic impairment F. Sociocultural consideration <ul style="list-style-type: none"> • Ethical: Appropriateness of epoetin administration in Jehovah's Witness client 	

Unit Title: Drugs Affecting The Gastrointestinal System		
Objectives	Content Outline	Student Activities
<p>A. Utilizes assessment skills and the nursing process to ensure safe and appropriate medication administration.</p> <p>1. Discusses the various drugs used to treat common gastrointestinal problems.</p> <ul style="list-style-type: none"> • Anti-emetics – Emetics • Anti-diarrheal • Laxatives • Anti-ulcer • Anti-hemorrhoidal <p>2. Identifies the following characteristics and nursing implications of gastrointestinal drugs:</p> <ul style="list-style-type: none"> • 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 <p>3. Discusses monitoring of drug effectiveness.</p>	<p>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.</p> <p>1. Review the digestive system (alimentary canal) and its function.</p> <p>2. Antiemetics: antihistamines, anticholinergics, dopamine antagonists, and serotonin antagonists.</p> <ul style="list-style-type: none"> • Meclizine (Antivert) • Scopolamine (Transderm-Scop) • Phenothiazines: <ul style="list-style-type: none"> ○ prochlorperazine (Compro) ○ chlorpromazine (Thorazine) • Antihistamine: <ul style="list-style-type: none"> ○ Hydroxyzine (Vistaril) ○ promethazine (Phenergan) • 5-HT₃ receptor antagonists: <ul style="list-style-type: none"> ○ ondansetron (Zofran) ○ dolasetron (Anzemet) <p>3. Emetics/adsorbents</p> <ul style="list-style-type: none"> • Activated charcoal • Syrup of ipecac 	<p><u>Required Reading:</u></p> <p>Frandsen: Chapter 2 pp. 28-29</p> <p>Chapter 37-40 pp. 726-782</p> <p><u>Adaptive Learning Assignment:</u></p> <p>Course Point +Prep U</p> <p>Chapter 38-Drug Therapy for Nausea and Vomiting</p> <p>Chapter 39-Drug Therapy for Constipation and Elimination Problems</p> <p>Due by 9/16/20 @ midnight</p>

Unit Title: Drugs Affecting The Gastrointestinal System (Cont'd)		
Objectives	Content Outline	Student Activities
<p>4. Considers effects of gastrointestinal drugs on the following:</p> <ul style="list-style-type: none"> • Pediatric patients • Elderly patients • Renal impaired patients • Hepatic impaired patients • Critically ill patients • Pregnant patients <p>B. Identifies educational needs of the family and the individual receiving gastrointestinal medication.</p> <ol style="list-style-type: none"> 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. <p>C. Demonstrates legal/ethical behaviors that indicate accountability in the administration of medication.</p> <p>D. Identifies sociocultural variables of individuals with common health problems in relation to various medications.</p> <p>E. Identifies nonpharmacologic management.</p>	<p>4. Anti-diarrheals</p> <ul style="list-style-type: none"> • Opiates and opiate related agents: <ul style="list-style-type: none"> ○ diphenoxylate with atropine sulfate (Lomotil) ○ loperamide (Imodium, Kaopectate II) • Absorbents: <ul style="list-style-type: none"> ○ bismuth subsalicylate (Pepto-Bismol, Kaopectate) • Somatostatin analog: <ul style="list-style-type: none"> ○ octreotide acetate (Sandostatin) • Antibacterial agents • Miscellaneous <p>5. Laxatives and cathartics</p> <ul style="list-style-type: none"> • Osmotics (saline): <ul style="list-style-type: none"> ○ Mg citrate solution ○ polyethylene glycol (MiraLax) ○ Mg hydroxide (MOM) ○ sodium phosphate (Fleets enema) ○ lactulose • Stimulants: <ul style="list-style-type: none"> ○ senna (Senokot) ○ bisacodyl (Dulcolax, Correctol) • Lubricant: <ul style="list-style-type: none"> ○ mineral oil 	

Unit Title: Drugs Affecting The Gastrointestinal System (Cont'd)		
Objectives	Content Outline	Student Activities
	<ul style="list-style-type: none"> • Bulk-forming <ul style="list-style-type: none"> ○ psyllium (Metamucil) ○ polycarbophil (FiberCon) ○ methylcellulose (Citrucel) • Stool softeners: <ul style="list-style-type: none"> ○ docusate sodium (Colace) <p>6. Anti-ulcer drugs</p> <ul style="list-style-type: none"> • Antacids: <ul style="list-style-type: none"> ○ aluminum hydroxide, (Amphojel) ○ magnesium hydroxide (MOM) ○ combination (Mylanta, Maalox) ○ calcium carbonate (Tums) • H2 receptor antagonists: <ul style="list-style-type: none"> ○ famotidine (Pepcid) ○ cimetidine (Tagamet) ○ nizatidine (Axid) • Proton pump inhibitors: <ul style="list-style-type: none"> ○ omeprazole (Prilosec) ○ esomeprazole (Nexium) ○ lansoprazole (Prevacid) ○ pantoprazole (Protonix) ○ rabeprazole (Aciphex) ○ combinations (Prevpac) • Prostaglandin analog: <ul style="list-style-type: none"> ○ misoprostol (Cytotec) • Pepsin inhibitor: <ul style="list-style-type: none"> ○ sucralfate (Carafate) <p>7. Acupuncture, acupressure, and herbal supplements</p>	

Unit Title: Drugs Used in the Treatment of Infection: Antimicrobial		
Objectives	Content Outline	Student Activities
<p>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.</p> <ol style="list-style-type: none"> 1. States the meaning of the term antibacterial/antimicrobial. 2. Describes the general characteristics of selected antimicrobial drugs in terms of: <ul style="list-style-type: none"> • 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. 	<p>A. Definition of antimicrobial as a drug category</p> <ul style="list-style-type: none"> • General characteristics of antimicrobial drugs <p>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</p> <ul style="list-style-type: none"> • Penicillins • Cephalosporins • Aminoglycosides • Fluoroquinolones • Tetracyclines • Sulfonamides • Macrolides • Miscellaneous anti-infective agents <p>C. Identification of common side effects for each antimicrobial category:</p> <ul style="list-style-type: none"> • Drug monitoring for each category <ul style="list-style-type: none"> - Peak and trough testing - Pertinent lab tests - Physical assessment findings 	<p><u>Required Reading:</u></p> <p>Frandsen: pp. 349-406</p> <p>Course Point +Prep U Chapter 18: Drug therapy with beta-lactam & antibacterial agents</p> <p>Chapter 19: Drug therapy with aminoglycosides & fluoroquinolones</p> <p>Due by 9/23/20 @ midnight</p>

Unit Title: Drugs Used in the Treatment of Infection: Antimicrobial (Cont'd)		
Objectives	Content Outline	Student Activities
<p>8. States appropriate nursing implications for a client receiving antimicrobial drugs.</p> <p>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.</p> <p>B. Discusses the legal/ethical implications of drug administration for individuals with common health problems in relation to antimicrobials.</p> <p>1. Discusses the steps the nurse should take to inform the health care team regarding a client's medication allergies.</p> <p>2. States how the nurse could recognize clients who have or are at risk for renal or hepatic impairment prior to drug administration.</p> <p>3. Recognizes drugs with known side effects such as nephrotoxicity or ototoxicity, or others that may place a client at risk.</p>	<p>D. Foods and drugs that interfere with the absorption of specific antimicrobial drugs</p> <p>E. Nursing process use in antimicrobial therapy</p> <ul style="list-style-type: none"> • Assessment • Nursing diagnoses • Planning/goals • Interventions • Evaluation <p>F. Drug reactions</p> <ul style="list-style-type: none"> • Close monitoring of clients for: <ul style="list-style-type: none"> - Drug allergies - Therapeutic and/or side effects • Prompt documentation and reporting of: <ul style="list-style-type: none"> - Drug reactions/side effects 	