



**VNSG 1231
Pharmacology
Spring 2023
Monday and Wednesday
0800 – 1025
STEAM 237**

Instructor Information:

Facilitator - Jalayne Henderson, MSN, RN

Second instructor – Lauren McElyea, MSN, RN

Student hours and location: Steam 237 Monday and Wednesday 0800-1025

Required Textbook/Materials: VNSG 1231 Spring 2023 Book-Organized: Sherpath for Visovsky Introduction to Clinical Pharmacology, 10th Edition

**By Elsevier
ISBN: 9780323873659**

Course ID: 165519_dbauer65_1001

Course Description: This course is the study of fundamentals of medications and their diagnostic, therapeutic and curative effect. Includes nursing interventions utilizing the nursing process. Prerequisites: VNSG 2331 and VNSG 1260 with a grade of "C" or better. LECTURE 2, LAB 2. (12 weeks, 48 hours)

Course requirements:

1. **Unit exams:** Assess knowledge and understanding of incremental course content. Exams will use multiple choice, multiple answer, and alternative style test questions as indicated to follow NCLEX-RN testing format. If a student receives a grade below 75% on any exam, the student should schedule a counseling appointment with the instructor for remediation.
2. **Comprehensive HESI final exam:** Assesses overall knowledge and understanding of complete course content. The exam will use multiple choice, multiple answer, and alternative style test questions as indicated to follow NCLEX-RN testing format.
3. **EAQ Quizzes/Assignments:** Assess knowledge and understanding of weekly course content. There will be 4 EAQ quizzes. EAQ Quizzes or any other assignments turned in after the due date will receive a zero.

Determination of Course Grade/Detailed Grading Formula: (methods of evaluation to be employed to include a variety of means to evaluate student performance)

Late Work, Make-Up, and Extra-Credit Policy:

Attendance Policy:

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means. (Faculty may add additional statement requiring monitoring and communication expectations via Blackboard or other LMS)

Student Learner Outcome	Maps to Core Objective	Assessed via this Assignment
1.		
2.		
3.		
4.		
5.		

Academic Dishonesty: (Describe your academic dishonesty policy and state consequences if it is violated)

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact [insert name and title of direct supervisor] at [phone number/email address].

Course outline: (include calendar with lecture topics, due dates)

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. <https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor’s professional judgment of the quality of the student’s work and performance is also not an admissible basis for a grade appeal.* https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement:

Any student with a documented disability needing academic accommodation is requested to contact Kimberly Lachney at 409-933-8919 or klachney@com.edu. The Office of Services for Students with Disabilities is in the Student Success Center.

Counseling Statement: Any student needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or hbankston@com.edu. Counseling services are available on campus in the student center for free and students can also email counseling@com.edu to set up their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a “W” grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law.

F_N Grading: The F_N grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The F_N grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the F_N grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an F_N grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress:

If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.

Faculty Office Hours and Locations:

All nursing faculty members post office hours outside their doors, and under the content tab in D2L. Appointments should be made via email.

Make-Up Policy/Late Assignments:

All course assignments are expected to be completed and submitted on the specified due date. See Late Assignments Policy in the Nursing Student Handbook.

Grading Scale

A = 90 - 100.00

B = 80 - 89.99

C = 75 - 79.99*

D = 60 - 74.99

F = < 60

*A final grade of “C” or higher is required to pass this course.

Grade Calculation:

All assignments, including pass/fail, must be submitted to pass the course. The exam average must be at least 75% before non-examination assignment grades are calculated into the final course grade. See Grade Determination & Calculation in the Nursing Student Handbook.

Computation of
Grades

%

6 Quizzes** 30

Exam 1* 20

Exam 2* 20

Exam 3* 20

Final * 10

Total 100%

* $\geq 75\%$ exam average required to pass the
course

**Weighted assignments calculated only after
75% exam average met

UNIT 1

Chapter 1 - Pharmacology and the Nursing Process in LPN Practice

Learning Outcomes

1. Explain how licensed practical or vocational nurses (LPNs/VNs) use the nursing process in practicing safe drug administration.
2. Discuss the differences between subjective and objective data related to drug administration.
3. Describe the specific actions involved in using the nursing process to safely give drugs.
4. List specific nursing activities related to assessing, planning, implementing, and evaluating the patient's response to drugs.
5. Compare the steps of the Nursing Process to the skills for the Clinical Judgment Model.
6. Describe each of the 9 Rights of Drug Administration as essential components of safe drug administration.

Learning Content

- I. The LPN/VN'S Role and The Nursing Process
 - A. Assessment
 - B. Planning
 - C. Implementation
 - D. Evaluation
- II. Introducing The Clinical Judgement Mo

Learning Activities

Readings from required and recommended texts.

Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

UNIT 1 (Cont.)

Chapter 2- Legal, Regulatory, and Ethical Aspects of Drug Administration

Learning Outcomes

1. Describe the legal, regulatory, and ethical responsibilities of a nurse for drug administration.
2. Explain the meaning of controlled substances (scheduled drugs) and why drugs are placed in this category.
3. Describe the legal responsibilities for managing controlled substances.
4. List the information required for a legal drug order or prescription.
5. Describe the four different types of drug orders.
6. List what you need to do if you make a drug error.

Learning Content

- I. Regulation Of Drug Administration
 - A. Federal Laws
 - B. Controlled Substances
 - C. Prescription Drugs
 - D. Over-The-Counter Drugs
 - E. Canadian Drug Legislation
- I. The Drug Order
 - A. Legal Prescriptions
 - B. Types Of Drug Orders
 - C. State Law and Healthcare Agency Policies
- II. Drug Administration Systems
 - A. Kardex and Electronic Drug Systems
- III. Drug Errors
 - A. High-Alert Drugs
 - B. Black Box Designation
 - C. Medication Reconciliation
- IV. Protection Of Healthcare Workers

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Chapter 3

Principles of Pharmacology

Learning Outcomes

1. Define the keywords used in pharmacology and drug administration.
2. Explain the differences between the chemical, generic, and brand names of drugs.
3. Compare the drug actions of agonists, partial agonists, and antagonists.
4. Describe the four basic physiologic processes that affect drug actions in the body.
5. Explain the differences between side effects and adverse effects.
6. Discuss personal factors that influence drug therapy.
7. Describe how drugs affect persons at different lifespan stages.

Learning Content

- I. Drug Names
- II. Drug Attachment
- III. Basic Drug Processes
 - A. Absorption
 - B. Distribution
 - C. Metabolism
 - D. Excretion Or Elimination
- IV. Drug Actions
 - A. Bioequivalence
 - B. Drug Interactions
- V. Drug Therapy and Special Populations
 - A. Pediatric Drug Therapy Considerations
 - B. Older Adult Therapy Considerations
 - C. Patient Teaching Considerations
 - D. Drug Therapy Considerations During Pregnancy and Lactation
- VI. Drug Cards

Learning Activities

- Readings from required and recommended texts
- Case study reviews
- Critical thinking activities
- Lecture/Discussion
- Clinical Reasoning Questions/CAI Assignments to be specified by faculty

Chapter 4

Drug Calculations: Preparing and Giving Drugs

Learning Outcomes

1. Apply the appropriate formula to accurately calculate drug dosages.
2. Select the correct equipment to prepare and give parenteral drugs, including insulin.
3. Explain the different types of parenteral drug delivery.
4. Identify anatomic landmarks used for giving parenteral drugs.
5. Apply the correct formula for calculating intravenous flow rates for infusions.
6. Correctly apply Clark's rule used to accurately calculate drug dosages for children.
7. Explain the principles and procedures to safely and accurately give drugs by the enteral, parenteral, and percutaneous routes.

Learning Content

- I. Calculating Drug Dosages
 - A. Fraction Method
 - B. Ratio and Proportion Method
 - C. Dimensional Analysis Method Adverse
 - D. Drug Calculations Using Units
 - E. Calculating Drug Dosages for Infants And Children

- II. Calculations For intravenous Infusions
 - A. Calculating Intravenous Flow Rate
 - B. Calculating Total Intravenous Infusion Time
 - C. Factors That influence Intravenous Flow
 - D. Flow Rates for Infants and Children
- III. General Principles of Drug Administration
- IV. Enteral Drugs
 - A. Giving Oral Drugs
 - B. Giving Oral Tablets or Capsules
 - C. Giving Liquid-Form Oral Drugs
- V. Giving Drugs by Nasogastric or Percutaneous Endoscopic Gastrostomy Tube
 - A. Patients Who Are Receiving Enteral Feedings
 - B. Patients With Nasogastric Tube to Suction
- VI. Parenteral Drugs
 - A. General Principles
 - B. Syringes
 - C. Needles
 - D. Procedure For Preparing and Giving Parental Drugs
 - E. Preparation Of Parenteral Drugs
 - F. Ampules
 - G. Mix-O-Vials
 - H. Multiple-Dose Vials
 - I. Mixing Two Parenteral Drugs
 - J. Prefilled Syringes or Cartridges
 - K. Giving Intradermal Drugs

- L. Giving Subcutaneous Drugs
- M. Giving Intramuscular Drugs
- N. Giving Intravenous Drugs
- VII. Percutaneous Drugs
 - A. Giving Topical and Transdermal Drugs
 - B. Giving Drugs Through Mucous Membrane

Learning Activities

Readings from required and recommended texts.

Case study reviews

Critical thinking activities. Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Unit 3

Chapter 5 – Drugs for Bacterial Infections

Learning Outcomes

1. Explain how infections, pathogens, drug spectrum, drug resistance, and drug generation affect antibiotic drug therapy.
2. List the names, actions, possible side effects, and adverse effects of the penicillins and cephalosporins.
3. Explain what to teach patients and families about penicillins and cephalosporins.
4. List the names, actions, possible side effects, and adverse effects of the common tetracyclines, macrolides, and aminoglycosides.
5. Explain what to teach patients and families about tetracyclines, macrolides, and aminoglycosides.
6. List the names, actions, possible side effects, and adverse effects of the common sulfonamides and fluoroquinolones.
7. Explain what to teach patients and families about sulfonamides and fluoroquinolones.

Learning Content

- I. INFECTION
 - A. NORMAL FLORA
 - B. PATHOGENS
 - C. DETERMINATION OF INFECTION
 - D. ANTI-INFECTIVES
 - E. DRUG SUSCEPTIBILITY AND RESISTANCE
 - F. GENERAL CONSIDERATIONS FOR ANTI-INFECTIVE (ANTIMICROBIAL) DRUG THERAPY
- II. ANTIBIOTICS
 - A. PENICILLINS
 - B. CEPHALOSPORINS
 - C. OTHER CELL WALL SYNTHESIS INHIBITORS
 - D. TETRACYCLINES
 - E. MACROLIDES
 - F. AMINOGLYCOSIDES
 - G. MISCELLANEOUS PROTEIN SYNTHESIS INHIBITORS
 - H. SULFONAMIDES
 - I. FLUOROQUINOLONES

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Unit 3 (Cont.)

Chapter 6 - Drugs for Tuberculosis, Fungal, and Parasitic Infections

Learner Outcomes

1. List the names, actions, possible side effects, and adverse effects of first-line antitubercular drugs.
2. List the names, actions, possible side effects, and adverse effects of antifungal drugs.
3. List the names, actions, possible side effects, and adverse effects of antiparasitic drugs.

Learning Content

- I. TUBERCULOSIS
 - A. ANTITUBERCULAR DRUGS
- II. FUNGAL INFECTIONS
 - A. ANTIFUNGAL DRUGS
- III. PARASITIC INFECTIONS
 - A. PROTOZOA
 - B. ANTIPROTOZOAL DRUGS
 - C. HELMINTHS
 - D. ANTHELMINTIC DRUGS
 - E. ECTOPARASITES

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Chapter 12 - Drugs for Pain Management

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of opioid agonists.
2. Explain what to teach patients and families about opioid agonists.
3. List the names, actions, possible side effects, and adverse effects of opioid agonist-antagonists.
4. Explain what to teach patients and families about opioid agonist-antagonists.
5. List the names, actions, possible side effects, and adverse effects of nonopioid centrally acting analgesics.
6. Explain what to teach patients and families about nonopioid centrally acting analgesics.
7. List five common types of miscellaneous drugs used to help manage pain and the types of pain they most commonly relieve.

Learning Content

- I. PAIN
 - A. HOW PAIN IS PERCEIVED
 - B. PRINCIPLES OF PAIN MANAGEMENT Bronchodilators
- II. ANALGESIC DRUGS FOR PAIN MANAGEMENT
 - A. OPIOID AGONIST ANALGESICS
 - B. OPIOID AGONIST-ANTAGONIST ANALGESICS
 - C. NONOPIOID CENTRALLY ACTING ANALGESICS
 - D. ACETAMINOPHEN
- III. MISCELLANEOUS DRUGS FOR PAIN MANAGEMENT
 - A. CORTICOSTEROIDS
 - B. NONSTEROIDAL ANTI-INFLAMMATORY DRUGS
 - C. SKELETAL MUSCLE RELAXANTS
 - D. ANTIDEPRESSANTS
 - E. ANTICONVULSANTS

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Chapter 14 - Drugs for Gastrointestinal Problems

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of antiemetics and promotility drugs.
2. Explain what to teach patients and families about antiemetics and promotility drugs.
3. List the names, actions, possible side effects, and adverse effects of antacids and histamine H2 receptor blockers.
4. Explain what to teach patients and families about antacids and histamine H2 receptor blockers.
5. List the names, actions, possible side effects, and adverse effects of proton-pump inhibitors and cytoprotective drugs.
6. Explain what to teach patients and families about proton-pump inhibitors and cytoprotective drugs.
7. List the names, actions, possible side effects, and adverse effects of laxatives and antidiarrheals.
8. Explain what to teach patients and families about laxatives and antidiarrheals.

Learning Content

- I. THE DIGESTIVE SYSTEM
 - A. ANTIEMETIC DRUGS
 - B. SEROTONIN (5-HT₃) RECEPTOR ANTAGONISTS
 - C. SUBSTANCE P/NEUROKININ 1 RECEPTOR ANTAGONISTS
 - D. CANNABINOIDS
 - E. PHENOTHIAZINES
 - F. PROMOTILITY DRUGS
- II. DRUGS FOR PEPTIC ULCER DISEASE AND GASTROESOPHAGEAL REFLUX DISEASE
 - A. ANTACIDS
 - B. HISTAMINE H₂-RECEPTOR BLOCKER
 - C. PROTON-PUMP INHIBITORS
 - D. CYTOPROTECTIVE DRUGS
- III. DRUGS FOR CONSTIPATION AND DIARRHEA
 - A. DRUGS FOR CONSTIPATION
 - B. DRUGS FOR DIARRHEA

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Chapter 16 - Drugs for Immunization and Immunomodulation

Learning Outcomes

1. Explain the differences between innate immunity and acquired immunity.
2. Describe the role of antibodies in providing true immunity.
3. Explain how vaccination affects acquired immunity.
4. Describe the recommended vaccination schedules for children, adults, and older adults.
5. List issues for vaccination during pregnancy.
6. List the names, actions, possible side effects, and adverse effects of selective immunomodulating suppressant drugs (immunosuppressants).
7. Explain what to teach patients and families about selective immunomodulating suppressant drugs (immunosuppressants).

Learning Content

- I. OVERVIEW OF IMMUNITY
 - A. INNATE IMMUNITY
 - B. ACQUIRED IMMUNITY
- II. VACCINATION
 - A. VACCINE USE
- III. IMMUNOMODULATING THERAPY
 - A. SELECTIVE IMMUNOSUPPRESSANTS FOR AUTOIMMUNE DISEASES
 - B. SELECTIVE IMMUNOSUPPRESSANTS TO PREVENT TRANSPLANT REJECTION

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.
- Critical thinking activities.
- Lecture/Discussion
- Clinical Reasoning Questions
- CAI Assignments to be specified by faculty

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of drugs for osteoporosis.
2. Explain what to teach patients and families about drugs for osteoporosis.
3. Explain the role of hormone replacement therapy for general health and endocrine problems.
4. List the names, actions, possible side effects, and adverse effects of drugs for thyroid problems.
5. Explain what to teach patients and families about drugs for thyroid problems.
6. List the names, actions, possible side effects, and adverse effects of drugs for adrenal gland problems.
7. Explain what to teach patients and families about drugs for adrenal gland problems.
8. List the names, actions, possible side effects, and adverse effects of drugs for sex hormone replacement and contraception.
9. Explain what to teach patients and families about drugs for sex hormone replacement and contraception.

Learning Content

- I. DRUGS FOR OSTEOPOROSIS
 - A. BISPHOSPHONATES
 - B. ESTROGEN AGONISTS/ANTAGONISTS
 - C. OSTEOCLAST MONOCLONAL ANTIBODIES
 - D. SCLEROSTIN INHIBITORS
 - E. TERIPARATIDE
 - F. CALCIUM AND VITAMIN D
- III. OVERVIEW OF THE ENDOCRINE SYSTEM
- IV. DRUGS FOR THYROID PROBLEMS
 - A. HYPOTHYROIDISM
 - B. THYROID HORMONE AGONISTS
 - C. HYPERTHYROIDISM
 - D. ANTITHYROID DRUGS
- V. DRUGS FOR ADRENAL GLAND PROBLEMS
 - A. ADRENAL GLAND HYPOFUNCTION
 - B. ADRENAL GLAND HYPERFUNCTION
- VI. FEMALE SEX HORMONES
 - A. Actions and Uses OVERVIEW
 - B. MENOPAUSE
 - C. DRUGS FOR MENOPAUSE RELIEF
 - D. DRUGS FOR HORMONAL CONTRACEPTION
 - E. Adverse Reactions
 - F. Contraindications and Precautions
 - G. Interactions
- VII. MALE SEX HORMONES
 - A. OVERVIEW
 - B. ANDROGENS

Learning Activities

- Readings from required and recommended texts.
- Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 7 - Drugs for Viral and Retroviral Infections

Learning Outcomes

1. Describe the pathophysiology of viruses and retroviruses and how they cause infections.
2. List the names, actions, possible side effects, and adverse effects of common antiviral drugs for herpes simplex and influenza infections.
3. Explain what to teach patients and families about the common antiviral drugs for herpes simplex and influenza infections.
4. List the names, actions, possible side effects, and adverse effects of antiviral drugs for cytomegalovirus and respiratory syncytial virus infections.
5. Explain what to teach patients and families about antiviral drugs for cytomegalovirus and respiratory syncytial virus infections.
6. List the names, actions, possible side effects, and adverse effects of antiviral drugs for hepatitis B and C.
7. Explain what to teach patients and families about antiviral drugs for hepatitis B and C.
8. List the names, actions, possible side effects, and adverse effects of the common reverse transcriptase inhibitors and protease inhibitors.
9. Explain what to teach patients and families about reverse transcriptase inhibitors and protease inhibitors.
10. List the names, actions, possible side effects, and adverse effects of the common entry inhibitors, fusion inhibitors, and integrase inhibitors.
11. Explain what to teach patients and families about entry inhibitors, fusion inhibitors, and integrase inhibitors.

Learning Content

- I. VIRUS
- II. ANTIVIRALS
 - A. ANTIVIRAL DRUGS FOR HERPES SIMPLEX VIRUS INFECTIONS
 - B. ANTIVIRAL DRUGS FOR INFLUENZA
 - C. ANTIVIRAL DRUGS FOR CYTOMEGALOVIRUS AND RESPIRATORY SYNCYTIAL VIRUS
 - D. ANTIVIRAL DRUGS FOR HEPATITIS B AND HEPATITIS C VIRUSES
 - E. EXPECTED SIDE EFFECTS, ADVERSE REACTIONS, AND DRUG INTERACTIONS WITH ANTIVIRALS
 - F. NURSING IMPLICATIONS AND PATIENT TEACHING FOR ANTIVIRALS
- III. COVID-19
- IV. RETROVIRUSES
- V. ANTIRETROVIRALS
 - A. ACTIONS OF DRUGS USED FOR ANTIRETROVIRAL THERAPY
 - B. EXPECTED SIDE EFFECTS, ADVERSE REACTIONS, AND PRE-EXPOSURE PROPHYLAXIS WITH ANTIRETROVIRALS
 - C. NURSING IMPLICATIONS AND PATIENT TEACHING FOR ANTIRETROVIRALS

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 8 - Drugs for Allergy and Respiratory Problems

Learning Outcomes

1. Describe the causes and symptoms of allergy, asthma, and chronic obstructive pulmonary disease.
2. List the names, actions, possible side effects, and adverse effects of antihistamines, leukotriene inhibitors, and decongestant drugs.
3. Explain what to teach patients and families about antihistamines, leukotriene inhibitors, and decongestant drugs.
4. List the names, actions, possible side effects, and adverse effects of beta-adrenergic agonists and anticholinergic antagonists for asthma and chronic obstructive pulmonary disease.
5. Explain what to teach patients and families about beta-adrenergic agonists and anticholinergic antagonists for asthma and chronic obstructive pulmonary disease.
6. Explain what to teach patients for correct use of drugs delivered by aerosol inhalers and dry-powder inhalers.
7. Explain how asthma controller (prevention) drugs are different from asthma reliever (rescue) drugs.
8. List the names, actions, possible side effects, and adverse effects of mucolytic and antitussive drugs.
9. Explain what to teach patients and families about mucolytic and antitussive drugs.

Learning Content

- I. ALLERGY
- II. DRUG THERAPY FOR ALLERGY
 - A. ANTIHISTAMINES
 - B. LEUKOTRIENE INHIBITORS
 - C. MAST CELL STABILIZERS (CROMONES)
 - D. DECONGESTANTS
- III. ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE
 - A. ASTHMA
 - B. CHRONIC OBSTRUCTIVE PULMONARY DISEASE DRUG THERAPY FOR ALLERGY
- IV. DRUG THERAPY FOR ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE
 - A. BRONCHODILATORS
 - B. ANTI-INFLAMMATORY DRUGS
- V. MUCOLYTICS AND ANTITUSSIVES
 - A. MUCOLYTICS
 - B. ANTITUSSIVES

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 15 - Drugs Affecting the Hematologic System

Learning Outcomes

1. Describe the clotting mechanism in the human body.
2. Explain the difference between anticoagulant drugs and fibrinolytic drugs.
3. List the names, actions, possible side effects, and adverse effects of common platelet inhibitors.
4. Explain what to teach patients and families about platelet inhibitors.
5. List the names, actions, possible side effects, and adverse effects of common direct thrombin inhibitors.
6. Explain what to teach patients and families about direct thrombin inhibitors.
7. List the names, actions, possible side effects, and adverse effects of common indirect thrombin inhibitors.
8. Explain what to teach patients and families about indirect thrombin inhibitors.
9. List the names, actions, possible side effects, and adverse effects of vitamin K antagonists.
10. Explain what to teach patients and families about vitamin K antagonists.
11. List the names, actions, possible side effects, and adverse effects of fibrinolytic drugs.
12. Explain what to teach patients and families about fibrinolytic drugs.
13. List the names, actions, possible side effects, and adverse effects of erythropoiesis-stimulating agents.
14. Explain what to teach patients and families about erythropoiesis-stimulating agents.
15. List the names, actions, possible side effects, and adverse effects of various iron preparations.
16. Explain what to teach patients and families about drugs for iron replacement.

Learning Content

- I. BLOOD CLOTTING
- II. ANTICOAGULANTS
 - A. PLATELET INHIBITORS
 - B. DIRECT THROMBIN INHIBITORS
 - C. INDIRECT THROMBIN INHIBITORS
 - D. VITAMIN K ANTAGONISTS
 - E. FIBRINOLYTIC DRUGS
 - F. ERYTHROPOIESIS-STIMULATING AGENT
- III. DRUGS FOR IRON DEFICIENCY ANEMIA
 - A. FERROUS SULFATE
 - B. IRON DEXTRAN

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 13 - Drugs for Inflammation, Arthritis, and Gout

Learning Outcomes

1. List the names, actions, and possible adverse effects of nonsteroidal anti-inflammatory drugs (NSAIDs).
2. Explain what to teach patients and families about NSAIDs.
3. List the names, actions, and possible adverse effects of corticosteroid-based anti-inflammatory drugs.
4. Explain what to teach patients and families about corticosteroid-based anti-inflammatory drugs.
5. List the names, actions, and possible adverse effects of disease-modifying antirheumatic drugs (DMARDs) for management of arthritis and other inflammatory disorders.
6. Explain what to teach patients and families about DMARDs for management of arthritis and other inflammatory disorders.
7. List the names, actions, and possible adverse effects of antigout drugs.
8. Explain what to teach patients and families about antigout drugs.

Learning Content

- I. INFLAMMATION CAUSES AND ACTION
- IV. INFLAMMATION MANAGEMENT
 - A. NONSTEROIDAL ANTI-INFLAMMATORY DRUGS
 - B. CORTICOSTEROIDS
 - C. DISEASE-MODIFYING ANTIRHEUMATIC DRUGS
 - 1.
- III. GOUT
 - 1. MANAGEMENT OF INFLAMMATION AND GOUT PAIN
 - 2. ANTIGOUT DRUGS

Learning Activities

Readings from required and recommended texts. Case study reviews.
Critical thinking activities.
Lecture/Discussion
Clinical Reasoning Questions
CAI Assignments to be specified by faculty

Chapter 20 - Over-the-Counter Drug Therapy

Learning Outcomes

1. Explain what to teach patients and families about over-the-counter drugs.
2. List side effects and precautions needed for herbal preparations and those used for complementary and alternative medicine.
3. List the actions, side effects, and precautions to take when giving the vitamins most commonly prescribed for supplementation.
4. Explain what to teach patients and families about supplemental vitamins.
5. List the actions, side effects, and precautions to take when giving the minerals most commonly prescribed for supplementation.
6. Explain what to teach patients and families about supplemental minerals.

Learning Content

- I. DOCUMENTING PATIENT HEALTHCARE PRACTICES
- II. OVER-THE-COUNTER DRUGS
 - A. PRODUCT LABELING
 - B. PATIENT TEACHING
- III. HERBAL PRODUCTS AND COMPLEMENTARY AND ALTERNATIVE MEDICINE
 - A. PRODUCT LABELING
 - B. PROS AND CONS
- IV. CANNABIS HERBAL PRODUCTS AND COMPLEMENTARY AND ALTERNATIVE MEDICINE
 - A. PRODUCT LABELING
 - B. PROS AND CONS
 - C. CANNABIS
- V. VITAMINS
 - A. VITAMIN A
 - B. VITAMIN B1 (THIAMINE)
 - C. VITAMIN B2 (RIBOFLAVIN)
 - D. NIACIN (VITAMIN B3)
 - E. VITAMIN B6 (PYRIDOXINE)
 - F. FOLIC ACID (VITAMIN B9)
 - G. VITAMIN B12 (CYANOCOBALAMIN)
 - H. Vitamin C (Ascorbic Acid)
 - I. VITAMIN D
 - J. VITAMIN E
 - K. VITAMIN K

- VI. MINERALS
 - A. CALCIUM
 - B. Iron
 - C. MAGNESIUM
 - D. POTASSIUM
 - E. ZINC

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 19 - Drugs for Eye and Ear Problems

Learning Outcomes

1. Explain what types of drugs are used topically to manage ear problems.
2. Describe the proper technique to give drugs to the ear.
3. Explain what types of drugs are used topically to manage eye problems.
4. Describe the proper technique to give eye drops and eye ointments.
5. List the names, actions, possible side effects, and adverse effects of drugs for glaucoma.
6. Explain what to teach patients and families about the different drug categories used to manage glaucoma.
7. Describe lifespan considerations for drugs to manage glaucoma.

Learning Content

- I. EAR PROBLEMS
 - A. EAR STRUCTURE AND FUNCTION
- II. DRUGS TO MANAGE EAR PROBLEMS
 - EYE PROBLEMS
 - EYE STRUCTURE AND FUNCTION
- III. GLAUCOMA
 - A. PROSTAGLANDIN AGONISTS
 - B. BETA-ADRENERGIC ANTAGONISTS
 - C. ALPHA-ADRENERGIC AGONISTS
 - D. CHOLINERGIC DRUGS
 - E. CARBONIC ANHYDRASE INHIBITORS

Learning Activities

Readings from required and recommended texts. Case study reviews.
Critical thinking activities.
Lecture/Discussion
Clinical Reasoning Questions
CAI Assignments to be specified by faculty

Chapter 9 - Drugs Affecting the Renal/Urinary and Cardiovascular Systems

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of diuretic drugs.
2. Explain what to teach patients and families about diuretic drugs.
3. List the names, actions, possible side effects, and adverse effects of drugs for benign prostatic hyperplasia and overactive bladder.
4. Explain what to teach patients and families about drugs for benign prostatic hyperplasia and overactive bladder.
5. List the names, actions, possible side effects, and adverse effects of drugs for high blood cholesterol and drugs for high blood pressure.
6. Explain what to teach patients and families about drugs for high blood lipid levels and high blood pressure.
7. List the names, actions, possible side effects, and adverse effects of drugs for angina and heart failure.
8. Explain what to teach patients and families about drugs for angina and heart failure.
9. List the names, actions, possible side effects, and adverse effects of drugs for dysrhythmias.
10. Explain what to teach patients and families about drugs for dysrhythmias.

Learning Content

- I. DRUGS THAT AFFECT THE RENAL/URINARY SYSTEM
- II. DIURETICS
- III. DRUGS FOR BENIGN PROSTATIC HYPERPLASIA
BLADDER ANESTHETICS
 - A. DRUGS FOR OVERACTIVE BLADDER
- IV. DRUGS THAT AFFECT THE CARDIOVASCULAR SYSTEM
- V. DRUGS THAT AFFECT THE CARDIOVASCULAR SYSTEM
- VI. ANTIHYPERLIPIDEMICS
 - A. HMG-COA REDUCTASE INHIBITORS (STATINS)
 - B. NONSTATIN ANTIHYPERLIPIDEMIC DRUGS
- VII. ANTIHYPERTENSIVE DRUGS
 - A. ANTIHYPERTENSIVE DRUG ACTIONS
 - B. USES OF ANTIHYPERTENSIVE DRUGS
 - C. EXPECTED SIDE EFFECTS OF ANTIHYPERTENSIVE DRUGS
 - D. ADVERSE REACTIONS OF ANTIHYPERTENSIVE DRUGS
 - E. DRUG INTERACTIONS WITH ANTIHYPERTENSIVES
- VIII. DRUGS USED FOR ANGINA AND MYOCARDIAL INFARCTION
 - A. ANTIANGINALS
 - B. NITRATES
 - C. ANTIDYSRHYTHMICS
 - D. INOTROPIC DRUGS

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty

Chapter 10 - Drugs for Central Nervous System

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of drugs for Parkinson's disease.
2. Explain what to teach patients and families about drugs for Parkinson's disease.
3. List the names, actions, possible side effects, and adverse effects of drugs for Alzheimer's disease.
4. Explain what to teach patients and families about drugs for Alzheimer's disease.
5. List the names, actions, possible side effects, and adverse effects of drugs for epilepsy and other seizure problems.
6. Explain what to teach patients and families about drugs for epilepsy and other seizure problems.
7. List the names, actions, possible side effects, and adverse effects of drugs for multiple sclerosis.
8. Explain what to teach patients and families about drugs for multiple sclerosis.
9. List the names, actions, possible side effects, and adverse effects of drugs for amyotrophic lateral sclerosis and myasthenia gravis.
10. Explain what to teach patients and families about the drugs for amyotrophic lateral sclerosis and myasthenia gravis.

Learning Content

- I. CENTRAL NERVOUS SYSTEM FUNCTIONS
- II. DRUGS FOR PARKINSON'S DISEASE
 - A. DOPAMINE AGONISTS
 - B. CATECHOL-O-METHYLTRANSFERASE INHIBITORS
 - C. MONOAMINE OXIDASE TYPE B INHIBITORS
- III. DRUGS FOR ALZHEIMER'S DISEASE
 - A. CHOLINESTERASE INHIBITORS
 - B. N-METHYL-D-ASPARTATE BLOCKERS
- IV. DRUGS FOR EPILEPSY
 - A. TRADITIONAL ANTIEPILEPTIC DRUGS
 - B. NEWER ANTIEPILEPTIC DRUGS
- V. DRUGS FOR MULTIPLE SCLEROSIS
 - A. NONSPECIFIC ANTI-INFLAMMATORY DRUGS
 - B. SPECIFIC DRUGS FOR MULTIPLE SCLEROSIS
- VI. DRUGS FOR AMYOTROPHIC LATERAL SCLEROSIS
 - A. GLUTAMINE ANTAGONISTS
 - B. ACETYLCHOLINESTERASE INHIBITORS

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

Chapter 11 - Drugs for Mental Health

Learning Outcomes

1. List the names, actions, possible side effects, and adverse effects of drugs for anxiety and sleep.
2. Explain what to teach patients and families about drugs for anxiety and sleep.
3. List the names, actions, possible side effects, and adverse effects of antidepressant drugs and mood stabilizers.
4. Explain what to teach patients and families about antidepressant drugs and mood stabilizers.
5. List the names, actions, possible side effects, and adverse effects of typical and atypical antipsychotic drugs.
6. Explain what to teach patients and families about typical and atypical antipsychotic drugs.

Learning Content

- I. DRUG THERAPY AND MENTAL ILLNESS
- II. DRUGS FOR SLEEP AND ANXIETY
 - A. SEDATIVE-HYPNOTICS
 - B. ANTIANXIETY DRUGS
- III. ANTIDEPRESSANTS AND MOOD STABILIZERS
 - A. ANTIDEPRESSANTS
 - B. SELECTIVE SEROTONIN REUPTAKE INHIBITORS
 - C. SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS
 - D. TRICYCLIC ANTIDEPRESSANTS
 - E. MONOAMINE OXIDASE INHIBITORS
 - F. MOOD STABILIZERS
- IV. ANTIPSYCHOTICS
 - A. TYPICAL ANTIPSYCHOTIC DRUGS
 - B. ATYPICAL ANTIPSYCHOTIC DRUGS

Learning Activities

Readings from required and recommended texts. Case study reviews.
Critical thinking activities.
Lecture/Discussion
Clinical Reasoning Questions
CAI Assignments to be specified by faculty

Chapter 18 - Drug Therapy for Diabetes

Learning Outcomes

1. Describe the differences between diabetes mellitus type 1 and type 2, and explain why most drugs used for type 2 are not useful for diabetes type 1.
2. List the names, actions, possible side effects, and adverse effects of insulin stimulators and biguanides.
3. Explain what to teach patients and families about insulin stimulators and biguanides.
4. List the names, actions, possible side effects, and adverse effects of insulin sensitizers and alpha-glucosidase inhibitors.
5. Explain what to teach patients and families about insulin sensitizers and alpha-glucosidase inhibitors.
6. List the names, actions, possible side effects, and adverse effects of incretin mimetics and amylin analogs.
7. Explain what to teach patients and families about incretin mimetics and amylin analogs.
8. List the names, actions, possible side effects, and adverse effects of DPP-4 inhibitors and sodium-glucose cotransport inhibitors.
9. Explain what to teach patients and families about DPP-4 inhibitors and sodium-glucose cotransport inhibitors.
10. List the names, actions, possible side effects, and adverse effects of insulin preparations.
 11. Explain what to teach patients and families about insulin preparations.

Learning Content

- I. DIABETES
 - A. BLOOD GLUCOSE CONTROL
 - B. LOSS OF GLUCOSE CONTROL
 - C. CLASSIFICATION OF DIABETES MELLITUS
- II. DRUG MANAGEMENT FOR DIABETES MELLITUS
 - A. NON-INSULIN ANTIDIABETIC DRUGS
 - B. INSULIN STIMULATORS
 - C. BIGUANIDES
 - D. INSULIN SENSITIZERS
 - E. ALPHA-GLUCOSIDASE INHIBITORS
 - F. INCRETIN MIMETICS
 - G. AMYLIN ANALOGS
 - H. DPP-4 INHIBITORS
 - I. SODIUM-GLUCOSE COTRANSPORT INHIBITORS
 - J. INSULIN

Learning Activities

Readings from required and recommended texts. Case study reviews.

Critical thinking activities.

Lecture/Discussion

Clinical Reasoning Questions

CAI Assignments to be specified by faculty