



VNSG 1231
Pharmacology
Summer 2022
Monday & Wednesday
8:00 am – 10:25 am
Location: STEAM-237
Course Facilitator:
Shari Manning, MSN, FNP
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Molly Gundermann, MSM, RN
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Required textbooks:

Visovsky, Zambroski & Hosler Ford, (2022). *Introductory to Clinical Pharmacology*. (10th ed.).

Elsevier

Recommended textbooks: N/A

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.*

COVID-19 Statement:

All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus information site at www.com.edu/coronavirus. In compliance with Governor Abbott's May 18 Executive Order, face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face

coverings. We continue to encourage all members of the COM community to practice social distancing, when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit www.com.edu/coronavirus for future updates.

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 Objectives/Student Learning Outcomes:

Upon completion of this course, the student is expected to utilize beginning critical thinking skills in implementing the nurse roles of Patient Safety Advocate, Member of the Health Care Team, Member of the Profession, and/or Provider of Patient-Centered Care, and upon completion of the course, the student will be able to perform the following:

1. Identify properties, effects, and principles of pharmacotherapeutic agents across the lifespan.
2. Identify basic nursing interventions across the lifespan associated with various pharmacotherapeutic agents.
3. Utilize the nursing process across the lifespan as it applies to drug therapy.
4. Identify properties, effects, and principles underlying the use and administration of pharmacotherapeutic agents across the lifespan.
5. Describe common drugs for usage in treating specific conditions across the lifespan.
6. Demonstrate knowledge of the Texas Nursing Practice Act and the Texas Board of Nursing Rules that emphasize safety, as well as all federal, state, and local government and accreditation organization safety requirements and standards.
7. Discuss the practice of nursing according to the Texas Nursing Standards of Practice, Differentiated Essential Competencies (DECs) and within the parameters of the law.

WECM End-of-Course Outcomes:

Identify properties, effects, and principles of pharmacotherapeutic agents; and explain nursing interventions associated with the various pharmacotherapeutic agents.

Attendance:

See the Attendance policy in the Nursing Student Handbook.

Tardiness:

See Attendance policy in the Nursing Student Handbook.

Withdrawal:

See Admission, Progression, Dismissal, & Readmission policy in the Nursing Student Handbook.

ADA Statement:

Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Early Academic Alert Program:

The Counseling Center at College of the Mainland has implemented an Early Academic Alert Program. Students will be referred to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If referred to the Academic Alert Program, students will be contacted by someone in the Counseling Department. As student success and retention is very important to us, someone from the Counseling Department will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Classroom Conduct Policy/Student Conduct:

Classroom Conduct Policy: College of the Mainland requires that students enrolled at COM be familiar with the Standards of Student Conduct, which can be found in the on-line Student Handbook. <http://www.com.edu/student-services/studenthandbook.php>. Students should act in a professional manner at all times. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for student Conduct and may result in dismissal from this class.

In addition to the Standards of Student Conduct found in the online COM Student Handbook (<http://www.com.edu/student-services/student-handbook.php>), nursing students are expected to demonstrate good professional character as defined in in BON Rule 213.27 (http://bon.texas.gov/rr_current/213-27.asp). See Behavior/Conduct in the Nursing Student Handbook.

Academic Dishonesty

Any incidence of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty, such as cheating on exams, is an extremely serious offense. See Behavior/Conduct policy in the Nursing Student Handbook.

Plagiarism

Plagiarism is using someone else's words or ideas and claiming them as your own. Plagiarism is a very serious offense. Plagiarism includes paraphrasing someone else's words without giving proper citation, copying directly from a website and pasting it into your paper, using someone else's words without quotation marks. Any assignment containing plagiarized material will receive a **grade of zero** and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action. Also see the Behavior/Conduct policy in the Nursing Student Handbook.

Avoiding Plagiarism: <http://www.plagiarism.org/>

Course Requirements

1. **Unit exams (3):** 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 (1):** Assesses overall knowledge and understanding of complete course content. 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.

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 minimum final grade of "C" 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	%
Quiz 1**	5
Quiz 2**	5
Quiz 3**	5
Quiz 4**	5
Exam 1*	20
Exam 2*	20
Exam 3*	20
HESI Final Exam*	20
Total	100%
* $\geq 75\%$ exam average required to pass the course	

Concerns/Questions Statement:

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 the Course Facilitator. If, after discussing your concern with the Course Facilitator, you still have questions, please contact Director of Nursing, Debbie Bauer at (409) [933-8908](tel:4099338908) Dbauer3@com.edu

See the Student Concerns Policy in the Nursing Student Handbook.

Successful Tips for Students

1. Schedule time to study based on the difficulty of the content. Use this table as a guide:

Course Difficulty	Study Hours Per Week Per Hour in Class
High Difficulty Course	3 hours
Medium Difficulty Course	2 hours
Low Difficulty Course	1 hour

http://www.usu.edu/arc/StudySmart/pdf/estimating_study_hours.pdf

2. Read assignments before class or clinical. Here are some strategies for getting the most out of your college textbooks:

- 4 Steps to Reading a Textbook: <http://www.studyright.net/blog/4-steps-to-reading-a-textbook-quickly-and-effectively/>
- Active Reading Strategies: <http://www.princeton.edu/mcgraw/library/for-students/remember-reading/>
- The Reading Cycle: Plan-Do-Review <http://www2.swccd.edu/~asc/lrnglinks/txtrdg.html>
- How to Read Your Textbooks More Efficiently College Info Geek (video) <https://www.youtube.com/watch?v=tgVjmFSx7rg>
- 5 Active Reading Strategies for Textbook Assignments College Info Geek (video) [5 Active Reading Strategies for Textbook Assignments - College Info Geek](#)

ANA Scope and Standards of Practice

Students are expected to adhere to established ANA Scope and Standards of Practice (2015). (See Student Handbook and Clinical Evaluation Tool for detailed explanation of standards.)

Student Handbooks

Students are expected to adhere to all policies outlined in the College and Nursing Program student handbooks.

Syllabus Revisions

Faculty reserves the right to make changes to the syllabus as deemed necessary.

The Speaking, Reading, and Writing Center

The Speaking, Reading and Writing Center provides free tutoring services to students, staff and faculty seeking assistance for writing, reading and oral presentations for academic and nonacademic assignments/projects. Located in the Technical Vocational Building, Room 1306, the center provides face-to-face and online tutoring sessions in a welcoming environment.

Appointments can be made in person, or on the center scheduler at com.mywconline.com, or by clicking the SRWC icon on the COM website.

Notice to Students Regarding Licensing

Effective September 1, 2017, HB 1508 amends the Texas Occupations Code Section 53 that requires education providers to notify potential or enrolled students that a criminal history may make them ineligible for an occupational license upon program completion. The following website provides links to information about the licensing process and requirements:

https://www.bon.texas.gov/licensure_eligibility.asp.

Should you wish to request a review of the impact of criminal history on your potential Vocational Nurse License prior to or during your quest for a degree, you can visit this link and request a "Criminal History Evaluation":

https://www.bon.texas.gov/licensure_endorsement.asp.

This information is being provided to all persons who apply or enroll in the program, with notice of the requirements as described above, regardless of whether or not the person has been convicted of a criminal offense. Additionally, HB 1508 authorizes licensing agencies to require reimbursements when a student fails to receive the required notice.

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

Unit 2

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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 ANTIPILEPTIC DRUGS
 - B. NEWER ANTIPILEPTIC 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

Unit 3 – (Cont.)**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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

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

Unit 3 (Cont.)

Chapter 17 - Drugs for Osteoporosis and Hormonal Problems

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

Unit 3 (Cont.)
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

Unit 3 (Cont.)**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

Unit 3 (Cont.)

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