

Fall 2015

**THE UNIVERSITY OF TEXAS AT TYLER  
SCHOOL OF NURSING**

**SYLLABUS**

**PHARMACOLOGICAL BASIS FOR NURSING  
NURS 3307  
BRB 1025**

**FALL 2015**

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Request for appointments should be made in person or via UT Tyler email

The content of the syllabus/WEB site is subject to change at the discretion of the faculty leaders  
according to current learning needs

## TABLE OF CONTENTS

Section	page
Class Schedule	3
Course Description	4
Course Student Learning Outcomes	4
Textbooks and Materials	4
Disability Statement	4
Grading Policy	5
Grade Replacement Policy	5
Paper/Assignment Re-grading Policy	5
Examination and Examination Review Policy	5
Academic Integrity Policy	6
General Information	6
Unit Student Learning Outcomes	7

**NURS 3307 - Pharmacological Basis for Nursing Practice  
CLASS SCHEDULE - Mondays  
Fall 2015**

<b>Date</b>	<b>Unit</b>	<b>Lecture</b>	<b>ATI</b>
Week 1 8/23/2015	Unit 1 Unit 2 part 1	Introduction to Course (Bring syllabus) Dosage Calculations Pharm Basics - Part 1	Begin Dosage Calc 2.0 Dim. Analysis
Week 2 8/31/2015	Unit 2	Pharm Basics - Part 2	Intro to Pharmacology
Week 3 9/7/2015	Labor Day NO CLASS	Dosage Calculation Lecture - Tegrity	Dosage Calc 2.0 Dim. Analysis
Week 4 9/14/2015	Unit 3	Autonomic Nervous System	<b>Dosage Calc Final Test Due Tues 9/15/15 by 5 pm</b>
Week 5 9/21/2015	<b>EXAM #1</b>		
	Unit 4	Respiratory	Respiratory
Week 6 9/28/2015	Unit 5 part 1	Cardiovascular - Part 1	Cardiovascular
Week 7 10/5/2015	Unit 5 part 2	Cardiovascular - Part 2	Hematologic <b>Dosage Calc Final Make-up due Tues 10/5/15 by 5 pm</b>
Week 8 10/12/2015	<b>EXAM #2</b>		
	Unit 6 part 1	Central Nervous System - Part 1 Pain & Drugs of Abuse	Pain/Inflammation, Neurological Part 1
Week 9 10/19/2015	Unit 6 part 2	Central Nervous System - Part 2	Neurological Part 2, Musculoskeletal
Week 10 10/26/2015	Unit 7	Anti-Infective - Anti-Viral	Infection <b>Online Practice Test A due Fri 10/30/15 by 5 pm</b>
Week 11 11/2/2015	Unit 8	Gastrointestinal, Fluid, Electrolytes, & Nutrition	Gastrointestinal <b>Online Practice Test B Due Fri 11/6/15 by 5 pm</b>
Week 12 11/9/2015	<b>EXAM #3</b>		
	Unit 9 Unit 10	Endocrine Misc., Eye, Ear & Dermatologic	Endocrine
Week 13 11/16/2015	Unit 11 Unit 12	Reproductive & Gender related Immune, Biological Modifiers, & Chemotherapy	Reproductive - Urinary Immune
Week 14 11/23/2015	<b>THANKSGIVING BREAK</b>		
Week 15 11/30/2015	<b>EXAM #4 ATI Proctored Test</b>		
Week 16 12/7/2015	<b>FINAL EXAM</b>		

**Pharmacological Basis for Nursing  
NURS 3307**

**Semester Credit Hours:** Three (3) hours didactic

**Prerequisites:** Admission to the nursing program

**Course Description:**

Pharmacotherapeutic aspects of nursing care are introduced and supported by evidenced-based findings to improve patient care. Emphasis is on principles of safe administration of medications and patient education for major drug classifications. The impact of technology, economic, and regulatory forces as well as collaboration with the health team are discussed. Ethical/legal and cultural considerations are explored across the life span.

**Student Learning Outcomes for NURS 3307:**

Upon successful completion of the course, students will have demonstrated the ability to:

1. Integrate knowledge from the biological sciences and principles of mathematics to pharmacological aspects of nursing practice.
2. Discuss the importance of accountability in safe medication administration.
3. Apply evidence-based findings regarding the safe administration of medications.
4. Integrate the use of technology and information systems to facilitate safe medication administration.
5. Demonstrate basic knowledge of healthcare policy, finance, and regulatory environments related to safe medication administration.
6. Discuss the importance of inter/intra-professional collaboration related to safe medication administration to diverse populations across the lifespan.
7. Integrate health promotion, maintenance, restoration, and disease prevention in educating patients regarding medications and complementary therapies to reduce risks and improve health outcomes.
8. Discuss the influence of historical, moral, ethical, and legal aspects of medication administration in delivering care to diverse populations.
9. Explain how knowledge, skills, and attitudes impact the delivery of safe, holistic, evidence-based patient-centered care when delivering medications to diverse populations across the healthcare continuum.

Approved by Undergraduate Studies 05/09/12 and Texas Board of Nurse Examiners

**Required Textbooks and Materials:**

ANA Foundation of Nursing Packet (current versions purchased for Level I)

*Nursing's Social Policy Statement*. Washington, D.C.: American Nurses Association.

*Nursing: Scope and Standards of Practice*. Silver Spring, MD: American Nurses Association.

*Code of Ethics for Nurses with Interpretive Statements*. Silver Spring, MD: American Nurses Association.

ATI Nursing Education Online: *Pharmacology Made Easy 3.0* and *dosage Calculation 2.0*

*Tutorials*. Assessment Technologies Institute (ATI), LLC. Accessed from ATI website at:

<http://www.atitesting.com/Home.aspx>

Kee, J. L., Hayes, E. R., & McCuiston, L. E. (2015). *Pharmacology: A Patient-Centered Nursing Process Approach* (8<sup>th</sup> ed.). St. Louis, Missouri: Saunders. ISBN: 978-1-4557-5148-8

School of Nursing, (2015). *Guide for Baccalaureate Students*. Summer 2015/Spring 2016. Accessed from UT Tyler website: <http://www.uttyler.edu/nursing/files/baccalaureate-student-guide.pdf>

**Recommended Textbooks and Materials:**

Kee, J. L., Hayes, E. R., & McCuiston, L. E. (2015). Study Guide for *Pharmacology: A Patient-Centered Nursing Process Approach* (8<sup>th</sup> ed.). St. Louis Missouri: Saunders. ISBN: 978-1-4557-7053-3

**Disability Statement:**

“If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact Ida MacDonald in the Disability Support Services Office so that appropriate arrangements may be made. In accordance with federal law, a student requesting support services/accommodations must provide documentation of his/her disability to the Disability Support Services counselor.” For more information call or visit the Student Services Center located in the University Center, Room 282. The telephone number is 903-566-7079. Additional information may also be obtained at the following UT Tyler WEB address: <http://www.uttyler.edu/disabilityservices>.

**Grading Policy:**

Completion of NURS 3307 is based on satisfactory attainment of all course criteria. Any student failing to meet the course objectives and expectations must repeat the course and may not progress to the next level.

The simple average of exam grades, before weighted calculation is performed, must be 75% or above to pass the course. Grades will not be rounded when calculating the average (74.5 – 74.9 is not rounded to 75). Students with an overall exam average of 75 or higher will have course grades calculated based on the weighted calculation of the exams and other required course work.

The **Course Grade** consists of the following components:

4 Exams and 1 Comprehensive Final Exam (17% each)	85%
12 ATI Pharm Made Easy modules with tests (0.5% each) (80% test score or higher yields 0.5 points each for total of 6 points)	6%
10 ATI Dosage Calculation modules with tests (0.5% each) (80% test score or higher yields 0.5 points each for total of 5 points)	5%
ATI Dosage Calculation Test (92% score required, may attempt twice)	1%
ATI on-line Practice Tests A and B (80% score required; 0.5% for each test)	1%
ATI Proctored Pharm test	1%
Participation Grade (Group work and/or projects)	1%

**Letter Grades** will be assigned according to the following scale:

A	90-100
B	80-89
C	75-79
D	60-74
F	Below 60

**Grade Replacement Policy:**

If you are repeating this course for a grade replacement, you must file an intent to receive a grade forgiveness with the registrar by the 12th day of class. Failure to file an intent to use grade forgiveness will result in the original and repeated grade being used to calculate your overall grade point average. A student will receive grade forgiveness for only three undergraduate course repeats during his/her academic career: [http://www.uttyler.edu/registrar/policies/repeatingcourses\\_gradeforgiveness.php](http://www.uttyler.edu/registrar/policies/repeatingcourses_gradeforgiveness.php)

**Paper/Assignment Re-Grading Policy:**

Student assignments will not be re-graded. At the instructor’s discretion, a draft may be written for review.

**Examination and Examination Review Policy:**

1. Attendance for an exam is mandatory.
2. If absence for an exam is necessary, the student is responsible for notifying the faculty prior to the exam with an acceptable reason.
3. Students will be allowed entry to the computer lab after an exam has started ONLY with faculty discretion.
4. All hats/caps must be removed during exam time. All personal items such as purses, books, backpacks, notebooks, and briefcases will be left in the front of the room during testing.
5. Silence will be enforced during the exam time. In order to avoid distraction during the exam, no one will be permitted to leave the room during the exam.
6. Make-up exams will only be given at the discretion of the faculty member and may be in a different format than the original exam.
7. Students will not share calculators during exams. Students will not bring their own calculators, cell phones, or any communicating devices into an examination.
8. Exam reviews will be conducted at the discretion of the faculty. Exam review may be scheduled with the faculty during office hours and within 10 school days from the return of the exam grades.
9. Any student achieving an examination grade less than 75% must schedule an appointment with the faculty within 10 school days from the return of the exam grades.

**Academic Integrity Policy:**

1. Students are expected to assume full responsibility for the content and integrity of all academic work submitted as homework and examinations.
2. Students are advised to review the UT Tyler Academic Dishonesty Policy and Academic Integrity Policy in the current School of Nursing [BSN Student Guide](#) and Academic Integrity Policy for UT Tyler students at <http://www.uttyler.edu/jucicial-affairs/> . These policies are fully endorsed and enforced by all faculty members within the School of Nursing.
3. Plagiarism, cheating, and collusion are unacceptable and if found violating any of these standards, the student will be disciplined accordingly (See BSN Student Guide for definitions).
4. The School of Nursing reserves the right to dismiss students from the program for any infraction of legal, moral, social, or safety nature, pursuant to the procedures detailed in the *Regent's Rules*.

**Items to be avoided in all School-related Functions (including but not limited to):**

Overly frayed, worn or soiled garments; costume look, transparent blouses, bare mid-driff shirts, tank tops, spaghetti straps, muscle shirts, overtly sexual styles, gang colors or logos, facial or body piercing, obscene slogans or pictures, bedroom wear, short-shorts, short skirts, or clothing that may be offensive to others.

If the dress code rules are broken and a change of clothes is not available, the student may be removed from the school-related function for the remainder of the day. **Appropriate disciplinary action will be taken for repeated violations of this code.**

**General Information:**

1. If lecture outlines are used, they will be posted in Blackboard a minimum of two (2) working days prior to class and will be removed at midnight prior to class.
2. All submitted written materials (papers, assignments, exams, etc.) are the property of the School of Nursing. They will be maintained in an archived file in the School of Nursing.
3. The Baccalaureate Student Guide is available on the School of Nursing website at: <http://www.uttyler.edu/nursing/college/student-resources.php> .
4. All courses giving ATI exams will provide statement of dates of exams for that course.
5. Students must review and sign the Student Affirmation Form and the Social Networking Policy form and submit to Blackboard Grade assignment the first week of class.
6. All students are required to use their student email accounts for all correspondence.

**Unit Student Learning Outcomes:**

**For all outcomes – Upon successful completion of the unit, the student will:**

**Unit 1: DOSAGE CALCULATIONS**

**Mediations and Calculations:**

1. Discuss basic math concepts that are utilized when calculating medication dosages.
2. Identify key issues related to accurate dosage calculations from research in the clinical setting.
3. Solve dosage calculation problems for adults and children using the following concepts: Roman numerals and Arabic numbers, fractions, percentages, decimal, ratios and proportions, and/or dimensional analysis.
4. Convert units of measure between metric, apothecary, and household equivalents.
5. Interpret oral and injectable drug labels.
6. Discuss differences in dosage calculations with respect to oral, injectable, and topically administered medications.
7. Discuss differences in pediatric drug dosages and calculation of dosages to ensure safe delivery within the approved therapeutic range.

**Required Pre-Class Assignments:**

- Kee Textbook: Chapter 14 – Medications and Calculations
- ATI Dosage Calculation Tutorials (10 Modules with required tests after each module; must score at least 80% on each test)
- Bring calculator to class for practice

**Practice Math Test:**

- See Blackboard Assignments for practice tests and resources

**Recommended Optional Reading:**

- Kee Study Guide: Chapter 14 – Medications and Calculations

**Evaluation:**

- Exam: ATI Dosage Calculation Test (must score at least 92% on Final dosage Calculation Test.)
- Dosage calculation problems are on all major exams and the final exam.

**Unit 2: NURSING PHARMACOLOGY BASICS – PART I**

**Nursing Process and Client Teaching:**

1. Identify the five phases (assessment, nursing diagnosis, planning, implementation, and evaluation) of the nursing process and apply to situations where patients are receiving medications.
2. Develop patient-centered goals.
3. Discuss principles for health teaching related to drug therapy plans.
4. Describe culturally sensitive health teaching tips.
5. Analyze the nurse's role related to drug therapy plans.

**Required Pre-Class Assignments:**

- Kee Textbook: Chapter 11 – The Nursing Process in Patient-Centered Pharmacotherapy
- ATI Tutorial: Introduction to Pharmacology

**Recommended Reading:**

- Kee Study Guide: Chapter 11 – The Nursing Process in Patient-Centered Pharmacotherapy

**Evaluation:**

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

**Drug Action: Pharmaceutic, Pharmacokinetic, and Pharmacodynamic Phases:**

1. Explain the three basic areas of pharmacology (pharmaceutics, pharmacokinetics, and pharmacodynamics) and discuss the relationship between the dose of a drug and its effectiveness in treating disease.
2. Discuss the four phases of pharmacokinetics (absorption, distribution, metabolism, and excretion) and apply to situations where patients receive medications.
3. Explain how the following pharmacokinetic processes affect drug therapy: first-pass effect, half-life, bioavailability, protein-binding, free drugs, and creatinine clearance.
4. Discuss pharmacodynamics and explain the process of dose-response, drug-receptor interaction, onset, peak and duration of action, agonist/antagonist, non-specific and nonselective effects, therapeutic index and range, and peak and trough drug levels.
5. Explain how adverse drug effects, side effects, and toxic reactions occur.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 1, Drug Action – Pharmaceutic, Pharmacokinetic, and Pharmacodynamic Phases
- ATI Tutorial: Introduction to Pharmacology

Recommended Reading:

- Kee Study Guide: Chapter 1, Drug Action – Pharmaceutic, Pharmacokinetic, and Pharmacodynamic Phases

Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

**Life Span considerations – Pediatric and Geriatric Populations:**

1. Discuss how age affects medication therapy.
2. Explain how the anatomy and physiology of neonates, children, and geriatrics influence drug administration and therapeutic outcomes.
3. Discuss special concerns for geriatrics including non-compliance, polypharmacy, and problem drugs.
4. Apply steps of the nursing process to life-span issues to insure safe drug therapy.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 7 – Pediatric Pharmacology
- Kee Textbook Chapter 8 – Geriatric Pharmacology
- ATI Tutorial: Introduction to Pharmacology

Recommended Reading:

- Kee Study Guide: Chapter 7 – Pediatric Pharmacology
- Kee Study Guide: Chapter 8 – Geriatric Pharmacology

Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

## UNIT 2: NURSING PHARMACOLOGY BASICS – PART II

### The Drug Approval Process:

1. Discuss significant drug legislation at the state and federal level that influences drug standards today.
2. Compare differences in categories of drugs (controlled substances; generic, chemical, and brand names; and pregnancy categories) and explain implications for medication administration, including use of Poison Control.
3. Discuss legal and ethical considerations which impact nursing practice related to drug administration; include the ANA Code of Ethics for Nurses and Nurse Practice Acts.
4. Discuss the impact of healthcare policy, finance, and regulatory environments related to safe medication administration.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 2 – The Drug Approval Process
- ATI Tutorial: Introduction to Pharmacology

### Recommended Reading:

- Kee Study Guide: Chapter 2 – The Drug Approval Process

### Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

### The Role of the Nurse in Drug Research:

1. Discuss the process involved in the development of new drugs including investigational drugs and informed consent.
2. Discuss ethical principles and apply to situations related to medication administration (include informed consent and risk-to-benefit ratio).
3. Explain nursing responsibilities related to research involving medications.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 10 – The Role of the Nurse in Drug Research
- ATI Tutorial: Introduction to Pharmacology

### Recommended Reading:

- Kee Study Guide: Chapter 10 – The Role of the Nurse in Drug Research

### Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

### Drug Interaction, Over-the-Counter Drugs, and Herbal Products:

1. Discuss how drug interactions occur, including the phenomena of additive, synergistic and antagonist drug effects, drug-drug interactions and photosensitivity.
2. Discuss nursing implications of drug-food interactions.
3. Discuss the differences between prescription drugs, over-the-counter (OTC) drugs, and herbal products including legal implications.
4. Describe the advantages and disadvantages of OTC drugs, herbal, and complementary therapies including potential dangers.
5. Apply the concepts of the nursing process, particularly patient teaching, to administration of herbal and OTC drugs.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 4 – Drug Interactions and Over-the-Counter Drugs
- Kee Textbook: Chapter 6 – Herbal Therapies

### Recommended Reading:

- Kee Study Guide: Chapter 4 – Drug Interactions and Over-the-Counter Drugs

- Kee Study Guide: Chapter 6 – Herbal Therapies
- Acee, A., & Sharoff, L. (2012). Herbal remedies, mood, and cognition. *Holistic Nursing Practice*, 26(1), 38-51. (Retrieved online through UT Tyler Library database)

Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

**Cultural and Pharmacogenetic Considerations:**

1. Discuss how cultural and geographic factors (communication, social organization, health care practices related to wellness and disease prevention) can influence compliance with drug therapy and medication-related behavior.
2. Discuss the influence of biocultural ecology in the patient's response to selected medications, e.g. antihypertensive drugs.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 3 – Cultural and Pharmacogenetic Considerations
- ATI Tutorial: Introduction to Pharmacology

Recommended Reading:

- Kee Study Guide: Chapter 3 – Cultural and Pharmacogenetic Considerations

Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

**Safety and Quality with Medication Administration:**

1. Describe the “five plus five” rights of drug administration.
2. Discuss types of medication errors common to nurses and factors that contribute to their occurrence.
3. Discuss National Patient Safety Goals (patient identification, communication among caregivers, safety using medications, medication reconciliation, and patients' involvement in their won care) and methods of preventing and responding to medication errors.
4. Identify a “culture of safety” including advances in technology that enhance safety and delivery of medications, e.g. electronic records, barcoding, pregnancy categories.
5. Explain guidelines for correct administration of medications.
6. Describe routes of drug administration (Enteral: oral, gastric, rectal; Parenteral: intravenous, subcutaneous, intramuscular, intradermal; Topical: eye, ear, nasal, inhalation, rectal, skin, and vaginal). **Note: oral and injectable methods of administration are emphasized here.** Eye, ear, nasal, inhalation, transdermal, rectal, vagina, and artificial feeding methods will be discussed under applicable drug categories in later chapters.
7. Utilizing evidence-based findings, discuss skills, knowledge, and attitudes required of the nurse in the safe administration of diverse populations in a variety of settings.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 12 – Safety and Quality in Pharmacotherapy
- Kee Textbook: Chapter 13 – Medication Administration
- ATI Tutorial: Introduction to Pharmacology

Recommended Reading:

- Kee Study Guide: Chapter 12 – Safety and Quality in Pharmacotherapy
- Kee Study Guide: Chapter 13 – Medication Administration
- Reid-Searl, K. & Happell, B. (2012). Supervising nursing students administering medications: A perspective from registered nurses. *Journal of Clinical Nursing*, 21(13/14), 1998-2005.
- Tzeng, H., Yin, C., & Schneider, T. E. (2013). Medication error-related issues in nursing practice. *Medsurg Nursing*, 22(1), 13-50.

Evaluation:

- Exam: Unit Exam 1
- ATI Test: Introduction to Pharmacology

## UNIT 3: AUTONOMIC NERVOUS SYSTEM AGENTS

### **Adrenergic and Adrenergic Blockers:**

1. Discuss sympathetic nervous system stimulation and blockade related to drug therapy, including responses of alpha and beta receptors.
2. Discuss use, action, effect, and side effects of sympathomimetic and sympatholytic drugs.
3. Describe differences between selective and non-selective adrenergic drugs.
4. Apply the nursing process to clinical situations involving the administration of adrenergic agents, include specific teaching points for patients and caregivers.
5. Discuss emergency drugs that stimulate the adrenergic system: epinephrine p. 921, norepinephrine, p. 920, dopamine p. 919, and dobutamine, p. 920).

### **Required Pre-Class Assignments:**

- Kee Textbook: Chapter 18 – Adrenergic Agonists and Adrenergic Blockers

### **Recommended Reading:**

- Kee Study Guide: Chapter 18 – Adrenergic Agonists and Adrenergic Blockers

### **Evaluation:**

- Exam: Unit Exam 1

### **Cholinergic and Anticholinergics:**

1. Discuss parasympathetic stimulation and blockade related to cholinergic and anticholinergic medications including the role of muscarinic and nicotinic receptors.
2. Differentiate between direct-acting, indirect-acting cholinergic drugs and cholinesterase inhibitors.
3. Explain the use, action, effect, and side effects of parasympathetic drugs (cholinergic agonists and antagonists).
4. Discuss how acetylcholinesterase inhibitors/cholinesterase inhibitors are used to treat Myasthenia Gravis
5. Discuss anticholinergic drugs for Parkinson's disease and urinary frequency.
6. Discuss steps of the nursing process applied to cholinergic drugs including interventions and patient teaching.
7. Discuss an emergency drug used to block the parasympathetic system: atropine p. 912.

### **Required Pre-Class Assignments:**

- Kee Textbook: Chapter 19 – Cholinergic Agonists and Anticholinergics

### **Recommended Reading:**

- Kee Study Guide: Chapter 19 – Cholinergic Agonists and Anticholinergics

### **Evaluation:**

- Exam: Unit Exam 1

## UNIT 4: RESPIRATORY AGENTS

### Drugs for Upper Respiratory Disorders:

1. Compare and discuss antihistamine, decongestant, antitussive, and expectorant drug groups.
2. Describe the actions, uses, effects, and side effects of 1<sup>st</sup> and 2<sup>nd</sup> generation antihistamines, nasal and systemic decongestants, intranasal steroids, antitussives, and expectorants.
3. Compare advantages and disadvantages of drug routes (nasal, inhalation, and oral-systemic) for respiratory conditions.
4. Apply the nursing process, including nursing interventions and patient teaching for drugs used to treat the common cold and allergic rhinitis.
5. Apply evidence-based practice guidelines to the administration of upper and lower respiratory agents.
6. Identify and emergency drug for severe allergic reactions (diphenhydramine, p. 921).

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 40 – Drugs for Upper Respiratory Disorders
- ATI Tutorial: Respiratory System

### Recommended Reading:

- Kee Study Guide: Chapter 40 – Drugs for Upper Respiratory Disorders

### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Respiratory System

### Drugs for Lower Respiratory Disorders:

1. Define chronic obstructive pulmonary disease (COPD), to include asthma, bronchitis, and emphysema.
2. Describe common symptoms of COPD and the classifications of drugs used to treat.
3. Discuss the action, major effects, side effects, and precautions for bronchodilator drug categories: sympathomimetics (alpha and beta 2 adrenergic agonists), anticholinergics, and xanthine derivatives (aminophylline, theophylline).
4. Explain how other respiratory agents are used to control asthma, emphysema, and chronic bronchitis (antileukotriene agents glucocorticoids, and mast cell stabilizers), include use, action, and side effects.
5. State the therapeutic and toxic serum or plasma theophylline level.
6. Discuss common side effects of long-term steroid use.
7. Discuss the use of special equipment (nose drops/sprays, hand-held nebulizers (HHN), metered dose inhaler (MDI), dry powdered inhaler (DPI)) for administering respiratory tract medications.
8. Apply steps of the nursing process, including nursing interventions and patient teaching for the client taking drugs commonly used for COPD.
9. Identify emergency drugs for respiratory distress or allergic reactions and the mechanism for action (Albuterol, p. 260).

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 13, p. 136-138 – Medication Administration
- Kee Textbook: Chapter 41 – Drugs for Lower Respiratory Disorders
- ATI Tutorial: Respiratory System

### Recommended Reading:

- Kee Study Guide: Chapter 41 – Drugs for Lower Respiratory Disorders

### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Respiratory System

## UNIT 5: CARDIOVASCULAR SYSTEM AGENTS – PART I

### Cardiac Glycosides:

1. Define inotropic, chronotropic, and dromotropic.
2. Discuss disruptions in cardiac rate, rhythm, contraction, and blood flow to the myocardium, and how cardiac drugs regulate these abnormalities to maintain circulation.
3. Discuss cardiac glycoside drugs used to treat heart failure and cardiac dysrhythmias, including action, side effects, and important steps of the nursing process related to drug administration.
4. Discuss the role of BNP in treating heart failure.
5. Explain the risks of digoxin toxicity and overdose, including serum levels, and prevention/treatment.
6. Discuss an emergency drug used to enhance a positive chronotropic and inotropic effect on the heart (dobutamine, p. 920).

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 42, p. 601-607 - Cardiac Glycosides, Antianginals, and Antidysrhythmics
- ATI Tutorial: Cardiovascular System

### Recommended Reading:

- Kee Study Guide: Chapter 42 – Cardiac Glycosides, Antianginals, and Antidysrhythmics

### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Cardiovascular System

### Diuretics:

1. Describe how diuretics work in the kidney to filter sodium, potassium, and water.
2. Describe indications, actions uses, effects, side effects, and adverse reactions related to thiazide, osmotic, loop, and potassium-sparing diuretics.
3. Apply the nursing process, including nursing interventions and patient teaching, to patient situations where diuretics are used to affect fluid and/or electrolyte disturbances.
4. Identify potent diuretics used for emergency situations to produce a rapid diuresis (mannitol, p. 917 and furosemide, p. 924 and p. 626).

### Required Pre-Class Assignment:

- Kee Textbook: Chapter 43 – Diuretics
- ATI Tutorial: Cardiovascular System

### Recommended Reading:

- Kee Study Guide: Chapter 43 – Diuretics

### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Cardiovascular System

### Antianginals and Antidysrhythmics:

1. Discuss the term dysrhythmia, explain causes for common types, and describe how these abnormal rhythms affect circulation in the heart and to the body.
2. Differentiate between the 4 types of antidysrhythmic drugs (Class I – membrane stabilizing, Class II – beta blockers, Class III – prolong repolarization, and Class IV – calcium channel blockers, as well as an unclassified antidysrhythmic) and explain the use, action, effects, and common side effects.
3. Apply the nursing process to patient situations where antidysrhythmic drugs are given to control irregular heart rhythms and/or slow the heart rate.
4. Explain how myocardial ischemia is responsible for causing angina, including the precipitation factors and measures that decrease its occurrence.
5. Differentiate between the types of angina and types of treatment for each one.
6. Compare the various antianginals, such as nitrates, beta blockers, and calcium channel blockers in regard to use, action, effects and side effects.

7. Apply the nursing process, including nursing interventions and patient teaching, to patient situations where antianginal drugs are given to manage angina.
8. Discuss emergency drugs used to control cardiac arrhythmias (Amiodarone, p. 913, lidocaine, p. 914, adenosine, p. 912, diltiazem, p. 913, magnesium sulfate, p. 914) and treat myocardial infarction (nitroglycerine, p. 911 and morphine, p. 911).

Required Pre-Class Assignment:

- Kee Textbook: Chapter 42, p. 607-619 – Cardiac Glycosides, Antianginals, and Antidysrhythmics
- ATI Tutorial: Cardiovascular System

Recommended Reading:

- American Heart Association. (2011). Management of Patients with Unstable Angina/Non-ST Elevation Myocardial Infarction. Retrieved from [http://jaccjacc.cardiosource.com/DataSupp/ACCF/2011\\_UA\\_NSTEMI\\_PocketGuide.pdf](http://jaccjacc.cardiosource.com/DataSupp/ACCF/2011_UA_NSTEMI_PocketGuide.pdf)
- Kee Study Guide: Chapter 42 – Cardiac Glycosides, Antianginals, and Antidysrhythmics

Evaluation:

- Exam: Unit Exam 2
- ATI Test: Cardiovascular System

## UNIT 5: CARDIOVASCULAR SYSTEM AGENTS – PART II

### Antihypertensives:

1. Describe hypertension and factors affecting the development of high blood pressure.
2. Discuss the classification system used to categorize individuals with hypertension and the management of blood pressures according to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC-7).
3. Identify non-pharmacological lifestyle modifications to reduce BP along with medication.
4. Describe the actions, use, effects, side effects, and adverse reactions for major categories of antihypertensive drugs (adrenergic agents, angiotensin-converting enzyme inhibitors (ACE inhibitors) angiotensin II receptor blockers (ARBs), calcium channel blockers, diuretics, and vasodilators).
5. Apply steps of the nursing process, including patient teaching, to situations where patients are being treated for hypertension with appropriate medication.
6. Identify medications for acute blood pressure emergencies: Hypertension (labetalol, p. 922 and nitroprusside, p. 923) and Hypotension (dopamine, p. 919-920). **Norepinephrine??**

#### Required Pre-Class Assignments:

- Kee Textbook: Chapter 44 – Antihypertensives
- ATI Tutorial: Cardiovascular System

#### Recommended Reading:

- Kee Study Guide: Chapter 44 – Antihypertensives

#### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Cardiovascular System

### Anticoagulants, Antiplatelets, and Thrombolytics:

1. Summarize the general process of hemostasis and describe how anticoagulants, antiplatelets, fibrinolytics, and thrombolytics modify the coagulation process.
2. Discuss the use, action, effects, and side effects of anticoagulants, antiplatelets, fibrinolytics, and thrombotics.
3. Apply the nursing process, including nursing interventions and patient teaching, to patient situations where coagulation modifiers are used to affect clotting disturbances in the body.
4. Explain the choice of laboratory monitoring for anticoagulants, including PTT, PT, and INR, and apply in selected therapeutic situations.

#### Required Pre-Class Assignments:

- Kee Textbook: Chapter 45 – Anticoagulants, Antiplatelets, and Thrombolytics
- ATI Tutorial: Hematologic System

#### Recommended Reading:

- Kee Study Guide: Chapter 45 – Anticoagulants, Antiplatelets, and Thrombolytics

#### Evaluation:

- Exam: Unit Exam 2
- ATI Test: Hematologic System

### Antilipemic Agents:

1. Explain how hyperlipidemia evolves, the risk factors, and the relationship to coronary heart disease.
2. Discuss the various types of lipoproteins and how antilipemic drugs, as well as lifestyle changes, manage abnormal values.
3. Discuss the role of statins as first-line drug therapy for hypercholesterolemia, include use, actions, and side effects for statin drugs.
4. Apply steps of the nursing process to patient situations where statin drugs reduce hyperlipidemia.

#### Required Pre-Class Assignments:

Fall 2015

- Kee Textbook: Chapter 46 – Antihyperlipidemics and Peripheral Vasodilators
- ATI Tutorial: Cardiovascular System

Recommended Reading:

- Kee Study Guide: Chapter 46 – Antihyperlipidemics and Peripheral Vasodilators

Evaluation:

- Exam: Unit Exam 2
- ATI Test: Cardiovascular System

## UNIT 6: CENTRAL NERVOUS SYSTEM – PART I

### Antiinflammatory, Antirheumatoid, and Related Agents:

1. Discuss the inflammatory response and the part it plays in generation of pain.
2. Compare various disease process that are often identified as inflammatory in nature (rheumatoid arthritis, osteoarthritis, degenerative joint disorders, and gout).
3. Contrast non-steroidal antiinflammatory drugs (NSAIDs), anti-gout agents, and anti-arthritis agents in relation to their mechanism of action, use effect, side effects, and precautions.
4. Apply steps of the nursing process, including patient teaching, to clinical situations where patients receive NSAIDs, anti-gout, anti-arthritis, and other antiinflammatory agents.
5. Identify research from evidence-based practice related to treatments for inflammation.

#### Required Pre-Class Assignments:

- Kee Textbook: Chapter 25 – Antiinflammatory Drugs
- ATI Tutorial: Pain/Inflammation

#### Recommended Reading:

- Kee Study Guide: Chapter 25 – Antiinflammatory Drugs

#### Evaluation:

- Exam: Unit Exam 3
- ATI Test: Pain/Inflammation

### Nonopioid and Opioid Analgesics:

1. Describe pain, types of pain, and how pain can be managed through the use of pharmacologic methods.
2. Compare non-narcotic, salicylates, NSAIDs, and narcotics in pain management.
3. Discuss the difference between an opioid agonist, agonist-antagonist, and antagonist agents.
4. Compare the mechanism of action, drug effects, indications, side effects/adverse actions, contraindications, and interactions with non-narcotic salicylates, NSAIDs, narcotic agonists, and agonist-antagonist agents.
5. List age-related concerns for pediatric and geriatric populations regarding use of opioids.
6. Explain steps of the nursing process, particularly interventions such as methods of administration and patient teaching, with regards to non-narcotic and narcotic analgesics, e.g. use of PCA pumps and transdermal patches.
7. Discuss management of opioid overdose, including reversal agent in emergency situations (naloxone, p. 918).

#### Required Pre-Class Assignments:

- Kee Textbook: Chapter 26 – Nonopioid and Opioid Analgesics
- ATI Tutorial: Pain/Inflammation

#### Recommended Reading:

- Kee Study Guide: Chapter 26 – Nonopioid and Opioid Analgesics

#### Evaluation:

- Exam: Unit Exam 3
- ATI Test: Pain/Inflammation

### Drugs of Abuse:

1. Differentiate between appropriate use and drug (substance) abuse, drug misuse, addiction, dependence, tolerance, detoxification, withdrawal, and abstinence.
2. Identify common stimulants (cocaine, amphetamines, and nicotine) and depressants (alcohol, sedative-hypnotics (barbiturates, benzodiazepines, and opioids)) that are abused, and factors predisposing their abuse.
3. Discuss adverse effects of drug abuse and manifestations that indicate the need for treatment.
4. Describe effective treatments for drug abuse, including nicotine (nicotine replacement therapy, bupropion, varenicline), alcohol (thiamine and glucose, Librium, Ativan, Antabuse, and

Naltrexone), sedative-hypnotics (Romazicon), and opioids (Narcan, Methadone, Buprenorphine, and Naltrexone).

5. Discuss special situations with surgical patients and those experiencing pain.
6. Explain dangers of drug abuse for health professionals.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 5 – Drugs of Abuse

Recommended Reading:

- Kee Study Guide: Chapter 5 – Drugs of Abuse

Evaluation:

- Exam: Unit Exam 3

**Central Nervous System Depressants:**

1. Identify the types and stages of sleep and discuss the differences between a sedative and hypnotic.
2. Identify nonpharmacologic ways to induce sleep.
3. Discuss adverse effects of hangover, REM rebound, dependence, tolerance, and withdrawal symptoms.
4. Describe differences in short-acting, intermediate-acting, and long-acting barbiturates used as sedative-hypnotics.
5. Discuss the use, action effect, and side effects of barbiturates, benzodiazepines, non-benzodiazepines, and muscle relaxants.
6. Discuss steps in the nursing process for barbiturates, benzodiazepines, and muscle relaxants, including nursing interventions and patient teaching.
7. Identify the emergency reversal agents for benzodiazepines (flumazenil and Romazicon p. 918).
8. Define anesthesia and discuss differences in the use of general anesthesia, balanced anesthesia, local anesthetics, and moderate sedation.
9. Discuss use, action, effect, and side effects of sedatives, hypnotics, and anesthesia.
10. Discuss abuse potential and general treatment for depressants, including alcohol and sedative-hypnotics.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 21 – Central Nervous System Depressants
- ATI Tutorial: Neurological System Part I

Recommended Reading:

- Kee Study Guide: Chapter 21 – Central Nervous System Depressants

Evaluation:

- Exam: Unit Exam 3
- ATI Test: Neurological Part I

## UNIT 6: CENTRAL NERVOUS SYSTEM – PART II

### Anticonvulsants:

1. Describe classifications of seizures and give examples of the different types of seizures.
2. Describe how antiepileptic drugs are used to control seizures and describe their effects, side effects, and contraindications.
3. Explain the emergency treatment for status epilepticus (diazepam or Ativan).
4. Apply the steps of the nursing process to patients with epilepsy receiving anticonvulsant drugs, include patient teaching.
5. Discuss the differences in types of anticonvulsant drugs including hydantoins, barbiturates, and benzodiazepines.
6. Explain the steps of the nursing process, including interventions and patient teaching, related to the use of hydantoins and other anticonvulsants.
7. State the therapeutic range of phenytoin (Dilantin) and implications of abnormal values.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 22 – Anticonvulsants
- ATI Tutorial: Neurological Part I

### Recommended Reading:

- Kee Study Guide: Chapter 22 – Anticonvulsants

### Evaluation:

- Exam: Unit Exam 3
- ATI Test: Neurological Part I

### Central Nervous System Stimulants:

1. Explain the effects of stimulants on the central nervous system (CNS).
2. Discuss the terms narcolepsy, attention deficit disorder, headaches, and drugs used in treatment.
3. Discuss uses, actions, effects, and side effects of amphetamines, anorexiant, analeptics, and serotonin agonists.
4. Identify treatment modalities for migraine headaches.
5. Discuss steps in the nursing process related to CNS stimulants, including nursing interventions and patient teaching.
6. Discuss stimulant addiction (nicotine) and general treatment.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 20 – Central Nervous System Stimulants
- Kee Textbook: Chapter 26, p. 365-367 – Migraines
- Kee Textbook: Chapter 5, p. 44-46 – Nicotine
- ATI Tutorial: Neurological System Part I

### Recommended Reading:

- Kee Study Guide Chapter 20 – Central Nervous System Stimulants
- Kee Study Guide Chapter 26 – Nonopioid and Opioid Analgesics

### Evaluation:

- Exam: Unit Exam 3
- ATI Test: Neurological Part I

### Drugs for the Neurologic and Neuromuscular Disorders: Parkinsonism, Alzheimer's, Myasthenia Gravis, Multiple Sclerosis, and Muscle Spasms:

1. Discuss the pathophysiology of specific neurologic and neuromuscular disorders.
2. Explain the actions, use, effect, and side effects of the following categories of drugs used to manage neurologic and neuromuscular disorders: anticholinergics, dopaminergics, dopamine agonists, MAO-B inhibitors, COMT inhibitors acetylcholinesterase inhibitors, cholinesterase inhibitors, muscle relaxants and depolarizing agents to treat muscle spasms and as an adjunct to anesthesia.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 23 – Drugs for Neurologic Disorders: Parkinsonism and Alzheimer’s Disease
- Kee Textbook: Chapter 24 – Drugs for Neuromuscular Disorders: Myasthenia Gravis, Multiple Sclerosis, and Muscle Spasms
- ATI Tutorial: Neurological System Part I
- ATI Tutorial: Musculoskeletal System

Recommended Reading:

- Kee Study Guide: Chapter 23 – Drugs for Neurologic Disorders: Parkinsonism and Alzheimer’s Disease
- Kee Study Guide: Chapter 24 – Drugs for Neuromuscular Disorders: Myasthenia Gravis, Multiple Sclerosis, and Muscle Spasms

Evaluation:

- Exam: Unit Exam 3
- ATI Test: Neurological System Part I
- ATI Test: Musculoskeletal System

**Psychiatric Agents: Antipsychotics, Anxiolytics, Antidepressants, and Mood Stabilizers:**

1. Define psychosis and describe how typical (traditional) and atypical antipsychotic medications treat this disease.
2. Define the extrapyramidal syndrome related to the use of antipsychotic medications.
3. Discuss the use, actions, effects, and side effects of phenothiazines, nonphenothiazines, and atypical (Serotonin/Dopamine Antagonists) antipsychotics.
4. Describe the role of benzodiazepines and miscellaneous anxiolytics in the treatment of anxiety disorders.
5. Describe the uses, actions, effects, and side effects of selective serotonin reuptake inhibitors (SSRIs) and second and third generation antidepressants, including tricyclic antidepressants and monoamine oxidase inhibitors (MAOIs).
6. Discuss bipolar disorder and drugs used to stabilize mania (Lithium) and antidepressants to control the depressive side of the disorder.
7. Discuss the use, action effect, and side effects of lithium as well as the serum range for this drug and implications for nursing.
8. Apply steps of the nursing process to patients receiving psychotherapeutic drugs, include significant patient education points.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 27 – Antipsychotics and Anxiolytics
- Kee Textbook: Chapter 28 – Antidepressants and Mood Stabilizers
- ATI Tutorial: Neuromuscular System Part II

Recommended Reading:

- Kee Study Guide: Chapter 27 – Antipsychotics and Anxiolytics
- Kee Study Guide: Chapter 28 – Antidepressants and Mood Stabilizers

Evaluation:

- Exam: Unit Exam 3
- ATI Test: Neurological System Part II

## UNIT 7: ANTIBACTERIAL, ANTIVIRAL, AND OTHER ANTIINFECTIVE AGENTS

1. Explain the mechanism of action of antibacterial and antiinfective drugs.
2. Differentiate between bacteria that are naturally resistant and those that have acquired resistance to an antibiotic.
3. Discuss pan-resistance and its importance on the effectiveness of antibiotic worldwide.
4. Discuss the development of community-acquired and healthcare-acquired (nosocomial) infections.
5. Summarize the three general adverse effects associated with antibacterial/antiinfective drugs.
6. Differentiate between narrow-spectrum and broad-spectrum antibiotics.
7. Summarize the general categories of antibiotics and the reasons for choosing one type over another type.
8. Discuss actions, use, effects, and side effects for the following general categories: Penicillins, Cephalosporins, Sulfonamides, Macrolides, Tetracyclines, Aminoglycosides, Fluoroquinolones, Carbapenems, Antituberculars, Antifungals, Peptides, Metronidazole, Antivirals, Antimalarials, Anthelmintics, and Antiretroviral drugs, including drugs for urinary tract disorders.
9. Discuss special precautions when giving antibiotics, specifically allergies, ototoxicity, and nephrotoxicity.
10. Discuss how persons become infected with Tuberculosis (TB) and the treatment using first-line and second-line antitubercular drugs.
11. Discuss the infections that are labeled as fungal, malarial, protozoal, and/or helminthic in origin and list common signs and symptoms.
12. Discuss the process of immunosuppression in patients with viral infections, especially human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS).
13. Discuss antiretroviral therapy and fusion inhibitors in the management of HIV and the importance of adherence to drug regimen.
14. Apply steps of the nursing process, including nursing interventions and patient teaching, for each of the drug agents.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 29 – Penicillins and Cephalosporins
- Kee Textbook: Chapter 30 – Macrolides, Tetracyclines, Aminoglycosides, and Fluoroquinolones
- Kee Textbook: Chapter 31 – Sulfonamides
- Kee Textbook: Chapter 32 – Antituberculars, Antifungals, Peptides, and Metronidazole
- Kee Textbook: Chapter 33 – Antivirals, Antimalarials, and Anthelmintics
- Kee Textbook: Chapter 34 – Drugs for Urinary Tract Disorders
- Kee Textbook: Chapter 35 – HIV- and AIDS-related Drugs
- World Health Organization (2010). Antimicrobial resistance: Revisiting the “tragedy of the commons.” *Bulletin of the World Health Organization* 8 (p. 805-806). (Will be provided in lecture notes).
- ATI Tutorial: Infection

### Recommended Reading:

- Kee Study Guide: Chapter 29 – Penicillins and Cephalosporins
- Kee Study Guide: Chapter 30 – Macrolides, Tetracyclines, Aminoglycosides, and Fluoroquinolones
- Kee Study Guide: Chapter 31 – Sulfonamides
- Kee Study Guide: Chapter 32 – Antituberculars, Antifungals, Peptides, and Metronidazole
- Kee Study Guide: Chapter 33 – Antivirals, Antimalarials, and Anthelmintics
- Kee Study Guide: Chapter 34 – Drugs for Urinary Tract Disorders
- Kee Study Guide: Chapter 35 – HIV- and AIDS-related Drugs

### Evaluation:

- Exam: Unit Exam 3
- ATI Test: Infection

## **UNIT 8: GASTROINTESTINAL, FLUID AND ELECTROLYTE, NUTRITION**

### **Gastrointestinal Tract and Antiulcer Drugs:**

1. Discuss hyperacidic states in the GI system and influences on the development of peptic ulcer disease, spastic colon, and gastroesophageal reflux disease (GERD).
2. Describe the actions, uses, effects, and side effects of various groups of antiulcer drugs, including antacids, protectants, histamine-2 blockers, and proton pump inhibitors.
3. Compare two treatments for diarrhea (adsorbents and anticholinergics) and constipation (laxatives and stool softeners) and explain uses, actions, and side effects.
4. Apply the nursing process, including nursing interventions and patient teaching, for clinical situations where antiulcer drugs, antidiarrheals, and laxatives are used to treat problems related to bowel elimination.
5. Discuss nausea and vomiting, including precipitating factors and/or diseases, and common antiemetic agents, including use, action, and side effects.
6. Identify hazards of a previously recommended drug for poisoning (Syrup of Ipecac) and current advice regarding poisonous substances (activated charcoal, p. 919).
7. Discuss insertion technique for rectal suppository.

### **Required Pre-Class Assignments:**

- Kee Textbook: Chapter 13 – Medication Administration, rectal suppositories, p. 137-138.
- Kee Textbook: Chapter 47 – Drugs for Gastrointestinal Tract Disorders
- Kee Textbook: Chapter 48 – Antiulcer Drugs

### **Recommended Reading:**

- Kee Study Guide: Chapter 47 – Drugs for Gastrointestinal Tract Disorders
- Kee Study Guide: Chapter 48 – Antiulcer Drugs

### **Evaluation:**

- Exam: Unit Exam 4
- ATI Test: Gastrointestinal System

### **Vitamin and Mineral Replacement:**

1. Discuss the importance of various vitamins and minerals to the functioning of the human body.
2. Describe nutritional states and diseases caused by vitamin and mineral imbalances.
3. Discuss vitamins A, D, E, K (fat soluble) and B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, B<sub>12</sub>, C (water-soluble), include uses, actions, and side effects for each.
4. Discuss minerals including calcium, magnesium, and phosphorus, include uses, actions, and side effects.
5. Apply steps of the nursing process, including patient teaching, to clinical situations where vitamins and minerals are used to promote health and treat illness.

### **Required Pre-Class Assignments:**

- Kee Textbook: Chapter 15 – Vitamin and Mineral Replacement

### **Recommended Reading:**

- Kee Study Guide: Chapter 15 – Vitamin and Mineral Replacement

### **Evaluation:**

- Exam: Unit Exam 4

### **Fluid and Electrolyte Replacement:**

1. Discuss fluid balance, including movement between fluid compartments, and discuss the role of colloids, osmotic pressure, and hydrostatic pressure.
2. Compare isotonic, hypotonic, and hypertonic fluid.
3. Describe the classifications and give examples of intravenous fluids, including crystalloids (5% dextrose in water-D5W, normal saline, lactated ringers), colloids (volume expanders), and blood products (whole blood, packed red blood cells-RBCs, plasma, and albumin), include indications, uses, actions, side effects, and complications.

4. Explain the role of sodium, potassium, and magnesium; describe several signs and symptoms of hypokalemia, hyperkalemia, hyponatremia, hypernatremia, and recommended treatments.
5. Discuss the role of sodium bicarbonate in elevating pH and moving potassium back into the cell.
6. Discuss action, effect, side effects, and precautions necessary when administering electrolyte solutions and apply steps of the nursing process, including patient teaching, for clinical situations where parenterally administered fluids, electrolytes, and blood products are administered to prevent or correct imbalances.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 16 – Fluid and Electrolyte Replacement

Recommended Reading:

- Kee Study Guide: Chapter 16 – Fluid and Electrolyte Replacement

Evaluation:

- Exam: Unit Exam 4

## UNIT 9: ENDOCRINE

### **Endocrine Drugs: Pituitary, Thyroid, Parathyroid, and Adrenal Disorders and Antidiabetic Drugs:**

1. Discuss hormones and the relationship between the anterior and posterior pituitary gland, thyroid, parathyroid, adrenal glands, and other target glands.
2. Identify the actions, uses, effects, and side effects of the following pituitary hormones: adrenocorticotropic hormone, growth hormone, and posterior pituitary hormones.
3. Differentiate between hypo- and hyperthyroidism.
4. Discuss the actions, effects, and side effects for agents used to treat thyroid conditions requiring replacement hormones, or for antithyroid agents for hyperthyroidism.
5. Compare Type I and Type II diabetes mellitus.
6. Explain the difference between hyper- and hypoglycemia; give examples of the signs, symptoms, and treatment for both.
7. Compare the indications, actions effects, and side effects of oral diabetic agents and insulins used in the management of diabetes mellitus.
8. Compare and contrast the differences in rapid-acting, short-acting, intermediate-acting, long-acting, fixed combination, and sliding scale insulins.
9. Discuss the roles of Glucagon and Dextrose 50% (p. 771) in treating hypoglycemia or insulin shock.
10. Identify the peak concentration time for the different types of insulin action and when a hypoglycemic reaction may be most likely to occur.
11. Apply the nursing process, including interventions and patient teaching, for endocrine agents.
12. Identify alternatives in insulin delivery and research findings from evidence-based practice related to insulin.

### **Required Pre-Class Assignments:**

- Kee Textbook: Chapter 51 – Endocrine Drugs: Pituitary, Thyroid, Parathyroid, and Adrenal Disorders
- Kee Textbook: Chapter 52 – Antidiabetics
- ATI Tutorial: Endocrine System

### **Recommended Reading:**

- Kee Study Guide: Chapter 51 – Endocrine Drugs: Pituitary, Thyroid, Parathyroid, and Adrenal Disorders
- Kee Study Guide: Chapter 52 – Antidiabetics.
- Journal article: Gebel, E. (2013). Aids for insulin users: These devices may ease your routine. *Diabetes Forecast*, 66(1):62-65.

### **Evaluation:**

- Exam: Unit Exam 4
- ATI Test: Endocrine System

## UNIT 10: MISCELLANEOUS EYE, EAR, AND DERMATOLOGIC AGENTS

### **Drugs for Eyes, Ears, and Skin:**

1. Discuss disorders of the eye and medications that are used to treat them.
2. Explain the differences between chronic open-angle and acute closed-angle glaucoma and explain how miotics, beta blockers, prostaglandin analogues, and carbon anhydrase inhibitors are used in treatment.
3. Discuss the role of ocular antiinfectives, anti-inflammatories, and topical anesthetics in treating infections, inflammation, and eye pain, respectively.
4. Discuss common disorders of the ear and treatments, including administration of ear medications and irrigation.
5. Explain techniques of applying medications to the eye and ear.

6. Discuss the use, action, effect, and side effects of drugs used to treat eye and ear disorders.
7. Apply the steps of the nursing process, including patient teaching, for clinical situations where patients are treated for eye and ear disorders.
8. Differentiate acne vulgaris, psoriasis, drug-induced dermatitis, and contact dermatitis.
9. Describe non-pharmacologic measures used to treat mild acne vulgaris.
10. Compare the topical antibacterial agents used to prevent and treat burn tissue infection.
11. Discuss the nursing process, including teaching, related to commonly used drugs for acne vulgaris, psoriasis, and burns.

Required Pre-Class Assignments:

- Kee Textbook: Chapter 49 – Drugs for Eye and Ear Disorders
- Kee Textbook: Chapter 50 – Drugs for Dermatologic Disorders
- Kee Textbook: Chapter 14 – Medication Administration, Instillations, p. 135-136

Recommended Reading:

- Kee Study Guide: Chapter 49 – Drugs for Eye and Ear Disorders
- Kee Study Guide: Chapter 50 – Drugs for Dermatologic Disorders

Evaluation:

- Exam: Unit Exam 4

## UNIT 11: REPRODUCTIVE AND GENDER-RELATED AGENTS

### Female Health Agents:

1. Describe the use, action, effect, and side effects of estrogen and progesterone products, contraceptive agents, therapy for osteoporosis, and drugs used for pregnancy, labor, delivery, and postpartum period, include vitamins, fertility agents, and uterine stimulants and relaxants.
2. Discuss the management of pain during labor.
3. Explain the Rh factor related to pregnancy and treatment of the mother.
4. Summarize concerns for hormonal replacement therapy (HRT) and contraceptive agents.
5. Discuss the special problems of infertility, menopause, and osteoporosis and the role of drug therapy.
6. Discuss the method of inserting vaginal suppositories.
7. Apply the steps of the nursing process, including patient teaching, to clinical situations where drugs are administered to women to prevent, maintain, or treat common female conditions.
8. Identify evidence-based research related to medications or women's health issues.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 13 – Medication Administration, Vaginal suppositories, p. 138
- Kee Textbook: Chapter 53 – Female Reproductive Cycle I: Pregnancy and Preterm Labor Drugs
- Kee Textbook: Chapter 54 – Female Reproductive Cycle II: Labor, Delivery, and Preterm Neonatal Drugs
- Kee Textbook: Chapter 55 – Postpartum and Newborn Drugs
- Kee Textbook: Chapter 56 – Drugs for Women's Reproductive Health and Menopause
- ATI Tutorial: Reproductive and Genitourinary System

### Recommended Reading:

- Kee Study Guide: Chapter 53 – Female Reproductive Cycle I: Pregnancy and Preterm Labor Drugs
- Kee Study Guide: Chapter 54 – Female Reproductive Cycle II: Labor, Delivery, and Preterm Neonatal Drugs
- Kee Study Guide: Chapter 55 – Postpartum and Newborn Drugs
- Kee Study Guide: Chapter 56 – Drugs for Women's Reproductive Health and Menopause
- EBP article: Rachel, H., Montsine, N, Andrea, M., & Alwyn, T. (2010). There's always plan B: Adolescent knowledge, attitudes, and intention to use emergency contraception. *Contraception*, 81, 128-132.

### Evaluation:

- Exam: Unit Exam 4
- ATI Test: Reproductive System and Genitourinary System

### Men's Health Agents:

1. Describe the uses, actions, effects, and side effects of androgen therapy including testosterone and anabolic steroids.
2. Discuss the use of androgen inhibitors for benign prostatic hypertrophy, drugs for male-pattern baldness, and prostate cancer therapies.
3. Explain how drugs can treat male sexual dysfunction and identify associated risks.
4. Describe the use, action, effect, and side effects of drugs for men's health.
5. Apply the nursing process, including patient teaching, to clinical situations where patients receive drugs for male reproductive disorders.

### Required Pre-Class Assignment:

- Kee Textbook: Chapter 57 – Drugs for Men's Health and Reproductive Disorders

### Recommended Reading:

- Kee Study Guide: Chapter 57 – Drugs for Men's Health and Reproductive Disorders

### Evaluation:

- Exam: Unit Exam 4

## UNIT 12: IMMUNE, BIOLOGICAL MODIFIERS, AND CHEMOTHERAPY

### Vaccines:

1. Compare active and passive immunization.
2. Outline the currently recommended childhood immunization schedule, including diphtheria, tetanus, and pertussis (DTaP), tetanus and diphtheria (Td), polio, varicella, measles-mumps-rubella (MMR), Hib, Hepatitis (Hep-B, Hep-A), pneumococcal conjugate, influenza, meningococcal, human papilloma virus (HPV), and rotovirus.
3. Outline routine vaccines for adults including tetanus, diphtheria, pertussis, influenza, pneumococcal, human papilloma virus, MMR, and varicella zoster.
4. Discuss actions, uses, effects, contraindications, and side effects for immunizing agents.
5. Apply steps of the nursing process to patient situations where a toxoid or vaccine is being administered.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 36 – Vaccines
- ATI Tutorial: Immune System

### Recommended Reading:

- Kee Study Guide: Chapter 36 – Vaccines

### Evaluation:

- Exam: Unit Exam 4
- ATI Test: Immune System

### Anticancer Drugs:

1. Discuss the characteristics of normal cells and compare with cancerous or malignant cells.
2. Explain cell growth cycle and its relation to antineoplastic drugs which are cell-cycle specific (CCS) and cell-cycle non-specific (CCNS).
3. Explain how chemotherapy drugs are used more effectively in combination.
4. Identify general side effects and adverse reactions for anticancer drugs.
5. Describe the use, action, and side effects of the following types of drugs: alkylating compounds, antitumor antibiotics, antimetabolites, and mitotic inhibitors, include immune enhancing medications and “target therapies” to treat cancer.
6. Explain precautions that should be taken with IV administration of chemotherapy agents and treatment of adverse side effects such as extravasation.
7. Apply the nursing process, including nursing interventions and patient teaching, related to administration of immune-enhancing and anticancer drugs.
8. Identify research findings from evidence-based practice of cancer treatment and quality of life.

### Required Pre-Class Assignments:

- Kee Textbook: Chapter 37 – Anticancer Drugs
- Kee Textbook: Chapter 38 – Targeted Therapies to Treat Cancer
- Kee Textbook: Chapter 39 – Biologic Response Modifiers
- ATI Tutorial: Immune System

### Recommended Reading:

- Kee Study Guide: Chapter 37 – Anticancer Drugs
- Kee Study Guide: Chapter 38 – Targeted Therapies to Treat Cancer
- Kee Study Guide: Chapter 39 – Biologic Response Modifiers
- Website: Agency for Healthcare Research and Quality: <http://www.ahrq.gov/>

### Evaluation:

- Exam: Unit Exam 4
- ATI Test: Immune System