

---

ARKANSAS TECH UNIVERSITY

DEPARTMENT OF NURSING



PHARMACOLOGY I

NUR 3402

Fall 2020

---

ARKANSAS TECH UNIVERSITY  
DEPARTMENT OF NURSING

**COURSE:** NUR 3402

**TITLE:** PHARMACOLOGY

**CREDIT HOURS:** TWO (2) HOURS

**CONTACT HOURS:** TWO HOURS PER WEEK

**COURSE FACULTY:**

Terri McKown, DNP, APN, FNP-BC  
Office: Dean Hall  
Office phone: 964-0583 ext. 4665  
Cell phone: 857-7608  
Email: [tmckown@atu.edu](mailto:tmckown@atu.edu)  
Office hours: On bulletin board

Lisa DuBose, DNP, MSN, RN  
Office: Dean Hall  
Office phone: 964-0583 ext. 4656  
Cell phone: 501-472-8097  
Email: [ldubose@atu.edu](mailto:ldubose@atu.edu)  
Office hours: On bulletin board

**INSTRUCTIONAL RESOURCES:**

**Required Textbooks:**

Online access: Pharmacology Made Easy 4.0. ATI Nursing Education. Atitesting.com. (approx. \$70)

DO NOT PURCHASE BOOK THAT GOES WITH IT. You have already received this during Level O.

## **COURSE/CATALOG DESCRIPTION:**

This course focuses on the relationships between the action of drugs, their effects and the contraindications for their administration. The relationship between specific patient needs and the type of drugs that would be effective to meet those needs will be analyzed. The nursing care related to each type of drug and the rationales for the care will be included.

## **Justification/Rationale for the Course**

By the completion of this course the student will progress toward student learning outcomes 1, 2, 3, 4, and 5.

This upper division professional nursing course provides opportunities for the student to apply knowledge and skills from the general education component and from nursing courses to the clinical care of individuals and families.

## **Student Learning Outcomes:**

1. Applies knowledge, skills and abilities to the provision of safe, competent patient care.
2. Demonstrate, culturally sensitive caregiving, communication, teaching, advocacy, and management of diverse patient populations and settings.
3. Utilizes research evidence and technology to improve the quality and safety of patient care.
4. Collaborates with interprofessional health care teams in the delivery of patient care.
5. Demonstrates academic achievement and professional growth.

## **Course Objectives:**

On successful completion of this course, the nursing student will be able to:

1. Understand the role of pharmacokinetics and pharmacodynamics in medication administration. (SLO 1, 2, 3, 4)
2. Utilize the nursing process in medication administration. (SLO 1, 2, 4)
3. Discuss nursing implications associated with medication administration. (SLO 1, 2, 3, 4, 5)
4. Identify patient education needs pertinent to medications. (SLO 1, 2)
5. Discuss side effects, adverse effects and precautionary measures to be taken with various medications. (SLO 1, 2)
6. Explore the legal and ethical issues associated with medication administration. (SLO 1, 2, 3)

## **CONDUCT OF THE COURSE:**

### **Teacher Role:**

Demonstrator, Evaluator, Facilitator, Resource Person, Role Model, Communicator, and Supporter.

### **Student Role:**

Learner, Teacher, Advocate, Care Giver, and Communicator.

### **Teaching-Learning Strategies:**

Lecture and discussion, charts, diagrams, and audiovisual materials, and critical thinking activities.

### **Evaluation:**

#### 1. Grading Scale

A = 90 - 100

B = 80 - 89

C = 75 - 79

D = 68 - 74

F = 67 and below

2. A grade of "C" or above must be achieved in every nursing course in order to progress in the Nursing program. Any grade below 75% will not be rounded to up.
3. You must complete all requirements with a cumulative weighted grade of 75% to successfully pass the course.
4. A semester grade of "I" or "Incomplete" will be given to those students whose work is incomplete because of illness or other circumstances beyond the student's control. This grade will be assigned at the discretion of the instructor according to the amount of time missed, the ability of the student to complete the necessary assignments, and the quality of the student's previous work. (See Student Handbook)
5. Failure to meet course requirements will result in an "Incomplete" grade for the course.
6. Examinations will be taken at designated times. If a student cannot take the examination at the scheduled time, he/she is responsible for contacting the instructor prior to scheduled testing to

make arrangements for making up the examination. Make-up examinations will be essay or objective in nature at the discretion of the instructor and will be scheduled on the first day the student returns to class. Exams will be completed through Blackboard Respondus with monitoring. If you do not have a camera, please see faculty ASAP.

7. Students with special needs or disabilities will inform the instructor at the beginning of the course. Any testing conducted at the testing center will be according to class test date schedule. No exceptions.

8. Examinations:

Four (4) Unit Tests.....	60% (15% each test)
Tickets to class/Assignments.....	5%
ATI test.....	10%
Discussion Board.....	10%
Comprehensive Final Exam.....	<u>15%</u>
	100%

9. Students who drop/fail Pharmacology I must prove competency in other Level I courses if reaccepted into program.

10. Students who withdraw from NUR 3402 (this course), MUST withdraw from NUR 3404: Practicum in Nursing I.

11. Students who are not successful in ANY Level I course must make an appointment with the Level Coordinator to review options prior to current semester end.

Professional Activities—Maximum of 2 points from SNA (only after completion of course and you must have been successful in course in order for SNA points to apply).

### **Weekly Discussion Board Guidelines**

Discussion boards are collaborative learning experiences. Therefore, the student will create a thread addressing the topic each day of class within 24 hours of every lecture. Each thread must be at least 200 words and demonstrate knowledge related to the medication/disease process. In addition to the thread, each student will reply to one classmate's thread. The reply must be at least 200 words. Each thread and reply must incorporate at least one credible reference. All references should be from credible sources, not Wikipedia, newspapers, blogs, etc . This MUST be in your own words, NO "copying and pasting" allowed. A message which says simply, "I agree", "Great Job" or "Very good idea, I want to use it in my clinical", would not constitute substantive participation since it does not add anything of substance to the discussion. Grading rubric is provided in

blackboard.

**NUR 3402 Rubric for Discussion Board Posts**

	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>Total</b>
<b>Relevance</b>	Discussion post and reply to another student are both on topic and contribute to meaningful discussion.	Discussion post and reply to student are on topic but one of them does not contribute in a meaningful way.	Either discussion post or reply to another student is not closely related to topic.	Neither discussion post nor reply to another student is closely related to topic.	
<b>Research-based discussion post and reply to another student</b>	Discussion post and reply to another student demonstrate research of topic and refer to two resources in body of post and in reference list at the bottom.	Discussion post and reply to another student demonstrate research of topic but only one of them lists two references in body and at the bottom.	Utilizes only one resource as research for the post and one for the reply to another student (must be listed in body and at the bottom).	Does not demonstrate research-based response.	
<b>Promptness</b>	Discussion post and reply to another student are completed within required timeframe (24 hours for response, 48 hours for reply to student).	Discussion post is on time but the reply to another student is not within required timeframe.	Reply to another student is on time but discussion post is late.	Both discussion post and reply are late.	
<b>Critical thinking/logic is evident in posting</b>	Flow of thought is logical, evidence of critical thought in response.	Most of flow is logical, some evidence of critical thought in response.	Flow of thought confusing, minimal critical thought in response.	Flow of thought disjointed, no use of critical thought.	
<b>Response to other student's posting</b>	Responds to one other student's posting within 48 hours of lecture and in a meaningful manner.*	Responds to one other student's posting in appropriate timeframe but not in a meaningful manner.*	Responds to one other student's posting in a meaningful manner but not in the appropriate timeframe.	Does not respond to another student's post.	

\*Meaningful manner refers to understanding the student's communication and responding with well thought out factual information. Opinions should be used sparingly along with statements reflecting personal agreement (there is a place for personal agreement, but it needs to reflect researched facts to support the opinions).

**Policies**

**Class Attendance:**

1. Regular class attendance is considered essential if the student is to receive maximum benefit from the course. ***The student is responsible for attending all classes as scheduled and on time, in class and/or online.*** Control of class attendance is vested in the teacher. Please refer to

- Tardy and Attendance Policy in Student Handbook for detailed information.
2. Students consistently tardy to class may be subject to class dismissal at discretion of the instructor.
  3. Only officially invited guests are to attend nursing classes.

### **Dress and Behavior:**

1. The nursing student is expected to dress appropriately while attending class.
2. Smoking/Vaping/Tobacco products are not allowed in any classroom.
3. Disruptive behavior will not be tolerated.
4. No recording devices in class without permission from the instructor. This includes videoing and/or social media websites.
5. No wearing of wrist apparel, hats, caps or hoods during class/testing.
6. No reproduction of test questions at any time. During test reviews, there will be no photographing of exam questions, recording of the test review nor taking notes of exam questions. Violations will be subject to grade reduction or dismissal from the course.
7. No bathroom breaks during testing.
8. Asking questions during testing is strongly discouraged.

### **Cell Phone/Smart Watch Policy**

There is a **NO cell phone/smart watch policy for all upper division testing/test review**. This includes paper/pencil testing, test review, cooperative testing, and computer testing. If you are discovered with having a cell phone/smart watch on your person, this will be considered a violation of the Academic Honesty Policy. If we discover that you have your cell phone/smart watch with you during a unit exam/cooperative testing or unit exam review **you will receive a 0 for the test grade**.

### **Discrimination Statement:**

Arkansas Tech University does not discriminate on the basis of color, sex, sexual orientation, gender identity, race, age, national origin, religion, veteran status, genetic information, or disability in any of our practices, policies, or procedures. If you have experienced any form of discrimination or harassment, including sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or

dating violence), we encourage you to report this to the institution. If you report such an incident of misconduct to a faculty or staff member, they are required by law to notify Arkansas Tech University's Title IX Coordinator and share the basic fact of your experience. The Title IX Coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus. For more information please visit: <http://www.atu.edu/titleix/index.php>.

### **Disability/Special Accommodations:**

Arkansas Tech University values diversity and inclusion and is committed to a climate of mutual respect and full participation of all students. My goal is to create a learning environment that is useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or prevent an accurate assessment of your achievement, please meet with me privately to discuss your needs and concerns. You may also contact the Office of Disability Services, located in Doc Bryan Student Center, Suite 141, in person, via phone at (479) 968-0302 or TTY (479) 964-3290, via email at [disabilities@atu.edu](mailto:disabilities@atu.edu), or visit their website at <https://www.atu.edu/disabilities/index.php> in order to initiate a request for accommodations.

### **Academic Honesty**

Students are expected to be honest and truthful in both classroom and practicum experiences. They are expected to adhere to the Code of Ethics and uphold current standards of care. Students are referred to the Arkansas Tech University Student Handbook for more specific regulations regarding academic honesty.

Students are expected to:

- a. Perform their assigned tasks in the practicum experiences. Students should have the permission of the clinical instructor before using assistance from the staff.
- b. Notify the instructor immediately of any clinical error made so that steps can be taken to prevent harm to the patient.
- c. Present written work that is theirs alone.
- d. Correctly document any materials from a textbook, pamphlet, journal, etc., that is used for an assignment.
- e. Be honest and truthful when writing clinical logs and giving verbal or written reports regarding patient care or the student's clinical experiences or assignments.
- f. Only use authorized devices or materials for an examination and not copy from other students' papers.
- g. Document material correctly. Plagiarism is defined as stealing and presenting as one's own ideas or words of another, or not documenting material correctly. Student papers may be evaluated by [turnitin.com](http://turnitin.com) which can detect plagiarism. For the first occurrence of academic dishonesty, the student will receive an F. If there is a second occurrence, the student will be dismissed from the program. Students are referred to the ATU catalog and handbook for policies regarding plagiarism.

### **Abilities and Skills Policy**

Students must comply with the Abilities and Skills policy while taking this course. Please see the Arkansas Tech University Student Handbook.



## CLASSROOM BEHAVIOR

Each member of the Arkansas Tech University community is obliged to conduct her/himself in a non-disruptive manner in the classroom. If a student is being disruptive, the instructor will address the situation, discussing behavioral expectations moving forward, and emphasize possible consequences for failing to comply. If the disruptive behavior persists, the student may be suspended on an interim basis from the class. Instructors may report excessive and/or repeated disruptive behavior through the Procedures for Addressing Violations of Academic Integrity and Classroom Behavior. This process includes an appeals process students may use to challenge perceived violations or excessive penalties. Students who exhibit disruptive behavior may also be referred to the Department of Student Conduct (see Article III, Section C of the Arkansas Tech University Student Handbook).

## COVID-19 Considerations

In order to help keep our ATU community safe, healthy, and to prevent the spread of COVID-19, students must follow several steps:

1. Masks must be worn by all students in public spaces, including classrooms and laboratories. Any student showing up for class without a mask will be given the opportunity to retrieve one. Entry into classrooms and laboratories without a mask will be prohibited. Please refer to the guidance from CDC as to the proper use of cloth masks (<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wear-cloth-face-coverings.html>). Note that CDC does not recommend the use of a face shield in the place of a cloth mask (<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-coverguidance.html>).
2. All students are required to participate in a daily health self-screen (<https://www.atu.edu/pandemicrecovery/student-health-screening.php>). For students commuting to campus, please complete before coming to campus. For residential students, please complete each day before leaving your residence hall. If you do not own a thermometer, please have your temperature taken at one of the temperature testing sites listed in the student health screening document and repeated below:
  - Department of Public Safety available beginning July 6th (716 N El Paso Avenue); Monday-Friday; 8am-5pm
  - Health and Wellness Center available beginning August 3rd (outdoor tent station by north entrance of Doc Bryan Student Services Center) from Monday-Friday; 8am-5pm
  - University Commons Clubhouse available beginning August 10th; Monday-Friday; 8am-10pm and Sunday; 5pm-10pm
3. All students must maintain at least 6 feet of distance from every person present in all instructional spaces used in this course (classrooms, laboratories, etc.).
4. Any student who tests positive for COVID-19 is asked to self-report to the ATU Health and Wellness Center by calling (479) 968-0329 or sending e-mail to [hwc@atu.edu](mailto:hwc@atu.edu). Doing so will allow the university to communicate directly with others who might have been exposed to the virus and take any appropriate cleaning and sanitizing measures. Students are expected to abide by the above steps in accordance with the Student Handbook section on Classroom Behavior.

For more information about ATU COVID-19 policies, please refer to the ATU Pandemic Framework (<https://www.atu.edu/pandemicrecovery/docs/Pandemic%20Framework-2020.pdf>) as well as the University's Pandemic Recovery webpage (<https://www.atu.edu/pandemicrecovery/>).

## **EXAMS/UNIT TESTS**

Remediation: Optional: Under “Unit Test Remediation”, complete the assignment within 48 hours of each unit test for an additional point to your test score. Must be handwritten in blue ink and uploaded in the Pharmacology I blackboard course.

# NUR 3402 PHARMACOLOGY

## FOCUS A: Introduction to Pharmacology

### OBJECTIVES

The student will:

1. Define a prototype drug.
2. Distinguish between generic and trade names of drugs.
3. Describe the main categories of controlled substances in relation to therapeutic use, potential for abuse, and regulatory requirements.
4. Identify the multiple safeguards that are in place to promote drug safety in packaging, drug laws, and approval processes.
5. Recognize initiatives designated to enhance safe drug administration.
6. Develop personal techniques for learning about drugs and using drug knowledge in patient care.
7. Identify authoritative sources of drug information.
8. Differentiate between pharmacology and drug therapy.
9. Discuss cellular physiology in relation to drug therapy.
10. Describe the main pathways and mechanisms by which drugs cross biologic membranes and move through the body.
11. Explain each process of pharmacokinetics.
12. Discuss the clinical usefulness of measuring serum drug levels.
13. Describe major characteristics of the receptor theory of drug action.
14. Differentiate between agonist drugs and antagonist drugs.
15. List drug-related and patient-related variables that affect drug actions.
16. Discuss mechanisms and potential effects of drug–drug interactions.
17. Identify signs and symptoms that may occur with adverse drug effects on major body systems.
18. Discuss general management of drug overdose and toxicity.
19. Discuss selected drug antidotes.
20. Apply the rights of medication administration in the care of a patient.
21. Illustrate knowledge needed to administer medications to a patient.
22. Identify and interpret the drug orders for medication administration.
23. Demonstrate the ability to calculate drug dosages accurately.
24. Apply the steps of the nursing process in the administration of medications.
25. Demonstrate safe and accurate administration of medications.
26. Apply evidence-based practice research in the administration of medications.
27. Identify alternative or complementary therapy that may potentiate, negate, or cause toxicity with prescribed medications.
28. Understand pharmacodynamics and pharmacokinetic changes related to age in older adults.
29. Understand the relevance of the Beers Criteria to medication administration in the aging population.
30. Identify the physiological changes associated with increased age related to pharmacokinetics (absorption, distribution, metabolism, and excretion) of medications.
31. Understand the effect of polypharmacy on the medication response of older adults.
32. Implement patient education about medications to prevent medication-related reactions and adverse effects.
33. Differentiate between complementary, alternative, and integrative therapies, their uses, adverse effects, interactions, and nursing interventions.

### LEARNING ACTIVITIES

**Required Reading:** Content Mastery Series (ATI Pharm Review book): Unit 1, Chapters 1-6, 49

**ATI: Module 1**

# NUR 3402 PHARMACOLOGY

## FOCUS B: Cardiovascular/HTN/HF/Diuretics

### OBJECTIVES

The student will:

1. Understand the pathophysiology of right-sided and left-sided heart failure.
2. Identify the major manifestations of heart failure.
3. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the inotrope (cardiac glycoside) drug class.
4. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the phosphodiesterase inhibitors (cardiotonic-inotropic agents).
5. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for human B-type natriuretic peptide.
6. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for adjuvant drugs used in the treatment of heart failure.
7. Implement the nursing process in the care of patients undergoing drug therapy for heart failure.
8. Identify effects produced by stimulation of alpha- and beta-adrenergic receptors.
9. Discuss use of epinephrine to treat anaphylactic shock, cardiac arrest, and acute bronchospasm.
10. Identify patients at risk for the adverse effects associated with adrenergic drugs.
11. List commonly used over-the-counter preparations and herbal preparations that contain adrenergic drugs.
12. List characteristics of adrenergic drugs in terms of etiology, pathophysiology, and clinical manifestations, along with pharmacokinetics, action, use, adverse effects, contraindications, and nursing implications in use of adrenergic agents.
13. Discuss using adrenergic drugs in special patient populations.
14. Teach patients about safe, effective use of adrenergic drugs.
15. Describe signs and symptoms of toxicity due to noncatecholamine adrenergic drugs and how to treat this condition.
16. Understand the nursing process for using adrenergic drugs.
17. Describe factors that regulate blood pressure.
18. Describe how hypertension is classified.
19. Discuss nonpharmacologic measures to control hypertension.
20. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the angiotensin-converting enzyme inhibitors.
21. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the angiotensin II receptor blockers.
22. Describe the rationale for using combination drugs in the management of hypertension.
23. Review the effects of alpha-adrenergic blockers, beta-adrenergic blockers, calcium channel blockers, and diuretics in the management of hypertension.
24. Apply the nursing process in the care of patients with hypertension.
25. Recognize normal renal physiology and the conditions requiring diuretic administration.
26. Describe the thiazide diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
27. Describe the loop diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
28. Describe the potassium-sparing diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
29. Discuss the rationale for using combination products containing a potassium-losing and a potassium-sparing diuretic.
30. Discuss the rationale for concomitant use of a loop diuretic and a thiazide or related diuretic.
31. Understand how to apply the nursing process in the care of patients receiving diuretics.

### LEARNING ACTIVITIES

**Required Reading:** Content Mastery Series (ATI Pharm Review book): Unit 4, Chapters 19-21  
**ATI: Module 5**

# NUR 3402 PHARMACOLOGY

## FOCUS C: Respiratory System

### OBJECTIVES

The student will:

1. Describe characteristics of selected upper respiratory disorders and symptoms.
2. Identify the prototype drug for each drug class.
3. Discuss nasal decongestants in terms of their action, use, contraindications, adverse effects, and nursing implications.
4. Describe antitussive agents in terms of their action, use, contraindications, adverse effects, and nursing implications.
5. Describe expectorants in terms of their action, use, contraindications, adverse effects, and nursing implications.
6. Discuss mucolytics in terms of their action, use, contraindications, adverse effects, and nursing implications.
7. Discuss the advantages and disadvantages of using combination products to treat the common cold.
8. Understand how to use the nursing process in the care of patients receiving nasal decongestants, antitussives, expectorants, and mucolytic agents.
9. Delineate effects of histamines on selected body tissues.
10. Describe the types of hypersensitivity or allergic reactions.
11. Identify the effects of histamine that are blocked by histamine1 (H1) receptor antagonist drugs.
12. Discuss first-generation H1 receptor antagonists in terms of prototype, indications and contraindications, major adverse effects, interactions, and administration.
13. Describe second-generation H1 receptor antagonists in terms of prototype, indications and contraindications, major adverse effects, interactions, and administration.
14. Understand how to use the nursing process in the care of patients receiving antihistamines.
15. Describe the asthma and bronchoconstriction in terms of its pathophysiology.
16. Compare and contrast the short-acting (rescue) and the long-term maintenance inhaled beta2-adrenergic agonists.
17. Identify the prototype drug from each drug class used to treat asthma and bronchoconstriction.
18. Describe drugs used to treat asthma and bronchoconstriction in terms of mechanism of action, indications for use, major adverse effects, and nursing implications.
19. Understand how to use the nursing process in the care of patients with asthma and bronchoconstriction.

### LEARNING ACTIVITIES

**Required Reading: Content Mastery Series (ATI Pharm Review book): Unit 3, Chapters 17, 18**  
**ATI: Module 4**

## NUR 3402 PHARMACOLOGY

### FOCUS D: Cardiovascular: Antidysrhythmics/Antianginals/Antilipidemics

#### OBJECTIVES

The student will:

1. Give an overview of the cardiac electrophysiology and an outline of specific cardiac dysrhythmias that affect heart rhythm, heart rate, or both.
2. Describe principles of therapy in the management of dysrhythmias, including measures that do not involve antidysrhythmic drugs.
3. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for class I sodium channel blockers.
4. Identify the prototype and outline the action, use, adverse effects, contraindications, and nursing implications for beta-adrenergic blockers.
5. Identify the prototype and explain the action, use, adverse effects, contraindications, and nursing implications for potassium channel blockers.
6. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for calcium channel blockers.
7. Describe the nursing process implications and actions related to caring for patients using selected antidysrhythmic drugs.
8. Recognize the etiology, pathophysiology, and clinical manifestations of angina.
9. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications for the organic nitrates.
10. Identify the prototype and outline the actions, use, adverse effects, contraindications, and nursing implications for the beta-adrenergic blockers.
11. Identify the prototype and describe the actions, use, adverse effects, contraindications, and nursing implications for the calcium channel blockers.
12. Apply the nursing process in the care of patients with angina.
13. Identify the prototype and other antilipidemics, and outline the actions, uses, adverse effects, contraindication, and nursing implications for lipidemia.

#### LEARNING ACTIVITIES

**Required Reading:** Content Mastery Series (ATI Pharm Review book): Unit 4, Chapters 22-24

**ATI: Module 5**

# NUR 3402 PHARMACOLOGY

## FOCUS E: Antibiotics/Drugs affecting Infection

### OBJECTIVES

The student will:

1. Identify the common etiologies of inflammation.
2. Discuss the pathophysiology of inflammation.
3. Describe, in general, the groups of drugs used to treat inflammation.
4. Identify the common pathogens and methods of infection control.
5. Discuss the pathophysiology of infection.
6. Discuss ways to minimize emergence of drug-resistant microorganisms.
7. Discuss ways to increase the benefits and decrease the risk associated with antimicrobial drug therapy.
8. Know how to apply the nursing process to the care of the patient who is receiving anti-microbial therapy.
9. Describe general characteristics of beta-lactam antibiotics.
10. Discuss the penicillins in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
11. Recognize the importance of questioning patients about allergies before the initial dose of all drugs, especially penicillins.
12. Describe characteristics of beta-lactamase inhibitor drugs.
13. Give the rationale for combining a penicillin and a beta-lactamase inhibitor drug.
14. Discuss the cephalosporins in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
15. Discuss the carbapenems in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
16. Discuss the one monobactam drug in relation to effectiveness, safety, spectrum of anti-bacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
17. Use the nursing process in the care of patients receiving beta-lactam antibiotics.
18. State the rationale for the increasing use of single daily doses of aminoglycosides.
19. Discuss the importance of measuring serum drug levels during aminoglycoside therapy.
20. Describe measures to decrease nephrotoxicity and ototoxicity with aminoglycosides.
21. Identify characteristics of aminoglycosides and fluoroquinolones in relation to effectiveness, safety, spectrum of antimicrobial activity, indications for use, administration, and observation of patient responses.
22. Recognize factors influencing selection and dosage of aminoglycosides and fluoroquinolones.
23. Describe characteristics, uses, adverse effects, and nursing process implications of fluoroquinolones.
24. Discuss principles of using aminoglycosides and fluoroquinolones in renal impairment and critical illness.
25. Identify the prototype and describe the characteristics, action, use, adverse effects, contraindications, and nursing implications of the tetracyclines.
26. Identify the prototype and describe the characteristics, action, use, adverse effects, contraindications, and nursing implications of the sulfonamides.
27. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the adjuvant urinary antiseptic agents used in the treatment of urinary tract infections.
28. Implement the nursing process in the care of patients being treated with tetracyclines, sulfonamides, or urinary antiseptics.
29. Describe the characteristics and specific uses of macrolide and ketolides anti-infective agents.
30. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of macrolides.
31. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of ketolides.
32. Describe the action, use, adverse effects, contraindications, and nursing implications of miscellaneous anti-infective agents.
33. Implement the nursing process in the care of patients being treated with macrolides, ketolides, and other miscellaneous anti-infective agents.

### LEARNING ACTIVITIES

**Required Reading:** Content Mastery Series (ATI Pharm Review book): Unit 12: Chapters 43-46  
**ATI: Module 12**

# NUR 3402 PHARMACOLOGY

## FOCUS F: Digestive System Drugs/GI

### OBJECTIVES

The student will:

1. Describe the main elements of peptic ulcer disease and gastroesophageal reflux disease.
2. Discuss antacids in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
3. Describe histamine<sub>2</sub> receptor antagonists in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
4. Discuss proton pump inhibitors in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
5. Identify the adjuvant medications used to treat peptic ulcer and gastroesophageal reflux disease.
6. Understand how to use the nursing process in the care of patients receiving antacids, proton pump inhibitors, and histamine<sub>2</sub> receptor antagonists.
7. Identify patients at risk for developing nausea and vomiting.
8. Discuss the phenothiazines in terms of indications and contraindications for use, routes of administration, and major adverse effects.
9. Describe selected antihistamines used to control nausea and vomiting in terms of indications and contraindications for use, routes of administration, and major adverse effects.
10. Discuss the 5-hydroxytryptamine<sub>3</sub> receptor antagonists in terms of indications and contraindications for use, routes of administration, and major adverse effects.
11. Describe the substance P/neurokinin 1 antagonist aprepitant in terms of indications and contraindications for use, routes of administration, and major adverse effects.
12. Identify the prototype drug for each drug class.
13. Identify nonpharmacologic measures to reduce nausea and vomiting.
14. Understand how to use the nursing process in the care of patients receiving drugs for the management of nausea and vomiting.
15. Discuss the etiology, physiology, and clinical manifestations for constipation and elimination problems.
16. Educate patients about nonpharmacologic measures to prevent or treat constipation.
17. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the laxatives.
18. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the cathartics.
19. Identify the prototype, indications, dosages, and routes for the miscellaneous agents used to treat constipation and other conditions.
20. Understand how to use the nursing process in the care of patients with constipation.
21. Identify the common causes of diarrhea.
22. Identify patients at risk for development of diarrhea.
23. Describe opioid-related antidiarrheal agents in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
24. Identify adjuvant drugs used to manage diarrhea.
25. Understand how to use the nursing process in the care of patients receiving drug therapy for diarrhea.

### LEARNING ACTIVITIES

**Required Reading:** Content Mastery Series (ATI Pharm Review book): Unit 6: Chapters 28-29  
**ATI: Module 7**



# NUR 3402 PHARMACOLOGY

## FOCUS G: Endocrine/Antidiabetic Drugs

### OBJECTIVES

The student will:

1. Differentiate between type 1 and type 2 diabetes mellitus.
2. Understand the major effects of endogenous insulin on body tissues.
3. Identify the clinical manifestations of type 1 and type 2 diabetes mellitus.
4. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the insulins.
5. Discuss characteristics of the various types of insulins and insulin analogs.
6. Identify the various prototypes and describe the actions, uses, adverse effects, contraindications, and nursing implications for the oral antidiabetic drugs.
7. Identify the different prototypes and describe the actions, uses, adverse effects, contraindications, and nursing implications for the amylin analogs, incretin mimetics, and dipeptidyl peptidase-4 (DPP-4) inhibitors.
8. Implement the nursing process in the care of patients receiving medications for the treatment of diabetes mellitus.
9. Explain the benefits of maintaining glycemic control in preventing complications of diabetes.
10. Assist patients or caregivers in learning how to manage diabetes care, including administration of medication agents used to manage diabetes.
11. Assess and monitor patients' adherence to prescribed management strategies.
12. Differentiate between other endocrine disorders, including thyroid, anterior pituitary hormones/growth hormones, antidiuretic hormones, adrenal hormones/replacement, and hyperpituitarism medications.
13. Identify the characteristics of each endocrine disorders and medication usage, adverse effects, contraindications, and nursing implications for these medications.

### LEARNING ACTIVITIES

**Required Reading: Content Mastery Series (ATI Pharm Review book): Unit 10: Chapters 39-40**  
**ATI: Module 9**