

**Pharmacology for Medical Assisting**  
**MDCA 1348.021 - Hybrid**  
**Spring 2024**

**COURSE SYLLABUS**

Instructor: ***Karen Pitts, BAAS, AAS, CMA (AAMA)***  
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**Course Description:**

The student will be instructed in concepts and application of pharmacological principles. The class focuses on drug classifications, principles and procedures of medication administration, mathematical systems and conversions, calculation of drug problems, and medico-legal responsibilities of the medical assistant.

**Prerequisite:**

MDCA 1317 Procedures in a Clinical Setting I

**Required Texts:**

- *Principals of Pharmacology for Medical Assisting Sixth Edition, Jane Rice*
- *MindTap Access – electronic platform, e-textbook included*

**Student Learning Outcomes:**

1. On entry level skills students will demonstrate understanding of the concepts and application of pharmacological principles.
2. On entry level skills students will demonstrate the cognitive focus of drug classifications.
- 3 On entry level skills students will demonstrate the cognitive ability to perform principles and procedures of medication administration.
4. On entry level skills students will demonstrate the cognitive and the psychomotor ability to perform mathematical systems and conversions.
5. On entry level skills students will demonstrate the cognitive ability to perform calculation of drug problems.
6. On entry level skills students will demonstrate the understanding of the medical-legal responsibilities of the medical assistant.

**Course competencies:**

- I.C.10.a/b/c/d – Identify the classifications of medications including indications for use, desired effects, side effects, and adverse reactions
- I.C.13 – Identify appropriate vaccinations based on an immunization schedule

II.C.1.a/b – Define basic units of measurement in the metric system and the household system

II.C.2 – Identify abbreviations used in calculating medication dosages

I.P.4.a/b/c/d/e/f – Verify the rules of medication administration: right patient, right medication, right dose, right route, right time, and right documentation

I.P.5 – Select proper sites for administering parenteral medication

I.P.6 – Administer oral medications

I.P.7 – Administer parenteral (excluding IV) medications

II.P.1 – Calculate proper dosages of medication for administration

II.P.4 – Apply mathematical computations to solve equations

II.P.5 – Convert among measurements systems

Course competencies covered in MDCA 1352 as well:

I.P.5 – Select proper sites for administering parenteral medication

I.P.6 – Administer oral medications

I.P.7 – Administer parenteral (excluding IV) medications

### **Course Policies:**

To ensure you have all key information available to you off-line, it is highly recommended that you print the student syllabus for your reference. Your course calendar is your Learning Modules tab. Each week includes the specific date for it so you can stay on track with assignments and future assignments.

Students are responsible for checking their Blackboard Course Messages, Blackboard Announcement Board, NTCC email, and Microsoft Teams for instructor communications.

### **Attendance:**

This is an online course – there is no on-campus attendance for this course. Attendance is not recorded for this class. It is recommended that you log-on to your classroom at least twice daily to ensure you are aware of announcements, assignments, discussions, and testing. The course week begins on Monday at 12:01am and ends on Sunday at 12:00 midnight. Days of the week correspond as follows:

Monday – Day 1

Tuesday – Day 2

Wednesday – Day 3

Thursday – Day 4

Friday – Day 5

Saturday – Day 6

Sunday – Day 7

## **Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to: online through the BlackBoard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, BlackBoard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the BlackBoard course site.

## **Instructional Methods and Tools:**

The instructional methods and tools are tied to the course and chapter learning objectives by allowing the student to research, discover, and perform the differing educational exercises within the MindTap Learning Platform and class discussion forums. This course uses the following tools to aid students in successfully achieving the learning objectives in this course:

1. The MindTap Learning Platform will be used for the majority of assignments in this course. The platform contains different learning tools that include videos, homework assignments, and quizzes.
2. Weekly discussion questions.
3. Additional articles, lectures, and video demonstrations supplied by the instructor.

## **Evaluation and Grading Criteria:**

Exams will be given each week and will cover information contained in your text, class discussions, and any additional materials given by the instructor. If there is an alteration in the class calendar, the change will be announced in the "announcements" section of Black Board. There are **NO** make-up exams and I do **NOT** accept late assignments! All assignment due dates are listed in the course calendar and under the description of the actual assignment. If you have a conflict with the date, it is your responsibility to contact me in advance of the due date to make arrangements for alternate submission. Failure to do so will result in a grade of zero for the assignment. **It is your responsibility to ensure that your assignments are submitted on or before the due date!** I do understand that there are unforeseen circumstances (such as a death in the immediate family and hospitalization) that may not allow you to post assignments by the due date.

Please contact me as soon as possible to arrange for an extension. **Technology issues are not valid reasons for missing deadlines.** Please ensure that your computers are updated with the correct software. Course weeks closes on Day 7 at 11:59pm.

**Drop Policy:** The last day to drop with a grade of “W” is **Thursday, April 18, 2024.** The instructor will **not** drop students from the course rolls for any reason. If the student decides not to complete the course, it is the responsibility of the student to officially drop the course through the Registrar’s office. Failure to do so will result in an “F” being awarded in the course.

**Grading Scale:**

Discussion Board, Student Contract	15%
Apply Yourself, Unit Self Assessments, Assignments, Test Yourself, Test	55%
Final Comprehensive Exams	30%

**Grading Scale:** The grading scale of all evaluation combined will be as the following

90% - 100%	=	A
89% - 80%	=	B
79% - 75%	=	C
<b>Below 74%</b>	<b>=</b>	<b>F</b>

75% is the minimum passing level of achievement. Any student who receives a final score below 75% will not pass the course. In addition, medical assistant students must obtain a passing score on all psychomotor and affective domain objectives (competencies) in the course. CAAHEP accreditation requires 100% of all medical assisting graduates pass 100% of all competencies.

Grades will be posted online under “**My Grades**” in Blackboard. Grades will be posted no later than day 7 of the following week in which the assignment was due. For example, if your assignment was due in Week 3, you would not receive grades on that assignment until Day 7 of Week 4. MindTap grades will automatically post to your grade book after you have submitted the assignment. I do review tests and worksheet assignments for computer errors and may award credit for answers that I feel are correct.

I will log in to the course at least 4 times during the week to monitor the weekly **Discussion** area. Feedback will be provided in the **Discussion** area and/or in the **Announcements** area. Requests for more specific feedback may be made in the **Discussion** area or in the **Ask the Instructor** area. I will respond to at least one main post each week but will not usually respond to all posts. If you feel you are not receiving enough personal feedback, you are strongly encouraged to contact me and ask for more specific feedback via email.

## **Academic Dishonesty**

Academic dishonesty is considered an act of cheating. Each student has a responsibility to follow the college policies regarding academic dishonesty which are found on page 86 in the Northeast Texas Community College General Catalog. Please see my letter regarding Academic Integrity found on BlackBoard under “**Start Course Here**”.

**Any student found guilty of academic dishonesty, the issue will be dealt with per NTCC’s policies and may receive a grade of “0” for that assignment. A second violation will result in failure of the course.**

### **Online Communication:**

Since this is online course and we do not interact face-to-face, good communication within the online environment is essential. Please read “The Core Rules of Netiquette” posted under “**Start Course Here**.”

If you have any questions regarding course content or questions related specifically to the class, please post them in the “**Ask the Instructor Forum**” posted under “**Start Course Here**” or “**DISCUSSIONS**.” Please take advantage of this forum as all students may benefit from your knowledge. If you have a personal question or situation, please email me directly. I make it a policy to answer all emails within 24 hours of receipt of the email. If I do not respond to you in 24 hours, please text me. As with electronic transfer of information (Internet connection issues), I may not have received your email. I also make it a point to log-on to our classroom frequently each week. If for any reason I will be unavailable during the semester, I will post the information under the “**Announcements**” tab.

It is important to always check your **NTCC E-mail, the Discussion area, Announcements**, and the **Ask the Instructor** area each time you check into the classroom. One of your classmates may have offered feedback or insight that will be helpful to you or I may have provided information in general to assist you in your work.

Private e-mailing between student and instructor via the **NTCC e-mail** should only be used for personal, confidential situations. Any communication regarding a personal matter should be sent directly to the instructor via e-mail. No communications of a private or personal matter should be posted in the public spaces of the classroom.

Please feel free to use the Class Biography forum to initiate and participate in conversations not directly related to the course. This is an excellent opportunity to get to know other students.

### **Course Navigation:**

Please ensure that you navigate through the entire course so you are aware of the location of course materials, email, grade book, BlackBoard help, etc. It is your responsibility to ensure your knowledge of the BlackBoard system. If you have any questions, please post in the “**Ask the Instructor Forum**,” or you can contact NTCC’s

Tech Support. There are several “tabs” to the left of the course screen that provide additional information for the course.

**Internet Connection Issues:**

Since this course is delivered in an online format, please ensure that you have the proper computer and Internet set-up. There are no excuses for not submitting assignments due to technology issues – in other words, “my dog ate my computer” is not a valid excuse. If you have issues regarding connectivity, please contact NTCC’s Tech Support for help. If you have issues with navigating through the BlackBoard system, please refer to the “HELP” tab to the left on the course screen.

**Course Materials and Assignments:**

Along with your text books for this course, additional course materials located within the MindTap program are available as educational resources. You are also expected to use the Internet for additional research to enhance your discussions and assignments. There are several types of assignments that will be required to be completed during this course.

**Discussion Questions (DQs):** You will have one DQ due each week. Your initial response to the DQ is due by Day 2 (minimum word count of 50 words). You are required to respond to your instructor and at least two of your peers as this is an open forum and we often learn from each other’s posts by Day 5. I expect your posts to be researched, insightful, and add value to the discussion. Please note that I do grade on grammar, spelling, citation and referencing, and punctuation as correct use of written communication is important. I also require that you cite and reference your information. I have posted basic information for use of APA formatting under the “Start Course Here” tab. Your responses must be paraphrased in your own words. DO NOT COPY/PASTE from the Internet as this is plagiarism. Please see the section regarding “Academic Dishonesty.”

**Textbook Assignments:** The following assignments are performed using your textbook “Principles of Pharmacology for Medical Assisting”:

**Unit Self Assessments:** Due by Day 7 of each week (Located in your Pharmacology text book)

**MindTap Assignments:** All of the following assignments are performed through the MindTap Learning Platform and are due by Day 7 of each week:

**Apply Yourself:** Due by Day 7 of each week.

**Test Yourself:** Due by Day 7 of each week.

**Final Exam:** Due by Day 7 of each week. (Each chapter has a final exam for that chapter)

\*\*\*If any of these assignments do not load on your cell phone through the BlackBoard app and/or via MindTap link, please use a desktop or laptop computer to complete the assignments.

**\*\*\*There are no make-ups for any activities or assignments and I do not accept late work unless prior arrangements have been made.**

**Final Comprehensive Exam:** This exam will be administered the last week of class and will not be available before the last week of class. Additional information regarding the final will be posted in week 15 of class. **There is absolutely NO MAKE UP for the final exam.**

**APA (American Psychological Association) Format:** APA is a specific format that is a guideline for every aspect of writing, from determining authorship to constructing a table to avoiding plagiarism and constructing accurate reference citations. This format must be adhered to for all writing assignments to avoid plagiarizing your written material including discussion questions and peer responses. If you are unfamiliar with APA formatting, I have provided an Internet link on the “**Start Course Here**” page for reference.

### **ADA Statement**

It is the policy of Northeast Texas Community College to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the Northeast Texas Community College Catalog or Student Handbook or you can contact the Coordinator of Special Populations at 903-434-8202, or visit the website:

<http://www.ntcc.edu/index.php?module=Pagesetter&func=viewpub&tid=111&pid=1>

### **Tobacco Use**

If you come to NTCC’s campus, the use of tobacco products including smokeless tobacco, smoking tobacco, electronic cigarettes, and any legal smoking preparation is prohibited in all College buildings, enclosed facilities, inner campus, and College owned vehicles.

#### Tobacco use is prohibited in:

1. All enclosed buildings and facilities, including but not limited to classrooms, offices, food service areas, lavatories and residence halls
2. All exterior areas in the inner campus and parking lots.
3. All college owned vehicles.

#### Tobacco use is permitted in:

1. Personal vehicles

2. Designated smoking huts on the west side of campus.

### **Family Educational Rights and Privacy Act (FERPA)**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

#### Learning Objectives:

##### Unit 1:

- Define Key terms for this unit
- Express Arabic numerals as Roman numerals
- Express Roman numerals as Arabic numerals
- Express fraction as a simple, compound, complex, proper, or improper fraction
- Express fractions as equivalent
- Determine the relative values of fractions
- Express improper fractions as mixed numbers
- Add, Subtract, Multiply, Divide fractions and mixed numbers
- Work the practice problems and review problems correctly
- Successfully complete the Self- Assessment

##### Unit 2:

- Define Key terms listed in the unit
- Read and write decimals correctly
- Define and use the power of 10
- Express common fraction as decimal fraction
- Express decimal fraction as common fraction
- Add, Subtract, Multiply, Divide decimals
- Answer questions in the learning exercise correctly
- Successfully complete the Self- Assessment

##### Unit 3:



- Define Key terms listed in the unit
- Express ratio as a quotient, as a fraction, and as a decimal
- Name four terms proportion
- Solve for x and prove your answer
- Work the practice problems and review problems correctly
- Successfully complete Self- Assessment

#### Unit 4

- Define Key terms listed in the unit
- List 10 guidelines you will use as you work with the metric system
- Name the seven common prefixes used in the metric system
- Name the fundamental units of the metric system
- State why you place a zero before the decimal point
- Write the metric equivalents for length, volume, mass, and weight
- Write the abbreviations for the metric equivalents for length, volume, mass and weight
- Name the metric equivalent that are most frequently used in the medical field
- Use the proportional method to convert from one metric unit to another
- Use the moving the decimal method to convert from one metric unit to another
- Calculate dosages according to kilogram of body weight
- Answer the questions in the learning exercise correctly
- Work the practice problems and review problems correctly
- Successfully complete Self- Assessment

#### Unit 5

- Define Key terms listed in the unit
- Describe oral and parenteral routes of drug administration
- Name two measures used to determine the amount of medication to be administered and give an example of each measure
- List six medications that are measured in units
- Calculate dosages by the proportional or formula method
- Work the practice problems and review problems correctly
- Successfully complete Self- Assessment

#### Unit 6

- Define the Key terms listed in the unit
- State the guidelines for administering medications to a pediatric patient
- Calculate children's dosages according to kilogram of body weight
- Work the practice problems and review problems correctly
- Successfully complete Self- Assessment

#### Unit 7

- Define Key terms listed in the unit
- Define pharmacology
- State five medical uses for drugs

- Give three names assigned to drug
- List five main sources for drugs, given examples from each source
- State the importance of the Federal Food, Drug, and Cosmetic Act
- Explain the significance of the Controlled Substance Act (CSA)
- Define the five controlled substances schedules, and give examples of each drug listed
- Explain storage and recordkeeping for controlled substances
- Make use of the drug references/resources described in the unit
- Define dosage
- List the factors that affect drug dosages
- Define the terms used in describing various types of doses
- Answer the review questions correctly

#### Unit 8

- Define Key terms listed in the unit
- List the forms in which drugs are prepared, and give examples of these preparations
- List the routes used for drug administration
- Classify drugs according to preparation and therapeutic action
- Define selected classifications of drugs and give examples of each
- List the three general ways that drugs may be grouped
- Define the actions of drugs according to the descriptive terms listed in this unit
- Describe four basic stages of a drug's life in the body
- Describe the undesirable actions of drugs
- Answer the review questions correctly

#### Unit 9

- Define the key terms listed in this unit
- Give the seven pieces of information that a proper medication orders include
- Describe the eight parts of a prescription
- State the two main classes of medicines according to federal law
- Describe and give the benefits of e-prescribing
- Describe the journey of an E-script
- State the helpful prescriptions refill information you should share with your patients
- Describe other types of medication orders given in this text
- List five ways in which licensed or certified individuals may protect themselves when taking a verbal order from a physician
- List seven guidelines for understanding the medication order
- Understanding medication labels (prescription and non-prescription)
- Read and write the common medical abbreviations given in this unit
- Answer the review questions correctly

#### Unit 10

- Define the key terms listed in this unit
- Describe the legal implications for a person who prepares and administers medication

- State the six rights of proper drug administration
- List the essential medication guidelines
- Describe the universal precautions
- Describe the standard precautions
- List the guidelines that should be followed and precautions to be taken for the safe storage of medications in the physician's office
- List the emergency medications, supplies, and equipment that must be readily available
- List the data that should be recorded about drug administration
- Give the ethical considerations for work around drugs
- List the five actions that may constitute a medication error
- List the five steps to take in case a medication error occurs
- Answer the review questions correctly

#### Unit 11

- Define the key terms listed in this unit
- List several advantages and disadvantages of the oral route of drug administration
- Describe the measuring devices most commonly used when administering oral medications
- Administer oral medications
- State the guidelines that should be followed whenever it is necessary to crush a solid medications
- Perform an eye instillation
- Perform an ear instillation
- Describe the administration of nasal medications
- Describe a transdermal system
- Describe inhalation and give three uses of inhalation therapy
- State the implications for patient care when an inhaler is prescribed
- List the signs and symptoms of hypoxemia
- List the symptoms of oxygen toxicity
- Describe the methods used for oxygen delivery
- Describe the oxygen safety precautions
- Describe the administration of drugs by local application
- Answer the review questions correctly

#### Unit 12

- Define the key terms listed in this unit
- Describe single dose and multi dose vials and give the safety precautions for each
- Describe the component parts of a syringe
- Name the parts of a syringe that must be kept sterile during the preparation and administration of a parenteral medication
- Classify syringes as disposable, non-disposable, or as a combination of these two types
- Give the advantages of using a disposable syringe

- Explain how to prevent needle-stick injuries in health care setting
- Describe the Needle stick Safety and Prevention Act
- Describe various safety design devices
- Give the National Institute of Occupational Safety and Health's (NIOSH) recommendations for healthcare workers on how to protect themselves and their co-workers
- Correctly read the calibrated scales of 3-mL, 5-mL, tuberculin, and U-100 insulin syringe
- Describe the component parts of a needle
- Select an appropriate-size needle and syringe for the following types of injection: intramuscular, subcutaneous, and intradermal
- Name the diseases commonly transmitted by a contaminated syringe needle
- Dispose of used needles and syringes safely
- Demonstrate the procedure for handling a sterile syringe-needle unit, loading and unloading a Tubex injector, removing medication from a vial, removing medication from an ampule, mixing two medications in one syringe, and reconstituting a powder medication for administration
- Answer the review questions correctly

#### Unit 13

- Define the key terms listed in this unit
- Give three examples of parenteral routes of drug administration
- Give eight disadvantages (possible dangers and complications) associated with the administration of parenteral medications
- List the three basic guidelines for administering and injections
- Prepare a patient for an injection
- Demonstrate the proper procedure to be used when giving a subcutaneous, an intramuscular, an intradermal, and Z-track intramuscular injection
- Give the special considerations to be observed when administering insulin
- Describe noninsulin injectable medicines, given examples of how these medications work.
- Describe intravenous (IV) therapy and states some advantages and disadvantages of IV therapy
- Answer the review questions correctly

#### Unit 14

- Define the key terms listed in this unit
- Describe the reaction between allergens and IgE antibodies
- List the most common allergens that may cause allergy
- State the classic symptoms of allergy
- List the factors other than allergen that may trigger symptoms of allergy
- Describe allergic rhinitis (hay fever)
- List the most common causes of hay fever in the United States according to the American Academy of Allergy and Immunology
- Describe how physicians determine the diagnosis of allergy
- States the importance of patient history

- Describe the scratch (epicutaneous) or prick, patch, intradermal, laboratory, nasal smear, and sinus X-ray diagnostic allergy test
- Describe to the patients with allergies the treatment regimen that may be prescribed, including allergens avoidance, drug therapy, and immunotherapy
- Describe the medical assistant's responsibilities with regard to the administration of allergenic extracts
- Answer the review questions correctly

#### Unit 15

- Define the key terms listed in this unit.
- Describe infection
- List the danger signs of a serious infection.
- Describe ways people may minimize their risk of developing a serious infection.
- State why infections are generally more serious in older adults.
- List possible reasons why children who attend a day care center are more likely to contract ear infections, pneumonia, and meningitis.
- Complete the critical thinking questions and activities presented in this unit.
- List the characteristics of an effective antibiotic.
- Describe four adverse reactions that may occur with the administration of an antibiotic.
- Explain how the overuse of antibiotics has helped cause drug-resistant strains of bacteria.
- State the actions, uses, contraindications, adverse reactions, dosages, and routes for selected antibiotics.
- Give the implications for patient care with regard to selected antibiotics.
- Describe your role with regards to patient education.
- Complete the Spot Check on major antibiotic groupings.
- Describe antiseptics and disinfectants.
- State the substance, strength, action, and comments for selected antiseptics and disinfectants.
- Answer the review questions correctly.

#### Unit 16

- Define the key terms listed in this unit.
- State the actions, uses, contraindications, adverse reactions, dosages, routes, and implications for patient care of selected antifungal and antiviral agents.
- Describe the four general classes of antiretroviral agents.
- Describe highly active antiretroviral therapy (HAART)
- Describe zidovudine's role in the reduction of perinatal transmission of HIV.
- Describe the treatment regimen for AIDS in the older adult.
- Complete the critical thinking questions and activities presented in this unit.
- Differentiate between active and passive immunization.
- State the general recommendations of immunization.
- Describe the conditions when a live, attenuated virus vaccine should not be given.
- Define vaccine, toxoid, immune globulin, specific immune globulin, and antitoxin.
- State who should be immunized against vaccine-preventable diseases.

- Become familiar with the immunization schedule given in this unit.
- Complete the Spot Check on immunizations.
- Answer the review questions correctly.

#### Unit 17

- Define the key terms listed in this unit.
- List the signs and symptoms of breast cancer.
- List the symptoms of benign prostatic hyperplasia (BPH).
- Describe prostate cancer
- List the possible symptoms of prostate cancer.
- List the guidelines for care of the older adult with cancer.
- List the cancer screening test or procedure that an individual 50 or older should have.
- Give the suggested ways that one may communicate with a child about a parent's serious illness.
- Complete the critical thinking questions and activities presented in this unit.
- State when chemotherapy is the treatment of choice for cancer.
- List the normal cells that have the greatest sensitivity to destruction from antineoplastic agents.
- State the aim of chemotherapy.
- State who should prepare and administer antineoplastic agents.
- Describe examples of adverse reactions associated with antineoplastic agents.
- list and give the normal ranges of certain laboratory tests that are performed to establish a patient 's baseline data before initiation of chemotherapy.
- Explain the care of chemotherapy patients.
- Describe the classifications of antineoplastic agents.
- Describe other forms of treatment for cancer.
- Complete the Spot Check on the classifications of antineoplastic agents.
- Answer the review questions correctly.

#### Unit 18

- Define the key terms listed in this unit.
- Give the key recommendations for a healthy eating pattern as indicated in the 2015-2020
- Dietary Guidelines for Americans, Eighth Edition.
- Recognize MyPlate, the United States Department of Agriculture's new food icon, and state its purpose
- Describe the five basic food groups
- State when a body may require additional nutrients
- Describe factors that can affect an older adult's dietary regimen and eating pattern
- State the problem of overweight in children and adolescents.
- Describe food allergies, giving the symptoms, and most common causes.
- Describe food intolerance and list six causes.
- Complete the critical thinking questions and activities presented in this unit.
- Differentiate between fat –soluble and water-soluble vitamins.

- Give the functions, food sources, United States recommended daily allowance (USRDA), and indications of deficiency for selected vitamins and minerals.
- State the symptoms of hyper vitaminosis for vitamins A, D, and E.
- Describe the importance of cations and anions in electrolyte balance.
- Complete the Spot Check on selected vitamins and minerals
- Describe selected herbal preparations, possible uses, side effects/adverse reactions, and drug interactions, as described in Table 18-3 .
- Answer the review questions correctly.

#### Unit 19

- Define the key terms listed in this unit.
- Describe the four classifications of psychotropic drugs.
- Define stress.
- State five diseases or conditions that may be implicated in stress.
- Describe symptoms of anxiety.
- List possible stressors for older adults.
- Explain how stress, anxiety, or depression could affect a child.
- Complete the critical thinking questions and activities presented in this unit.
- State the actions, uses contraindications, adverse reactions, dosages, routes, and implications for patient care of selected antianxiety, antidepressive, antipsychotic, and antimanic agents.
- List the symptoms of marked elevation of blood pressure.
- List the foods and beverages a person should avoid when taking monoamine oxidase inhibitors.
- Complete the Spot Check on psychotropic agents.
- Answer the review questions correctly.

#### Unit 20

- Define the key terms listed in this unit.
- Describe problems that are associated with substance abuse.
- List the effects that alcohol has as a multisystem toxin and a central nervous system depressant.
- Be aware of some drugs that interact with alcohol.
- Complete the critical thinking questions and activities presented in this unit.
- Describe nicotine, club drugs, and inhalants as substances being abused.
- State the effects that amphetamines have on the body.
- Describe methamphetamine and how it affects the body.
- Describe cocaine as a central nervous system stimulant and how it is used as an abused substance
- Describe how narcotic analgesics are abused, and explain their effects on the body.
- Describe marijuana as an abused substance.
- Describe how phencyclidine (PCP) is an abused substance, and its illegal use.
- State that lysergic acid diethylamide (LSD) is a hallucinogenic agent, and describe its effects on the body.
- Describe prescription drug abuse and addiction.

- State the medical assistant's role in recognizing substance abuse and the action to take when substance abuse is suspected.
- List the warning signs of substance abuse in the workplace.
- Complete the Spot Check on interactions of selected drugs and alcohol.
- Answer the review questions correctly.

#### Unit 21

- Define the key terms listed in this unit.
- Describe the benefits and injuries associated with exercise.
- List the normal aging changes that can predispose older adults to falls.
- Explain why musculoskeletal injuries can be common in childhood.
- List ways that may be used to help prevent sports injuries during childhood.
- Complete the critical thinking questions and activities presented in this unit.
- State the actions, uses, contraindications, warnings, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for corticosteroids.
- State the usual anti-inflammatory dose, and adverse reactions of selected nonsteroidal anti-inflammatory agents.
- Describe disease-modifying antirheumatic drugs.
- Describe COX-2 inhibitors and give examples.
- Describe antitumor necrosis factor drugs.
- State the actions, uses, contraindications, adverse reactions, dosage and route, implications for patient care, and patient education for etanercept (Enbrel).
- State the actions, uses, contraindications, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for selected medications used to treat osteoporosis.
- Describe agents that are used to treat gout.
- State the actions, uses, types, usual dosage, adverse reactions, implications for patient care, patient education, and special considerations for selected skeletal-muscle relaxants.
- Complete the Spot Check on selected nonsteroidal anti-inflammatory drugs.
- Answer the review questions correctly.

#### Unit 22

- Define the key terms listed in this unit.
- Describe the digestive process.
- State the treatment regimen for an ulcer associated with the *Helicobacter pylori* bacteria.
- List the changes that occur in gastrointestinal functioning of older adults.
- State the signs and symptoms of gastrointestinal disorders in children.
- Complete the critical thinking questions and activities presented in this unit.
- State the actions, uses, contraindications, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for selected antiulcer agents.
- Describe the "step-up" or "step-wise" medical approach for treating patients with inflammatory bowel disease (IBD).
- Become familiar with the medications that may be used in patients with IBD.



- Explain the use of probiotics in the United States for gastrointestinal conditions.
- State the usage, classifications, actions, usual dosage, onset of action, patient education, and special considerations for laxatives.
- State the usual dosage, adverse reactions, and special considerations for antidiarrheal agents.
- State the usual dosage and adverse reactions of selected anthelmintics.
- State the usual dosage and adverse reactions of selected antiprotozoal agents.
- State the usage, contraindications, and dosage of apomorphine HCl.
- Complete the Spot Check on selected drugs used to treat ulcers.
- Answer the review questions correctly

#### Unit 23

- Define the key terms listed in this unit.
- State the function of the cardiovascular system.
- List the warning signs of a heart attack.
- List the established risk factors for heart disease.
- Explain why age is directly related to the development of heart disease.
- Explain why age complicates the treatment regimen for older adults.
- Describe two causes of congenital heart disease.
- Complete the critical thinking questions and activities presented in this unit.
- Describe three ways that drugs may affect heart action.
- State the action, digitalizing dose, and possible intoxication effect of digoxin (Lanoxin).
- Give the signs and symptoms of digitalis toxicity.
- State the actions, uses, contraindications, warnings, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for digitalis (digoxin), antihypertensive agents, anticoagulants, antiplatelet drugs, hematinic agents, agents used in treating megaloblastic anemia, and anti-hyperlipidemic agents.
- Describe hemostatic agents and their uses.
- Complete the Spot Check on selected drugs that are used to treat cardiovascular system disorders
- Answer the review questions correctly.

#### Unit 24

- Define the key terms listed in this unit.
- Describe respiration.
- Describe the causes of respiratory conditions and/or diseases.
- Describe the various drug classifications that are used for respiratory system conditions and diseases.
- Identify selected drugs according to each described classification.
- Understand the actions, uses, contraindications, warnings, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for selected drugs that affect the respiratory system.
- Describe tuberculosis, listing the symptoms, diagnosis, and treatment regimen.
- Explain why there may be an increased risk of developing tuberculosis in older adults.

- Explain why a child may be at greater risk of contracting tuberculosis.
- Complete the critical thinking questions and activities presented in this unit.
- Complete the Spot Check on recommended children's dosages for selected anti-tuberculosis drugs.
- Answer the review questions correctly.

#### Unit 25

- Define the key terms listed in this unit.
- State two vital functions of the kidneys.
- State the actions, uses, contraindications, adverse reactions, dosage and route patient care, patient education, and special considerations for thiazide, loop, osmotic, and carbonic anhydrase inhibitor diuretics, sulfonamides, and urinary
- Describe the symptoms, diagnosis, and treatment regimen for cystitis.
- Describe interstitial cystitis.
- Describe the effect of the aging process on the kidneys.
- Explain why it is important to assess an older adult's voiding history and medic
- State the signs of nephrotoxicity.
- Describe the signs and symptoms of a urinary tract infection in children.
- Explain the treatment regimen for a child with a urinary tract infection.
- Complete the critical thinking questions and activities presented in this unit.
- Complete the Spot Check on selected drugs used to treat urinary tract infection
- State the action, usual dosage, and adverse reactions of selected drugs used f
- Identify selected agents that discolor urine.
- Answer the review questions correctly.

#### Unit 26

- Define the key terms listed in this unit.
- Give the location and functions of the primary endocrine glands.
- State the actions, uses, contraindications, adverse reactions, dosage and re patient care, patient education, and special considerations for thyroid horn hormones, and insulin.
- Describe diabetes mellitus.
- Contrast the signs and symptoms of hypoglycemia and hyperglycemia.
- Describe some risk factors associated with older adults developing diabetes:
- Explain why drug therapy may present special problems for older adults.
- Explain why the management of diabetes mellitus during childhood is most difficult
- Describe some of the factors associated with the management of diabetes
- Complete the critical thinking questions and activities presented in the un
- List the types of insulin preparations according to rapid-acting, short-acting, long acting.
- Describe the listed classes of oral antidiabetic (hypoglycemic) agents and
- State why hyperglycemic agents are used and give examples.
- Complete the Spot Check on insulin.
- Answer the review questions correctly.

#### Unit 27

- Define the key terms listed in this unit.
- Describe the nervous system.
- Define pain.
- Explain the special considerations for older adults with pain.
- Give some indications of pain in neonates, infants, toddlers, and older
- Explain various techniques for assessing pain in children.
- Complete the critical thinking questions and activities presented in this unit
- State the actions, uses, contraindications, warnings, adverse reactions, implications for patient care, patient education, and special considerations for anti-Parkinsonian drugs, and anticonvulsants.
- State the actions, usual dosage, and adverse reactions of selected anal. narcotic antagonist (naloxone hydrochloride).
- Complete the Spot Check on selected medications used to treat pain.
- Give examples of benzodiazepines that are effective sedative-hypnotics
- State the schedule, usual sedative dose, and usual hypnotic dose of selected sedative-hypnotic drugs.
- Describe Alzheimer's disease (AD).
- Describe anesthetic drugs as local or general acting.
- State three uses of ophthalmic drugs.
- State the classification, usual dosage, and adverse reactions of selected drugs used to treat glaucoma.
- State four uses of mydriatic drugs.
- State the classification, usual dosage, and adverse reactions of selected mydriatic drugs.
- State the uses, usual dosage, and adverse reactions of selected drugs for
- Vertigo, motion sickness, and vomiting.
- Answer the review questions correctly.

#### Unit 28

- Define the key terms listed in this unit.
- State the actions, uses, contraindications, warnings, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for estrogens.
- State the actions, uses, contraindications, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for progesterone.
- Give the benefits and risks of hormone replacement therapy.
- List several alternative treatment options for hormone replacement therapy.
- Describe how oral contraceptives, when used as directed, prevent the occurrence of pregnancy.
- List the adverse reactions of oral contraceptives.
- List the conditions in which taking an oral contraceptive could be dangerous.
- State the actions, uses, contraindications, adverse reactions, dosage and route, implications for patient care, patient education, and special considerations for testosterone.
- Describe erectile dysfunction.

- State the action, uses, contraindications, cautions, adverse reactions, dosage and route, and patient education for Viagra (sildenafil citrate).
- Describe the drugs that may be used during labor and delivery.
- State the uses, usual dosage, and adverse reactions of selected uterine stimulants.
- Give the signs and symptoms of specific sexually transmitted diseases (STDs).
- Complete the critical thinking questions and activities presented in this unit.
- Complete the Spot Check on sexually transmitted diseases.
- Answer the review questions correctly.