



## **Course Syllabus**

### **MDCA 1448 – Pharmacology and Medication Administration**

**Catalog Description:** Instruction in concepts and application of pharmacological principles. 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.

**Lecture hours = 4, Lab hours = 1**

**Prerequisites:** Medical Assistant one-year Certificate

**Semester Credit Hours: 4**

**Lecture Hours per Week: 4**

**Lab Hours per Week: 1**

**Contact Hours per Semester: 80**

**State Approval Code:** CIP 51.0801

**Instructional Goals and Purposes:** The purpose of this course is to prepare students for the pharmacological portion of their certification exam.

#### **Learning Outcomes:**

After studying all materials and resources presented in the course, the student will be able to:

1. Prepare, administer, and document oral and percutaneous medications; calculate drug dosages for administration by standard routes for adult and pediatric patients;
2. Demonstrate inventory handling and storage; and
3. Adhere to governmental health care guidelines and biohazard protocols.

#### **Specific Course Objectives (includes SCANS):**

After studying all materials and resources presented in the course, the student will be able to:

1. **Drug Fundamentals (1 ai, 1 bi, bvi)**
  - a. Explain the differences between generic/trade/chemical names of drugs
  - b. Compare and contrast over-the-counter, prescription, and controlled substances
2. **Math of Medications/Calculating Dosages (1 bii, bvi, 2 biii)**
  - a. Explain steps to add/subtract, multiply/divide fractions and decimals
  - b. Identify various methods to calculate adult and pediatric dosages
  - c. Perform calculations
3. **Role of the Medical Assistant (1 aii, 2 ci)**
  - a. State the Six Rights of medication administration
  - b. Describe proper documentation practices
  - c. Describe ways to decrease medication errors.
4. **How Drugs Work (1 ai, 2 ci)**
  - a. Differentiate between local and systemic effects of drugs

- a. Describe the roles of absorption, distribution, metabolism, and excretion
  - b. Define synergism and antagonism.
- 5. **Commonly Prescribed Drugs (1 aiv, 1 bv)**
  - a. Explain how drugs are classified
  - b. List uses of drugs for the various body systems and how they work.
- 6. **Supplements and Immunizations (1 ai, 2 bi, biii)**
  - a. Differentiate between fat-soluble and water-soluble vitamins
  - b. Identify the diseases for which common immunizations are administered
  - c. Explain the body's need for vitamins and minerals
- 7. **Abuse and Misuse of Substances (1 bi, bii 2 bii)**
  - a. Identify the signs and symptoms of abuse
  - b. Explain how prescription drugs can be abused
  - c. State the dangers of secondhand smoke
- 8. **Administration of Medications (1 ai, 1aii, 1bii, 1 ci, 2 biii)**
  - a. Locate important information on a medication label
  - b. Recall/demonstrate the steps to safely administer an oral or percutaneous medication
  - c. Apply the principles of aseptic technique and infection control.

### **Course Content:**

A general description of lecture/discussion topics included in this course are listed in the Learning Objectives / Specific Course Objectives sections of this syllabus.

Students in all sections of this course will be required to do the following:

1. Read assigned chapters
2. Answer assigned chapter review questions
3. Look up and categorize drug information
4. Perform mathematic equations/dosage calculations
5. Properly administer medications orally, percutaneously (simulated)
6. Demonstrate injection techniques satisfactorily (simulated)
7. Complete Chapter Exams
8. Complete Final Exam

**Methods of Instruction/Course Format/Delivery:** Students are expected to demonstrate basic competency in reading, writing, oral communication, math, and computer skills, Students are expected to be an active learning participant by assuming accountability in preparing for each class by completing required readings and/or other learning activities as listed in each unit assignment. Proficiency may be measured by examination scores, oral discussions and/or presentations, case studies and internet research activities.

Students should use the Email within Canvas to communicate with the instructor. Using Canvas email gives you access to the instructor and other classmates without having to remember or type email addresses - you must select a name from the list. If you are not able to contact me using email in Canvas, you may use my Panola College email address, contact me by telephone, or stop by my office. I attempt to respond to all email within 24 hours. Please always include a subject line and your name in your email.

### **Major Assignments / Assessments:**

The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

#### **Assignments**

1. Read each assigned chapter (Chapters 1-21 & 23)
2. Chapter Review questions for each assigned chapter
3. Drug Cards
4. Dosage calculations practice/quizzes
5. Drug label quiz

6. Research Summary/Presentation
7. Medication administration practice/procedures

**Assessment(s):**

1. Chapter Review responses
2. Class participation/discussions
3. Exams (over chapters 1-21, & 23)
4. Dosage calculation Exam
5. Medication administration procedures demonstrated/verbalized by student
6. Research Presentation
7. Final Exam (comprehensive)

**Course Grade:**

The grading scale for this course is as follows:

- Attendance-5%
- Assignments – 35%
- Exams – 40%
- Final Exam 20%

**Texts, Materials, and Supplies:**

- Understanding Pharmacology for Health Professionals Fifth Edition, Copyright 2016
- Supplies are provided in lab

**Required Readings:**

- Understanding Pharmacology for Health Professionals Fifth Edition, Copyright 2016
- Any additional assigned reading

**Recommended Readings:**

- Medical Dictionary
- MA Notes (pocket reference)
- PDR.net

**Other:**

- For current texts and materials, use the following link to access bookstore listings: <http://www.panolacollegestore.com>
- For testing services, use the following link: <http://www.panola.edu/elearning/testing.html>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Administration Building or go to <http://www.panola.edu/student-success/disability-support-services/> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <http://www.panola.edu/student-success/documents/pathfinder.pdf>

## SCANS CRITERIA

- 1) **Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.**
  - a) **Basic Skills:** A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
    - i) Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
    - ii) Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
    - iii) Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
    - iv) Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
    - v) Speaking: Organize ideas and communicate orally.
  - b) **Thinking Skills:** A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
    - i) Creative Thinking: generate new ideas.
    - ii) Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
    - iii) Problem Solving: recognize problems and devise and implement plan of action.
    - iv) Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
    - v) Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
    - vi) Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
  - c) **Personal Qualities:** A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.
    - i) Responsibility: exert a high level of effort and persevere toward goal attainment.
    - ii) Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
    - iii) Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
    - iv) Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
    - v) Integrity and Honesty: choose ethical courses of action.
- 2) **Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.**
  - a) **Resources:** A worker must identify, organize, plan, and allocate resources effectively.
    - i) Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
    - ii) Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
    - iii) Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision time line chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
  - b) **Interpersonal Skills:** A worker must work with others effectively.
    - i) Participate as a Member of a Team: contribute to group effort.
    - ii) Teach Others New Skills.
    - iii) Serve Clients/Customers: work to satisfy customer's expectations.

- iv) **Exercise Leadership:** communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
- v) **Negotiate:** work toward agreements involving exchange of resources, resolve divergent interests.
- vi) **Work with Diversity:** work well with men and women from diverse backgrounds.

Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.

- c) **Information:** A worker must be able to acquire and use information.

- i) **Acquire and Evaluate Information.**
- ii) **Organize and Maintain Information.**
- iii) **Interpret and Communicate Information.**
- iv) **Use Computers to Process Information.**

Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer data bases to research a report; use a computer spreadsheet to develop a budget.

- d) **Systems:** A worker must understand complex interrelationships.

- i) **Understand Systems:** know how social, organizational, and technological systems work and operate effectively with them.
- ii) **Monitor and Correct Performance:** distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.
- iii) **Improve or Design Systems:** suggest modifications to existing systems and develop new or alternative systems to improve performance.

Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.

- e) **Technology:** A worker must be able to work with a variety of technologies.

- i) **Select Technology:** choose procedures, tools or equipment including computers and related technologies.
- ii) **Apply Technologies to Task:** understand overall intent and proper procedures for setup and operation of equipment.
- iii) **Maintain and Troubleshoot Equipment:** Prevent, identify, or solve problems with equipment, including computers and other technologies.

Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.