Course Syllabus

MDCA 1448 – Pharmacology and Medication Administration

Revision Date: August 18, 2015

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 = 3; Lab hours = 1

Pre-requisites: Medical Assisting 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:

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 Outcomes (includes SCANS):

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

1. Explain, implement, and acquire training regarding mandatory safety measures for patients, staff, and visitors by using case study information about the distribution of medications. (Scans 1A i,ii,iii,iv,v)
2. Discuss measures to promote quality care in a safe environment for patients, staff, and families related to administering medications. (Scans 2C i,ii,iii,iv,v)
3. Describe what pharmacological concepts can be utilized to promote health care advocacy. (Scans 2C i,ii,iii,iv,v)
4. Explore the technological advances that have and will improve pharmacology issues in improving patient outcomes. (Scans 1A i,ii,iii,iv,v)
5. Administer oral and percutaneous medications using the six rights in a simulated situation (IB ii, iii, iv, v)
Course Content/Objectives:
After studying all materials and resources presented in the course, the student will be able to:

I. Drug Fundamentals
   - Explain the differences between generic/trade/chemical names of drugs
   - Demonstrate knowledge of federal and state health care legislation and regulations
   - Determine needs for documentation and reporting
   - Compare and contrast over-the-counter, prescription, and controlled substance
   - Explain the differences between parenteral and enteral medications
   - Identify two written resources of drug information

II. The Role of the Medical Assistant
   - Name two legal issues concerning medical assistants administering medicine
   - Identify professional records regarding medication administration that must be properly maintained
   - State the six rights of medication administration
   - Describe ways to decrease the possibility of medication errors
   - Read and record medication orders
   - Correctly document the administration of drugs
   - Perform within legal and ethical boundaries
   - Monitor legislation related to current health care issues and practices
   - Use methods of quality control

III. How Drugs Work
   - Differentiate between local and systemic effects of drugs
   - Describe the roles of absorption, distribution, metabolism, and excretion in treating patients with medication
   - List four reasons that a drug might be contraindicated in a specific patient
   - Identify symptoms of anaphylaxis and angioedema
   - Define synergism and antagonism
   - Explain interactions that can occur between drugs and foods
   - List four factors that influence a drug’s effects on the body
   - Practice standard precautions
   - Recognize emergencies

IV. Commonly Prescribed Drugs
   - Explain how drugs are classified
   - Identify the uses for antibiotics and discuss the therapeutic actions of these drugs
   - Recognize the conditions topical drugs are commonly used to treat and explain how these medications are thought to work
   - List the uses for analgesics and antipyretics and describe how these drugs work
   - Identify the various conditions cardiac drugs are used to treat and therapeutic actions of each
   - List the uses for respiratory medications and explain the various ways in which these medications work
   - Recognize the indications for digestive drugs and discuss how these drugs work
   - Explain why urinary drugs may be used and identify the therapeutic actions of these drugs
   - Discuss the main use for diuretic drugs and how these drugs accomplish their purpose
   - Identify the uses for nervous system medications and recognize where these drugs work in the body
V. Supplements and Immunization/Ways to Protect Our Health
- Differentiate between fat-soluble and water-soluble vitamins
- Explain the body’s need for vitamins and natural sources
- List uses for commonly used herbal preparations
- Identify safety issues with complementary herbal therapy
- Identify diseases for which common immunizations are administered
- Identify the most frequent adverse reactions of the vaccines usually given

VI. Abuse and Misuse of Substances
- List the various costs of substance abuse
- Identify the signs and symptoms of abuse
- Explain how prescription drugs can be abused
- Describe the special problems of abuse in older adults
- Describe the special problems of abuse in health care workers
- Explain how legal substances such as caffeine, nicotine, and alcohol can be addictive
- State the dangers of secondhand smoke
- Identify problems and symptoms related to the use of marijuana, cocaine, opiates, hallucinogens, and club drugs
- Describe the symptoms and abuse of household substances

VII. Administration of Medications
- Locate important information on a medication label
- Recall the steps to safely administer an oral medication
- Describe how to select a site and administer a subcutaneous injection
- Explain how to select a site and administer an intradermal injection
- Describe how to select a site and give an intramuscular injection on an adult and a child
- Explain the criteria in the selection of a needle gauge and length
- Describe reconstitution of a powder to an injectable liquid
- List steps in removing medication from a vial and an ampule
- Compare the use of transdermal and topical medications
- Apply principles of aseptic technique and infection control
- Prepare and administer oral and parenteral medications as directed by physician

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.

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<thead>
<tr>
<th>Assessment:</th>
<th>Course Grade:</th>
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<tbody>
<tr>
<td>The following system will be utilized to calculate your final course grade:</td>
<td>Standard College grading to be used:</td>
</tr>
<tr>
<td>Assignments 30%</td>
<td>100-90 = A</td>
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<tr>
<td>Exams 50%</td>
<td>89-80 = B</td>
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<tr>
<td>Final Exam 20%</td>
<td>79-70 = C</td>
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<tr>
<td>All assignments will have a due date. NO LATE WORK WILL BE ACCEPTED.</td>
<td>***** (Minimum “C” to pass this course)******</td>
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<td>59 and below F</td>
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Texts, Materials, and Supplies:

Required Textbook/References:

“Medical Assisting Made Incredibly Easy: Pharmacology”, Holly, J. Lippincott, Williams, and Wilkins. 2009


Recommended:

Medical Dictionary

Other:

- For current texts and materials, use the following link to access bookstore listings: [http://www.panolacollegestore.com](http://www.panolacollegestore.com)
- For testing services, use the following link: [http://www.panola.edu/elearning/testing.html](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/](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.

PROFESSIONALISM: Success in one’s career is almost as dependent on professional behavior as on one’s academic knowledge and abilities. Students are expected to exhibit professional behavior in the classroom and in all activities associated with this course. Professional behavior includes:

- **Attends Class and is Punctual** - The student attends every class period, arrives on time for class activities and informs the instructor in a timely manner of unavoidable situations that cause the student to be late or miss class. *If you have more than 5 absences, you will be dropped from the class*
  - If you miss class, please talk to a fellow class member, email me or make an appointment to come see me. I cannot take class time to repeat what you missed.
  - THERE ARE NO MAKE-UP EXAMS!!! Except in extreme cases of sickness (contagion or hospitalization, etc.) or death of an immediate family member (father, mother, sibling, spouse, or child) with documentation.

- **Dependable** - The student meets assignment deadlines and follows through to completion of responsibilities.
  - You are responsible for what goes on in class EVEN if you are not here. Check your calendar and be prepared when you return to class
  - Papers are due at the beginning of class on the day they are assigned. NO LATE PAPERS WILL BE ACCEPTED! Technical difficulties (printer didn’t work, ran out of ink, couldn’t open file, etc.) are not valid excuses. Neither is forgetting your paper or forgetting to print it. Do not come to class late because you were printing your paper, and do not ask to leave early to print it.
  - *Paper copies* are to be turned in at beginning of class ONLY. Assume that emailing assignments is not allowed.
• **Effective interpersonal and team skills** - The student relates well to people, shows respect for others, deals tactfully and effectively with others, influences as opposed to directs, provides constructive criticism without alienating others, negotiates or mediates when appropriate, exhibits openness to new ideas, and demonstrates a positive attitude.

• **Effective communication skills** - The student listens, speaks using correct grammar and without excess fillers, (e.g. *um, you know, like*).

• **Ethical conduct** - The student maintains honesty, integrity, and confidentiality of patient, provider, fellow student and college information.

• **Electronic Devices** – ABSOLUTELY no personal electronic devices of any kind are allowed in the classroom. This includes cell phones, beepers, pagers and laptops.

All assignments will have a due date. NO LATE WORK WILL BE ACCEPTED.

**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/Customer: 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.