

# Dakota County Technical College

## MDAS 1702: Pharmacology and Math for Medical Assistants

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The objective of this course is to introduce the study of medications and their uses in the ambulatory care setting. Basic mathematics in relation to calculation of dosages will be taught. Medical Assistant students will learn the techniques needed for administration of medication. Pre-requisite: Concurrent with MDAS 1231

**B. COURSE EFFECTIVE DATES:** 08/27/2012 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

## **D. LEARNING OUTCOMES (General)**

1. Define pharmacology
2. identify classifications of medications including indications for use, desired effects, side effects and adverse reactions\* 1.C.11
3. Verify the rules of medication administration\* Identify both abbreviations and symbols used in calculating medication dosages 1.P.4
4. Select proper sites for parenteral administration of medication\* 1.P.5
5. Administer oral medications\* 1.P.6
6. Administer parenteral (excluding IV) medication\* 1.P.7
7. Demonstrate knowledge of basic math computations\*
  - a. work with Arabic and Roman numerals
  - b. express common fractions and decimal fractions as percents
  - c. express a ratio as a quotient, as a fraction and as a decimal 11.C.1
8. Apply mathematical computations to solve equations\*
  - a. add, subtract, multiply and divide fractions and mixed numbers
  - b. add, subtract, multiply and divide decimals
  - c. solve for x 11.C.2
9. Define basic units of measurement systems in the metric system and the household system\* 11.C.3
10. Convert among measurement systems\*
  - a. use the proportional method to convert household measures
  - b. change a temperature reading from Celsius to Fahrenheit
  - c. change a temperature reading from Fahrenheit to Celsius
  - d. calculate dosage according to kilogram of body weight
  - e. calculate dosages by the proportional or formula method\* 11.C.4
11. Identify both abbreviations and symbols used in calculating medication dosages\* 11.C.5
12. Calculate proper doses of medication for administration\* 11.P.1
13. Identify CDC regulations that impact healthcare practices\* 11.C.7
14. Complete an incident report related to an error in patient care "" X.P.7
15. Discuss drug distribution systems
16. Use drug reference resources\*
17. Practice standard precautions\*
18. Follow procedure for working with controlled substances\*
19. Describe protocol for reporting medication errors\*
20. Explain considerations in giving meds to pediatric, pregnant, breastfeeding, or elderly patients\*
21. Describe equipment for parenteral administration of medication
22. Describe the relationship between anatomy and physiology of all body systems and medications used for treatment of each;
  - a. to treat infections
  - b. insulin and oral hypoglycemic agents\*
  - c. hormones and steroids
  - d. immunologic agents
  - e. anticoagulant therapy
  - f. anti-inflammatory, analgesic, and narcotic agents
  - g. controlled substances
  - h. allergy medication
23. Describe the administration of topical medications\*
24. Demonstrate eye medication administration
25. Demonstrate ear medication administration
26. Discuss facts about over-the-counter medications
27. Describe responsibility for patient instruction\*

28. Adhere to schedule of medication administration
29. Maintain medication and immunization records
30. 30. Discuss FDA and DEA regulations
31. Describe the process to follow if an error is made in patient care\*
32. Engage classmates with a presentation on topic related to pharmacology not discussed in class

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted