

El Paso Community College
Syllabus
Part II
Official Course Description

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| SUBJECT AREA | <u>Medical Assisting Technology</u> |
| COURSE RUBRIC AND NUMBER | <u>MDCA 1448</u> |
| COURSE TITLE | <u>Pharmacology and Administration of Medications</u> |
| COURSE CREDIT HOURS | <u>4 3 :</u> <u>3</u> Credits Lec Lab |

I. 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. Lab coat is required for this course and will not be provided by the instructor. A grade of "C" or better is required in this course to take the next course. **Prerequisites: MDCA 1305 and MDCA 1313 and MDCA 1409. Corequisite: MDCA 1417. (3:3). Lab fee.**

II. Course Objectives

The lecture and lab are two distinct classes each with their own grades assigned and must be taken during the same semester. The lecture provides instruction in pharmacology concepts while the lab provides the application of pharmacological principles. The successful student will be able to identify drug classifications, principles and procedures of medication administration, convert mathematical systems into dosage calculations, and list the medico-legal responsibilities of the medical assistant. The student will be able to identify the most commonly used medications and state their actions, uses, contra-indications, warnings, adverse reactions, dosage and route of administration, and implications for patient care.

A. Unit I. Introduction to Pharmacology Applications and Principles

1. Incorporate proper medical terminology.
2. Greet patients.
3. Take messages.
4. Call in prescriptions.
5. Read charts.
6. Utilize medical office software.
7. Assess and verify patient allergies.
8. Listen and respond appropriately to patient concerns.
9. Take history and physical.
10. Maintain confidentiality.
11. Verify current medications.
12. Verify shot record.
13. Maintain immunization logs.
14. Document medications.
15. Document immunization card.

16. Document non-compliance.
17. Navigate Immtrac system registry.

B. Unit II. Drug Classifications

1. State the classic symptoms of allergy and possible treatment regimens.
2. Describe these diagnostic allergy tests: scratch, patch, intradermal, Laboratory, nasal smears, and sinus x-rays.
3. Describe the various modes of transmission of pathogenic agents and list the danger signs of a serious infection.
4. List the characteristics of a good antibiotic and describe three adverse reactions that may occur with the administration of an antibiotic.
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6. List nine facts about HIV in babies and children, and list the signs and symptoms of AIDS in the older adult.
7. Differentiate between active and passive immunization.
8. Define vaccine, toxoid, immune globulin, specific immune globulin, and antitoxin.
9. List the signs and symptoms of breast cancer, prostate cancer, and benign prostatic hyperplasia.
10. State the aim of chemotherapy and when chemotherapy is the treatment of choice for cancer.
11. List and give the normal ranges of certain Laboratory tests that are performed to establish a patients' baseline data before initiation of chemotherapy.
12. List the six food groups that make up the "Food Guide Pyramid".
13. Differentiate between fat soluble and water soluble vitamins
14. Give the functions, food sources, USRDA, and indications of deficiency of selected vitamins, minerals, and herbs.
15. Describe the four classifications of psychotropic drugs.
16. State five diseases/conditions that may be implicated in stress.
17. Explain why the rate of alcoholism is expected to increase in the older population. Then list the effects that alcohol has as a multi-symptom toxin and a central nervous system depressant and psychotropic drug.
18. State the onset of action, peak action, and duration of action, and describe the appearances of selected insulin preparations according to rapid-acting, intermediate-acting, or long-acting.

C. Unit III. Principles and Procedures of Medication Administration

1. Prepare and administer injections.
2. Observe patient responses to treatment and drugs.
3. Maintain inventory of sample medications.
4. Observe Universal Precautions.
5. Apply OSHA regulations.
6. Employ preventive measures.
7. Maintain facilities to prevent slips, trips, and falls.
8. Document patient instructions, e.g., do not drive.
9. Report incidents, e.g., needle sticks, blood.
10. Maintain security of medicine cabinets.
11. Maintain controlled substances prescription log.

D. Unit IV. Mathematical Systems and Conversions

1. Express a fraction as a simple, compound, complex, proper, or improper fraction.
2. Add, subtract, multiply, and divide fractions, mixed numbers, decimals, and percents.

3. Express common fractions and decimal fractions as percents and percents as common fractions and decimal fractions.
4. Express a ratio as a quotient, as a fraction, and as a decimal.
5. Name the four terms of a proportion and solve for X to prove your answer.
6. Name the fundamental units and seven common prefixes used in the metric system.
7. Write the abbreviations and metric equivalents for length, volume, mass, and weight.
8. Name the metric equivalents that are most frequently used in the medical field.
9. Calculate dosage according to kilograms of body weight.
10. List five factors that may vary or alter the size of a drop.
11. Write the abbreviations of the household measurements and the apothecaries' measurements.
12. Use the proportional method to convert household measures and apothecaries' measurements.
13. Change a temperature reading from Celsius to Fahrenheit and from Fahrenheit to Celsius.
14. Name two measures used to determine the amount of medication to be administered and give an example of each measure.
15. List six medications that are measured in units.
16. Calculate adult insulin dosages by the proportional or formula method and explain why exact dosage of insulin is so important.
17. State the guidelines for administering medications to a pediatric patient.
18. Calculate children's dosages according to body surface area (BSA) and according to kilogram of body weight.

E. Unit V. Effects of Medications on Body System Disorders

1. List and describe each body system by location and identify the function of the major organs located within the system.
2. Explain the terms associated with each body system.
3. State the actions, uses, contraindications, warnings, adverse reactions, dosage and route, implications for patient care, patient teaching, and special considerations for the most commonly used medications, and name which body system disorder they involve.
4. Explain the considerations of age, weight, and sex as they relate to the development of disease (such as heart disease) and the common complications to a treatment regimen.
5. State the warning signs, symptoms, risk factors, illnesses or injuries, and congenital disorders associated with each body system

III. THECB Learning Outcomes (WECM)

Upon completing this course, the student will be able to:

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

IV. Evaluation

⇒ 4 written exams worth 100 points each = 400 points
(see calendar for Chapters covered on each exam)

⇒ Professional and ethical classroom behavior = 50 points
(See description of expected behavior under "Additional Information")

- Total of 450 points for the lecture grade

The lab grade will be determined as follows:

⇒ Competency Sheets = 200 points

- Practical (exam topic: demonstrating injections; use of syringes and needles; and universal precautions) = 100 points

- ⇒ Unannounced Quizzes = 100 points
- ⇒ Professional and ethical classroom behavior = 50 points
- ⇒ The final exam is a practical exam
 - Total of 450 points for the lab grade.
 - FOR AN OVERALL OF 900 POINTS

KEY (used to Determine Grade)

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| 810-900 points | = A (90-100%) |
| 720-809 points | = B (80-89%) |
| 630-719 points | = C (70-79%) |
| 629 or less points | = F* |

***A grade of “F” will need to be repeated for all Health Occupation Classes in order to graduate.**
Rounding off of grades: Each grade will initially be determined in decimals to the tenths. Grades will only be recorded in whole numbers. The guide used will be to round .1 to .4 to the lower whole number, and .5 through .9 are raised to the next whole number. Example: If a student earns 87.4 the grade will be reflected as 87%. If the student earns 87.6 the grade is rounded to 88%. No decimals will be shown on the grade scanners.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.