



**Medical Assistant Program
Coleman College for Health Sciences**

**MDC A1448 – Pharmacology and Administration of
Medications**

CRN: 41477– Spring 2015

Coleman College – CHSC Room 466 | 8:00 – 10:00 a.m. lecture

CHSC Room 271 | 10:30 – 2:30 p.m. lab | Friday (16 Weeks Spring)

2 hour lecture course/ 4 hours lab / 96 contact hours per semester/ 16 weeks

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Office location and hours: The Medical Assistant Program is located on the fourth floor in Suite 434. My office is room 431. The main number for the program is 713-718-7365. My office hours are from 2:00 -4:00 pm Wednesday and Thursday. Your progress is important to me. Please feel free to come by my office to discuss your concerns or related problems. Individual/group tutoring is available by appointment. If you are not free during these hours, you may arrange an alternate meeting with me. You may schedule the time with the administrative assistant.

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.

None

To provide an introduction to pharmacology that gives students an in-depth knowledge of medications that is used on a day-to-day basis in the ambulatory care setting. Students will also acquire the skills to transfer this knowledge to the physician's office.

The student will be able to:

1. Correctly perform injections by intramuscular, intradermal, and subcutaneous routes.
2. Correctly calculate drug dosages for administration by standard routes for adult and pediatric patients
3. Correctly create and maintain medico-legal documents relevant to drug administration, handling and storage
4. Adhere to current OSHA standards and biohazard protocols.

Objectives:

Students will:

1. 1. Perform injections by intramuscular, intradermal and subcutaneous routes safely and accurately
1. 2. Discuss the appropriate 3 + 7 rules of medication administration and the relationship to oral and parenteral
2. 1. Calculate drug dosages for administration by standard routes
2. 2. Prepare proper dosages of medication for administration
3. 1. Create and maintain a medical record with accurate documentation
4. 1. Discuss infection control procedures and describe Standard Precautions.

The method of measurement for the objectives/outcomes will be through class participation, skill competency demonstration, online testing, written tests and quizzes.

Credit: 4 (3 lecture, 3 lab)

MDCA 1448- 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's course purpose.

SCANS COMPETENCIES:

The Secretary's Commission on achieving Necessary Skills (SCANS), composed of representatives from education, business, labor and state government, was established on June, 1991 by the U.S. Department of Labor. It was charged with determining what skills needed to enter the workforce and whether or not American schools produce competent graduates. The MDCA 1448 course meets the SCANS requirements.

1. Reading- L o c a t e s understands and interprets written communication in prose and in documents. (I.e. graphs, manuals, filing, schedule, prescription, labeling and physician orders)
2. Writing- C o m m u n i c a t e thoughts, ideas, information, and messages in writing. (Memo, memorandum, transcript, medical records)
3. Arithmetic or Mathematics- C a l c u l a t e s dosage schedule and drug dosages.
4. Speaking and Listening- R e c e i v e s, attends to, interprets, and responds to verbal messages and other cues to help the patient, other student, physician and instructor when appropriate. Ask questions when information's are unclear. Participate in questions and answer portions of the lecture.

Acknowledges, advice, and report unsafe conditions or problems to the instructor or other students.
Educates and orient patients regarding office policies and procedures.
Manage telephone technique properly.

5. Thinking Skills- Use efficient learning techniques to acquire and apply new knowledge and skills with each procedure done.
6. Personal Qualities- Takes responsibility by doing his/her own work.
Exhibits honesty by not cheating on exams or homework assignments.
Treat all fellow students and patient/client with respect and dignity.
Sets personal goals, monitors progress of patient and of the program while exhibiting self-control.

CAHEP 2008 Standards Foundations for Clinical Practice

I. C. Cognitive (Knowledge Base) I

Anatomy & Physiology

11. Identify the classifications of medications, including desired effects, side effects and adverse reactions
12. Describe the relationship between anatomy and physiology of all body systems and medications used for treatment in each.

II. Applied Mathematics

1. Demonstrate knowledge of basic math computations
2. Apply mathematical computation to solve equations
3. Identify measurement systems
4. Define basic units of measurement in metric, apothecary and household systems
5. Convert among measurement systems
6. Identify both abbreviations and symbols used in calculating medication dosages.

Pharmacology MDCA 1448

Reading Assignment

Calendars

Lecture times 8:00 a.m. – 10:00 a.m.

Spring 6152/2015

REQUIRED TEXTBOOK: Pharmacology: Principles & Application A Work text for Allied Health Professionals by
Eugenia M. Fulcher, RN, BSN, MEd, CMA, Cathy Dubeansky Soto, MBA, CMA & Robert M. Fulcher, BS, BSPH, RPh.
3rd edition . 2011. W.B. Saunders Company

Date	Lecture/Exam	Chapter Topics	Assignment
01/16/2015	1 Introduction of peers/ course	1. Introduction to Pharmacology and its Legal and Ethical Aspects 2. Basics of Pharmacology 3. Drug Information and Drug forms	Chapters 1-3 Pages 2 – 39 Workbook completion chapters 2-3
01/23/2015	2	4. Understanding Drug Dosages for Special Populations 5. Reading & Interpreting Medication Labels & Orders and Documenting Appropriately	Chapters 4-5 Chapters 4 &5 workbook completion
01/30/2015	3	6. Measurement and their equivalents 7. Converting between Systems 8. Calculating Doses of Non-parenteral Medication 9. Calculating doses of Parenteral Medication	Chapters 7-10 Complete workbook exercises for chapters 7- 10
02/06/2015	4	11. Safety & Quality Assurances 12. Enteral Route 13. Percutaneous Route 14. Parenteral Route	Chapters 11-14 Complete workbook sections 11-14
02/13/2015	5 Exam 1 chapters 1-10 Lab A 10:00 a.m. – 12:00 a.m.	15. Analgesics and Antipyretics 16. Immunization and Immune system 17. Antimicrobials, Antifungals, and Antivirals	Chapters 15-17 Complete workbook sections 15-17

02/20/2015	6	18. Antineoplastic Agents 19. Nutritional Supplements and Alternative Medicines	Chapters 18-19 Workbook completions chapters 18-19
02/27/2015	7 Midterm Skills Midterm review	19. Endocrine System 20. Eyes & Ears Disorders 21. Drugs for Skin Condition	Chapters 20-22 MIDTERM Skills 11:00 a.m. -2:30p.m. Completion of workbook chapters 20-22
03/06/2015	8 Midterm Chapters 1-15 Midterm Examination	Midterm Examination Midterm Skills Completions	Midterm skills Completion Chapters 1-15
03/13/2015	9	22. Musculoskeletal System Disorder 23. Gastrointestinal	Chapters 23- 24 Complete workbook sections 23-24
03/16/2014 03/22/2015	SPRING BREAK	NO CLASS SPRING BREAK	BE SAFE/HOLIDAY
03/27/2015	10 Exam 2 Lab BC Chapters 16-23	24. Respiratory System Disorder 25. Circulatory System and Blood Disorders	Chapters 25-27 Complete workbook sections 25-27
04/03/2015		SPRING HOLIDAY	
04/10/2015	11 12	29. Reproductive System Disorders 30. Drugs for Neurologic	Chapters 28-29 Complete sections in workbook 28-29 Chapters 30-31 Complete workbook sections
04/16/2015	13	Final Skills	FINAL SKILLS
04/23/2015	14 Exam 3 lab A Chapters 17-31	Final Skills Labs Group A Lab 271	FINAL SKILLS
05/01/2015	15	Final skills lab Group B Lab	Final Skills
05/08/2015	16 Final Examination 10:30 a.m. –12:30 Lab A	FINAL EXAMINATION	Final examination is on Friday from 10:30 a.m. – 12:30 p.m.

Your learning is 100% of your responsibility. All text reading and chapter activities are to be completed prior to class meeting. You are to come prepared to discuss each chapter and exercises. You are responsible for the content.

The sequencing is subject to change as deemed necessary by faculty. The students

MDCA 1448 course involves the use of lectures, PowerPoint presentation, videos, virtual simulation, visual aids, and medical computer software.

Skill Lab Practical & Lab Assignments	15% of your final grade
Class Participation/homework/quizzes	10% of your final grade
Final Lab Practical	20% of your final grade
Exams (5 total)	15% of your final grade
Mid-term Exam	20% of your final grade
FINAL Exam (Comprehensive)	20% of your final grade

MDCA 1448 - 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.

REQUIRED TEXTBOOK:

- 1) Pharmacology Principles and Applications, by Eugenia Fulcher, Robert Fulcher and Cathy Soto, 3rd Edition, 2011, Saunders Elsevier, ISBN: 978-1-437-72267-3-1
- 2) Workbook to accompany Pharmacology Principles and Applications, by Eugenia Fulcher, Robert Fulcher and Cathy Soto, 3rd Edition, 2011, Saunders Elsevier

BOOKSTORE: West Loop Campus, 5601 West Loop South, Houston, 77081 713-218-0391

ADA Services

Students with Disabilities

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. (At any HCC campus) Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.

To visit the ADA Web site, log on to www.hccs.edu, click Future students, scroll down the page and click on the words Disability Information.

For questions, please contact Donna Price at 713.718.5165 or the Disability Counselor at your college. Coleman ADA Counselor – 713.718.7631

HCC Policy Statement: Academic Honesty

Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and or/ disciplinary proceedings may be initiated by College

System officials against a student accused of scholastic dishonesty. *The following statement is an excerpt from the Student Conduct section of the College System catalog:* “Scholastic dishonesty includes, but is not limited to, cheating on test, plagiarism, and collusion.” “Cheating on a test includes:

- Copying from another student’s test paper;
- Using, during a test, materials not authorized by the person giving the test;
- Collaborating with another student during a test without authority;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an unadministered test;
- Bribing another person to obtain a test that is to be administered.

“Plagiarism means the appropriation of another’s work and the unacknowledged incorporation of that work in one’s own written work for credit. Collusion means the unauthorized collaboration with another person in preparing written work offered for credit.”

Student Attendance:

Research has shown that the *single most important factor* in student success is ATTENDANCE.

Attendance and punctuality is mandatory. Please arrive on time to lecture and/or lab. If you are late, wait outside until there is a break. HCC Policy states that you may be withdrawn by your instructor after missing 12.5% of the course that is equal to 6 total hours of instruction (lecture/lab). Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. If you decide NOT to come to class for whatever reason, be courteous and notify your instructor. It is a good idea to connect with someone in class and exchange information (e-mail or phone numbers) in the event you are absent to share notes or discussion or for a study group. When absent you are responsible for all material missed. Remember the class attendance equals class success!

HCC Course Withdrawal Policy:

The last date for withdrawal from any class is **March 24th 2015**. It is the responsibility of the student to officially drop or withdraw from a course. Failure to officially withdraw may result in the student receiving a grade of “F” in the course. If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal. Before, you withdraw from your course; please take the time to meet with department chair and instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important. Do not take withdrawals lightly. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course

withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor *may* “alert” you and HCC counselors that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

If you plan on withdrawing from your class, you **MUST** contact the Department Chair, HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done **PRIOR** to the withdrawal deadline to receive a “W” on your transcript. ****Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to determine class withdrawal deadlines. *Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline.*** If you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade. If for any reason you register for a class, show up once or twice and then decide not to attend, **DROP THE CLASS!** The last date for withdrawal from any class is **March 24, 2015** at 4:30 p.m.

Repeat Course Fee:

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice, are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

HCC Student Services Information:

Early Alert: HCC has instituted an Early Alert process by which your professor will “alert” you through counselors of concerns that you might fail a class because of excessive absences and/or poor academic performance.

Classroom Behavior:

As your instructor and as a student in this class, it is our shared responsibility to develop and maintain a positive learning environment for everyone.

Your instructor takes this responsibility very seriously and will inform members of the class if their behavior makes it difficult for him/her to carry out this task. As a fellow learner, you are asked to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

As a student active in the learning community of this course, it is your responsibility to be respectful of the learning atmosphere in your classroom. **To show respect of your fellow students and instructor, you will turn off your phone and other electronic**

devices, and will not use these devices in the classroom unless you receive permission from the instructor.

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office of Students with Disabilities for information regarding reasonable accommodations.

Instructor requirements:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through class activities, discussions, and lectures
- Description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

To be successful in this class, it is the student's responsibility to:

- Attend class and participate in class discussions and activities
- Read and comprehend the textbook
- Complete the required assignments and exams:
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts and all assignments
- Passing all written examinations, quizzes and assignments with a minimum grade average of 75%
- Pass all skill competencies with 100% proficiency
- Be in class attendance 90% of the time

Program/Discipline Requirements:

On file with the MDCA Program the student must have, a current physical examination with complete and up-to-date immunizations, including Hepatitis B vaccination series and TB Skin test as well as negative criminal background check and drug screen results Skills lab courses require a student to demonstrate performance of competency. Students will perform procedures on other students and allow the same to be performed on them in order to complete/pass performance of competencies.

In order to successfully complete **MDC A 448**, the student is responsible for adherence to the attendance policy, completion of all assignments as designated in this syllabus; passing all written examinations, quizzes and assignments with a minimum grade average of 75% and achieve a final course average of 75% or higher. In skill competencies, the student must perform the procedure until competency is attained in order to pass. The student must demonstrate with 100% accuracy skills competencies with a maximum of three attempts using a checklist in order to pass. The first attempt is 100%. The second attempt is 85% and the third attempt is 75%. Each skill is assigned point values, which include critical steps and theory questions. A student is not considered competent for entry-level employment in a medical office until he or she passes the competency.

Failure to demonstrate 100% competency may result in a failing grade for the skill and may

result in failure of the course and/or dismissal from the program. Attendance in all skills lab procedural classes is a must. Make-up for missed skills competencies is not an option.

Lab attire

Appropriate uniform dress attire is required at all times in the MDCA Laboratory. Please see the MDCA student handbook for more information. This includes scrubs, lab coat, white socks or hose, basic white (little color) leather closed-toe shoes or walking athletic shoes and student identification badge. Hair grooming and personal hygiene is a must for all students. No loop earrings, no body piercings, no tongue piercings or visible tattoos are

allowed. The only jewelry allowed is a wedding/engagement ring and a pair of 5mm stud earrings. A student will not be allowed in the laboratory without proper attire. The student may be dismissed from class for inappropriate dress and may be asked by faculty to leave the instructional site.

HCC Grading Scale:

HCC MDCA Program uses the following grading

system
90 - 100 = A
80 - 89 = B
75 - 79 = C
70 - 74 = D
Below 69 = F

Grading Percentages

Skill Lab Practical& Lab Assignments	15% of your final grade
Class participation/homework/quizzes	10 % of your final grade
Final Lab Practical	20% of your final grade
Exams (5 total)	15% of your final grade
Mid-term Exam	20% of your final grade
Final Exam (Comprehensive)	20% of your final grade

Instructor Grading Criteria:

Your instructor will conduct quizzes, exams, and assessments that you can use to determine how successful you are at achieving the course learning outcomes (mastery of course content and skills) outlined in the syllabus. If you find you are not mastering the material and skills, you are encouraged to reflect on how you study and prepare for each class. Your instructor welcomes a dialogue on what you discover and may be able to assist you in finding resources on campus that will improve your performance.

Make-up policy: It is the student's responsibility to consult with the instructor for any make-up assignments. The instructor is not required to provide any make-up assignments. All or any make-up work is at the discretion of the individual instructor. There will be only one make-up test allowed. **Any student absent from a major exam, test or quiz must contact the instructor and schedule a make-up exam to be taken before the**

next class meeting.

No contact from the student will result in **grade of zero** for the exam. Midterm and final exams must be taken at the designated time scheduled

There is no makeup for midterm or final skill competencies

Upon completion of the MDC A 1448 –Pharmacology course the student is expected to perform the following tasks with 100% proficiency according to the checklists. Minimum passing score of 90% for each task.

1. Administer an oral medication.
2. Administer an ophthalmic medication.
3. Administer an otic medication.
4. Administer a nasal medication.
5. Administer a rectal medication.
6. Administer a topical/transdermal.
7. Administer medication (vapor or gas) by inhalation.
8. Administer medication from a vial.
9. Administer medication from an ampule.
10. Demonstrate diluting powder medication in single-dose vial.
11. Administer and demonstrate mixing and diluting of medication.
12. Administer medication by subcutaneous injection.
13. Administer medication by intramuscular injection.
14. Administer medication by intradermal.
15. Administer, interpret, and record results of the basic types of skin test.
16. Demonstrate methods for patient teaching as related to medication administration.
17. Demonstrate method for refills/charting.
18. Create and maintain medication and immunization records.

COGNITIVE LEARNING OBJECTIVES

Upon Completion of Pharmacology MDC A1448, PHARMACOLOGY & ADMINISTRATION OF MEDICINES, the student should be able to complete the following task with 75% competency.

1. **Define Pharmacology and its general principles.**
2. **Identify the different names assigned to a drug.**
3. **List the guidelines for the administration of medication.**
4. **Describe the use, sources, classification, and types of drugs with examples of each.**
5. **Describe the factors that affect drug action.**
6. **Discuss the types of drug interactions when administering medication.**

7. List the various types of adverse drug reactions.
8. Demonstrate knowledge of measurement systems: metric, apothecary, and household.
9. Demonstrate knowledge of PDR (Physician's Desk Reference) principles.
10. Correctly, convert measurements from one system to another using the conversion principles.
11. Accurately perform mathematical calculations when necessary to compute drug dosages.
12. State the importance of the Federal Food, Drug, and Cosmetic Act.
13. Explain the significance of the Controlled Substance Act of 1970.
14. Define the five (5) controlled substances schedules and an example of a drug listed in each.
15. Describe the oral and parental routes of administration.
16. Describe the administration route through the skin and mucous membrane.
17. Classify drugs according to preparation and therapeutic actions.
18. List and describe the drugs used and their effects on the various drug terms used in administering medication.
19. Define and explain the various drug terms used in administering medications.
20. Describe the care and management for each of the classifications of drugs.
21. Differentiate between a narcotic, a non-narcotic, and a narcotic antagonist.
22. List the effects of a narcotic, a non-narcotic, and a narcotic antagonist on organs and structures of the body.
23. Define the drugs used in the management of pain.
24. List the drugs, which affect the skin, eyes, and ears.
25. Describe the differences in preparing insulin dosages for adult and children.
26. Discuss fluids, electrolytes, vitamins, and the use of heavy metal antagonists.
27. Describe the nine- (9) parts of a prescription.
28. State who may administer medication orders.
29. Describe guidelines necessary to properly process prescriptions.
30. Explain storage and record keeping for controlled substances.
31. Explain substance abuse.
32. Interpret abbreviations and symbols commonly used when administering medications.
33. Explain the legal implications for one who prepares and

administers medications.

34. State the (10) “Ten Rights of Proper Drug Administration” (3+7).
35. List the guidelines and precautions that should be followed for safe storage of medications in the physician’s office, hospital, etc.
36. Describe the charting process used for medications that has been administered by various routes.
37. List the actions that may constitute a medication error
38. Explain steps to take in case a medication error occurs.
39. List the general areas one must consider when doing patient and family teaching of medication.
40. Demonstrate the medication protocol required before, during and after a drug is administered.
41. Define drug tolerance, cumulative drug effect, and drug idiosyncrasy.
42. List and discuss the five (5) parts of the problem-solving steps that help members of the healthcare team provides effective patient care.
43. Differentiate between objective and subjective data.
44. Discuss humoral immunity and cell-mediated immunity.
45. Define the terms used in immunology.
46. Distinguish between and define the three (3) different types of immunity.
47. Explain the positive and negative aspects of an immunization program.
48. Distinguish between and define barbiturates and nonbarbiturates.
49. Analyze and use information critical for use in problem-solving techniques.
50. Define and know the Key Terms listed from the required text.

COURSE OBJECTIVES

Upon completion of MDCA 1448 Pharmacology & Administration of Medicines, the student should be able to:

1. Explain the differences in drugs, pharmacology, clinical pharmacology, and therapeutic And their interaction
2. Provide a brief history of the field of pharmacology.
3. Describe the roles of allied health professionals and other health professionals in the pathway of medication delivery.
4. Describe societal and personal attitudes that affect the delivery of medication.
5. Explain why patient education is important for safe medication delivery.
6. State the importance of the Federal Food, Drug, and Cosmetic Act.
7. Explain the significance of the Controlled Substance Act of 1970.
8. Define the role of the FDA and the USP/NF.
9. Define the five controlled substances and example of a drug listed in each.
10. Differentiate between drug dependence, drug abuse, drug misuse, and habituation.

11. Explain and describe the signs of drug abuse and the ethics involved in addressing these problems with patients and medical professionals.
12. Explain the legal and ethical implications for one who prepares and administers medications.
13. Define adverse reaction, side effect, and toxic reaction.
14. Differentiate between a drug and an ideal drug.
15. Describe the five (5) fundamental categories of pharmacology and how these influence medication in the body.
16. Contrast drug names: generic, legend, OTC (over-the-counter), and chemical names.
17. List and describe the uses, sources, names, and types of drugs.
18. Differentiate between medicinal indication, precaution, and contraindication.
19. Define drug tolerance, cumulative drug effect, and drug idiosyncrasy.
20. Differentiate between traditional and contemporary indications for medications
21. Identify drug classifications and some commonly prescribed medications in each group.
22. Explain the similarities and contradictions between antagonists and agonists.
23. Differentiate between a prescription and a medication order.
24. Explain the parts of a National Drug Code (NDC).
25. List warning and cautions label information and its relevance.
26. Identify items to look for when inventorying medications.
27. Identify abbreviations and symbols commonly used when administering medications and writing prescription.
28. List the nine parts of a prescription.
29. Differentiate between verbal orders and standing orders and how to interpret these orders.
30. Describe the steps necessary to prepare prescriptions for a physician's signature.
31. Telephone prescriptions to pharmacies and medication orders to health facilities.
32. Document prescriptions and medical orders in patient's records.
33. List five (5) ways to safeguard prescription pads.
34. Provide essential information about medications to promote patient compliance.
35. How to write a prescription.
36. Interpret a physician's medication orders.
37. List the three basic units of measure in the metric system.
38. Explain drug calculation and conversion relevance to the metric, apothecary and household system.
39. List the basic units of measurement in the apothecary system, including use of Roman Numerals in this system.
40. List the basic units of measurement in the household system.
41. Define the terms "ratio" and "proportion".
42. Explain the difference between dosage strengths and how drug are supplied.
43. Explain how drugs are stored, handled, and labeled.
44. Identify current trends in the use of symbols and abbreviations.
45. Identify items to look for when inventorying medications, including requirement for controlled substances.
46. Provide information about the evolution of IV therapy.
47. Explain the physiology of fluids in maintaining homeostasis and electrolyte balance.
48. Describe the indications for and advantages of IV therapy.
49. Identify the dangers of IV therapy.
50. Identify the types of fluids used for IV replacement therapy.
51. List the factors used in determining the types of IV fluids used in therapy.
52. Identify the equipment's and delivery systems needed for IV therapy.
53. Know the basic formulas for calculating intravenous flow rates, drip rates, and amount of

- medication for administration and calculating IV medication using these factors.
54. Explain why the allied health professional must assess the patient and the related medical conditions before initiating IV therapy.
 55. Discuss the legal and ethical issues of beginning IV therapy.
 56. Describe parts of a syringe and needle used in administering injections, including factors that influence size choice.
 57. State the basic reasons why medications are administered by an injection.
 58. List the anatomic sites for administering (10) intradermal injections
 59. List the anatomic sites for administering ten (10) subcutaneous injections.
 60. List the anatomic sites for administering ten (10) intramuscular injections.
 61. Explain how to administer a drug into a syringe from a vial, an ampule and a prefilled sterile cartridge-needle unit.
 62. Describe the difference between an oxygen mask and a nasal cannula.
 63. Describe OSHA standards that are necessary in medication administration.
 64. Explain quality assurance in medication administration.
 65. Explain the 3 "before" and 7 "rights" of administering medications safely.
 66. Explain the procedures necessary to prevent medication errors and the documentation required in the event an error occurs when administering medications.
 67. Differentiate between enteral, parenteral, and percutaneous administration.
 68. Lists ten (10) routes by which medication may be administered and briefly describe each.
 69. Describe or explain what is meant by the enterable route of medication administration.
 70. Demonstrate procedures for administering oral medication.
 71. Indication for the use of a rectal suppository.
 72. Demonstrate how to administer a rectal enema.
 73. Discuss the indications and contraindications to a rectal enema.
 74. Explain to a patient how to administer medication rectally.
 75. Administer topical forms of medications.
 76. Administer nitroglycerin ointment.
 77. Describe patch testing for allergens.
 78. Discuss the use of sublingual and buccal forms of medicine.
 79. administer Otic medications
 80. Describe how to use nasal medication.
 81. How to administer inhalation medicines using a metered dose inhaler.
 82. Describe the use of vaginal suppositories and douches.
 83. Define Analgesic, Antiflammatory, medication, and Antipyretics.
 84. Identify analgesic that is regulated by the Controlled Substances Act of 1970.
 85. Describe the therapeutic effects of narcotic and non-narcotic pain relievers, non-steroidal anti-inflammatory drugs (NSAIDS), and antipyretics commonly used in ambulatory medical care.
 86. Classifying non-opioid, analgesics and antipyretic commonly used into categories by their drug use.
 87. Educating patient about drug safety by making them aware of the danger of mixing OTC and legend (prescription) analgesic.
 88. Explain the differences between pathogenic and nonpathogenic bacteria.
 89. Describe the various forms of bacteria that are pathogenic in the body.
 90. Factors that is important in choosing an antibiotic or antimicrobial agent.
 91. Explain how humans can acquire drug resistance to specific antibiotics.
 92. Identifying and classifying by family the antibiotics, antimicrobials, antiviral, and antifungal commonly used today.