NORTHEAST TEXAS COMMUNITY COLLEGE

Medical Assisting Lab Procedures

MDCA 1352.001 TR

Fall 2023

COURSE SYLLABUS

Instructor: ***Karen Pitts, BAAS, AAS, CMA (AAMA)***
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Course Description:
Students will be instructed in procedures depicted in the waived category of the Clinical Laboratory Improvement Act (CLIA). This course includes blood collection, specimen handling, basic urinalysis, identification of normal ranges, quality assurance, and quality control.

Prerequisite:
MDCA 1417, MDCA 1302

Required Texts:
Kinn's The Medical Assistant An Applied Learning Approach 14th ed., Brigitte Niedzwiecki, Julie Pepper, P. Ann Weaver
Kinn's The Medical Assistant An Applied Learning Approach 14th ed. Study Guide and Procedural Checklist Manual, Brigitte Niedzwiecki, Julie Pepper, P. Ann Weaver

Publisher: Elsevier
ISBN Number: 978-0-323-58126-4, 978-0-323-60869-5

Student Learning Outcomes:

1. Asepsis and infection control
2. Specimen collection and processing
3. Diagnostic testing
4. Patient care and instruction
5. Quality assurance and quality control procedures
6. Appropriate equipment maintenance and troubleshooting

Course competencies:
ANATOMY & PHYSIOLOGY
I.C.8.a/b/c/d/e – Identify common pathology related to each body systems* including signs, symptoms, etiology, diagnostic measures, treatment modalities
I.C.9 – Identity Clinical Laboratory Improvement Amendments (CLIA) waived tests associated with common diseases
I.C.11 – Identify quality assurance practices in healthcare
I.P.2.b/c – Perform venipuncture and capillary puncture

I.P.3 – Perform patient screening following established protocols
I.P.11.a/b/c/d/e- Collect specimens and perform CLIA-waived hematology test, chemistry test, urinalysis, immunology test, and microbiology test.
A.1 – Demonstrate critical thinking skills
A.3 – Demonstrate empathy for patients' concerns

APPLIED MATHEMATICS
II.C.3.a/b – Identify normal and abnormal results as reported in graphs and tables
II.P.2 – Record laboratory test results into the patients' record
A.2 - Reassure patient

Competencies covered for MDCA 1348 in MDCA 1352 class-
I.P.5 – Select proper sites for administering parenteral medication
I.P.6 – Administer oral medications
I.P.7 – Administer parenteral (excluding IV) medications

LECTURES & DISCUSSIONS:
The Clinical Laboratory, Terminology, Safety, Equipment, Laboratory Math, Quality Assessment, The Microscope, Phlebotomy, Hematology, Hemostasis (Coagulation), Immunology and Immunohematology, Urinalysis, Clinical Chemistry, and Microbiology

COMPETENCY PROCEDURES:
Procedure 45-1 Perform a quality control measure on a glucometer (I.P.10) and record the results in a flow sheet (II.P.3)
Procedure 46-4 Differentiate between normal and abnormal test results while determining the reliability of chemical reagent strips (II.P.2)
Procedure 46-5 Obtain a specimen and perform CLIA waived Urinalysis; test the urine with a chemical reagent strip (I.P.11.c) and perform a urine culture test (I.P.11.e)
Procedure 48-3 Obtain a specimen and perform CLIA waived Hematology; Perform a hemoglobin test (I.P.11.a)
Procedure 48-7 Obtain a specimen and perform CLIA waived Chemistry test; Determine cholesterol level or lipid profile using a cholesterol analyzer (I.P.11.b)
Procedure 49-4 Obtain a specimen and perform CLIA waived Immunology test; Perform a quickvue infectious mononucleosis test (I.P.11.d)
Procedure 47-1 Instruct and prepare a patient for a procedure and perform venipuncture: Collect a venous blood sample using the vacuum tube method
Procedure 47-2 Perform venipuncture: Collect a venous blood sample using the syringe method (I.P.2.b)
Procedure 47-3 Perform venipuncture: Obtain a venous sample with safety winged butterfly needle
Procedure 47-4: Instruct and prepare a patient for a procedure and perform capillary puncture: Obtain a capillary blood sample by fingertip puncture (I.P.2.c)

Procedures that will be assessed from Pharmacology MDCA: 1348
Procedure 30-1. Administer Oral Medications (I.P.6)
Procedure 30-7. Administer Parenteral (Excluding IV) Medications: Give an Intradermal Injection (I.P.5)
Procedure 30-8. Select the Proper Sites for Administering a Parenteral Medication: Administer a Subcutaneous Injection (I.P.5)
Procedure 30-9. Administer Parenteral (Excluding IV) Medications: Administer an Intramuscular Injection into the Deltoid Muscle (I.P.4.a) (I.P.4.b) (I.P.4.c) (I.P.4.d) (I.P.4.e) (I.P.4.f)

Procedure 30-10. Administer Parenteral (Excluding IV) Medications: Give a Z-Track Intramuscular Injection into the Dorsogluteal Site (I.P.7)
Procedure 4-5. Complete an Incident Report Related to an Error in Patient Care (X.P.7)

Course Policies/Attendance:
Students are expected to attend and participate in all classes. If you are absent, regardless of the cause, you are still responsible for contacting the instructor prior to the absence and for any course work missed. You are allowed three absences from class. On the fourth absence, your course grade will be reduced one letter grade. Class begins promptly at 9am. For every 3 times you are tardy to class, it will be recorded as one absence. Please make sure you arrive on time.

Students are responsible for checking their Blackboard Course Messages, Blackboard Announcement Board, NTCC email, and Microsoft Teams for instructor communications.

Drop Policy: The last day to drop with a grade of "W" is **Tuesday, November 21, 2023.**

Instructional Methods and Tools:
The instructional methods and tools are tied to the course and chapter learning objectives by allowing the student to research, discover, and perform the differing educational exercises in class and within the Sim Chart Learning Platform. This course uses the following tools to aid students in successfully achieving the learning objectives in this course:

1. The Sim Chart Learning Platform will be used for the majority of assignments and procedures related to electronic health records and business practices.
2. Completion of hands-on competencies.
3. Articles, lectures, and powerpoint presentations supplied by the instructor.

Evaluation and Grading Criteria:
Exams will be given throughout the semester and will cover chapter reviews, terminology, and any additional materials given by the instructor during lecture. If there is any alteration in the class calendar, the change will be announced in class. If a student exits the room during an exam, the time will be noted and for every minute the student is out of the room, that number of points will be subtracted from the test score.

In addition, medical assisting students must obtain a passing score on all psychomotor and affective domain objectives (competencies) in the course. CAAHEP accreditation requires 100% of all medical assisting graduates pass 100% of all competencies.

Examinations and Competency Procedures:
There will be chapter and multi-chapter examinations and one (1) comprehensive final examination. There will be multiple competency procedure assessments that will count as a test grade. If you are absent the day of a competency procedure check-off, it will be up to you to contact your instructor to schedule a competency procedure make-up appointment. Failure to schedule a make-up appointment with your instructor will result in a final grade of zero (0) being entered for your competency. In addition, medical assisting students must obtain a passing score on all psychomotor and affective domain objectives (competencies) in the course. CAAHEP accreditation requires 100% of all medical assisting graduates pass 100% of all competencies. All class examinations are considered to be a major part of the course work upon which a portion of your final grade will be based. If the total average of the chapter exams is below 75%, the student will not qualify to sit for the final examinations. There are NO make-up exams! Class exams are listed on the class calendar.

If this calendar must be altered, the change in the schedule will be announced in class. If you have a conflict with the date, you must contact me well in advance of the examination. Failure to do so will result in an examination grade of zero. There is absolutely no make-up exam for the final exam. You must be in attendance to take the final. If you are not able to take the final exam, a grade of 0 will be given for the exam. A grade of zero will be assigned for any missed unannounced quizzes.
*****There are no make-ups for any activities or assignments and I do not accept late work unless prior arrangements have been made.**

Competency/Performance Test Policy:
Procedure passed on first attempt, maximum score possible = 100 %
Procedure passed on second attempt, maximum score possible = 88 %
Procedure passed on third attempt, maximum score possible = 75 %

Assignments:
All assignments are due on the specified due date. **No late assignments will be accepted.** If you are unable to turn in your assignment on the specified date, you must contact me in advance to make arrangements for submission.

Academic Dishonesty:
Academic dishonesty is considered an act of cheating. Each student has a responsibility to follow the college policies regarding academic dishonesty which are found on page 86 in the Northeast Texas Community College General Catalog. Please see my letter regarding Academic Integrity found on BlackBoard under "START HERE"

Any student in violation of this policy will automatically receive a grade of "0" for that assignment. A second violation will result in suspension from the program.

APA (American Psychological Association) Format: APA is a specific format that is a guideline for every aspect of writing, from determining authorship to constructing a table to avoiding plagiarism and constructing accurate reference citations. This format must be adhered to for all writing assignments to avoid plagiarizing your written material. If you are unfamiliar with APA formatting, I have provided an Internet link on the **"START HERE"** page for reference.

Grading Scale:

Lab Homework/Quizzes, Student Contract	15%
Lab Procedures	15%
Chapter Exams	40%
Final Comprehensive Exams	30%

The grading scale of all evaluation combined will be as the following:

90% - 100%	=	A
89% - 80%	=	B
79% - 75%	=	C
Below 74.9%	**=**	**F**

75% is the minimum passing level of achievement. Any student who receives a final score below 75% will not pass the course. In addition, medical assistant students must obtain a passing score on all

psychomotor and affective domain objectives (competencies) in the course. CAAHEP accreditation requires 100% of all medical assisting graduates pass 100% of all competencies.

Grades will be posted online under **"My Grades"** in Blackboard. Grades will be posted no later than day 7 of the following week in which the assignment was due. For example, if your assignment was due in Week 3, you would not receive grades on that assignment until Day 7 of Week 4. MindTap grades will automatically post to your grade book after you have submitted the assignment. I do review tests and worksheet assignments for computer errors and may award credit for answers that I feel are correct.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:
In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to: online through the BlackBoard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, BlackBoard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the BlackBoard course site.

ADA Statement
It is the policy of Northeast Texas Community College to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the Northeast Texas Community College Catalog or Student Handbook or you can contact the Coordinator of Special Populations at 903-434-8202, or visit the website: http://www.ntcc.edu/index.php?module=Pagesetter&func=viewpub&tid=111&pid=1

Family Educational Rights and Privacy Act (FERPA)
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred as considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing.
Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tobacco Use:
The use of tobacco products including smokeless tobacco, smoking tobacco, and any legal smoking preparation is prohibited in all College buildings, enclosed facilities, inner campus, and College owned vehicles.
Tobacco use is prohibited in:

1. All enclosed buildings and facilities, including but not limited to classrooms, offices, food service areas, lavatories and residence halls
2. All exterior areas in the inner campus and parking lots.
3. All college owned vehicles.

Tobacco use is permitted in:

1. Personal vehicles
2. Designated smoking huts on the west side of campus.

CELL PHONES, PAGERS & OTHER ELECTRONIC DEVICES
Classrooms should be free of all unnecessary distractions from the tasks of learning. Therefore, as a general rule, students should silence all personal electronic devices not being used for coursework prior to entering the classroom. Instructional management is a right and a responsibility of the instructor; therefore, policy regarding the use of electronic devices in the classroom may vary depending upon the nature of the course or the guidelines of the instructor. Upon entering the classroom, all cell phones will be placed in vibrate/silent mode.

CLASSROOM COMPUTERS

The computers in the classroom are for course work only. Checking social media sites and other Internet activity not related to educational work is prohibited. Computers are monitored at the discretion of the instructor. Please make sure that you read the Social Media and Electronic Devices policy found in your MA Program Handbook. **If you are found in violation of this policy, your course grade will be decreased one letter grade for each occurrence.**

LEARNING OBJECTIVES*:*

Chapter 29 – Pharmacology Math

- Define, spell, and pronounce the terms listed in the vocabulary.
- Summarize the important parts of a drug label.
- Demonstrate knowledge of basic math computations.
- Define basic units of measurement in the metric and household systems.
- Convert among measurement systems.
- Do the following when calculating drug dosages for administration:
    - Demonstrate knowledge of basic math computations by calculating the correct dose amount.
    - Calculate proper dosages of medication for administration while using mathematical computations.
- Determine accurate pediatric doses of medication.
- Summarize how to reconstitute powdered injectable medications.
- Specify the legal and ethical responsibilities of a medical assistant in calculating drug dosages.

Chapter 30 – Administering Medications

- Define, spell, and pronounce the terms listed in the vocabulary.
- Do the following related to safety in drug administration:

    - Follow safety precautions in the management of medication administration in the ambulatory healthcare setting.
    - Analyze safety guidelines for specific patient populations.
    - Document the administration of a medication accurately in the health record.
- Summarize patient assessment factors that can affect medication administration.
- Identify various drug forms and their administration guidelines, and administer oral medications.
- Do the following related to parenteral administration of drugs:
    - Specify parenteral administration equipment, including details about needles and syringes.
    - Follow OSHA guidelines in the management of parenteral administration.
    - Describe and demonstrate the types and locations of parenteral administrations with proper use of sharps containers.
- Recognize the medical assistant's role in coaching patients about the administration of drugs.
- Assess legal and ethical issues in drug administration in the ambulatory care setting, and complete an incident report related to an error in medication administration.

Chapter 45 – Assisting in the Clinical Laboratory

- Define, spell, and pronounce the terms listed in the vocabulary.
- Discuss the role of the clinical laboratory personnel in patient care and the medical assistant's role in coordinating laboratory tests and results.
- Describe the divisions of the clinical laboratory and give an example of a test performed in each division.
- Explain the three regulatory categories established by the Clinical Laboratory Improvement Amendments (CLIA) and identify CLIA-waived tests associated with common diseases.
- Identify quality assurance practices in healthcare, document the results on a laboratory flow sheet, and discuss quality control guidelines.
- Do the following related to laboratory safety:
    - Compare the agencies that govern or influence practice in the clinical laboratory.
    - Discuss the purpose of a Safety Data Sheet.
    - Summarize safety techniques to minimize physical, chemical, and biologic hazards in the clinical laboratory.

- Describe the essential elements of a laboratory requisition.
- Discuss specimen collection, including the importance of sensitivity to patients' rights and feelings when collecting specimens. Also, discuss the 8 steps in collecting specimens and informing patients of their results.
- Explain the chain of custody and why it is important.
- Describe the differences between Greenwich time and military time.
- Identify the Fahrenheit temperature and the Celsius temperature of common pieces of laboratory equipment.
- Name the metric units used for measuring liquid volume, distance, and mass.
- Do the following related to laboratory equipment:
    - Name the parts of a microscope and describe their functions.
    - Summarize selected microscopy tests that may be performed in the ambulatory care setting.
    - Demonstrate the proper use and maintenance of the microscope.
    - Describe the safe use of a centrifuge.
    - Discuss the use of an incubator.
- Identify patient education issues, as well as legal and ethical issues, in the clinical laboratory setting.

Chapter 46 – Assisting in the Analysis of Urine

- Define, spell, and pronounce the terms listed in the vocabulary.
- Describe the history of the analysis of urine.
- Describe the anatomy and physiology of the urinary tract, and discuss the formation and elimination of urine by describing the processes of filtration, reabsorption, secretion, and elimination.
- Do the following related to collecting a urine specimen:
    - Show sensitivity to patients' rights and feelings when collecting specimens.
    - Discuss collection containers.
    - Explain the various means and methods used to collect urine specimens.
    - Instruct a patient in the collection of a 24-hour urine specimen.
    - Instruct a patient in the collection of a clean-catch midstream urine specimen.
- Examine and report the physical aspects of urine.

- Perform quality control measures and reassure a patient of the accuracy of the test results based on the steps taken for quality assurance and quality control when performing the chemical urinalysis.
- Test and record the chemical aspects of urine using CLIA-waived methods.
- Prepare a urine specimen for microscopic evaluation, and understand the significance of casts, cells, crystals, and miscellaneous findings in the microscopic report.
- Explain or perform the following CLIA-waived urine tests:
    - Glucose testing using the Clinitest method
    - Urine pregnancy test
    - Fertility and menopause tests
    - Urine toxicology and drug testing
- List the means by which urine could be adulterated before drug testing.
- Discuss patient education and legal and ethical issues related to urinalysis.

Chapter 47 – Assisting in Blood Collection

- Define, spell, and pronounce the terms listed in the vocabulary.
- List the equipment needed for venipuncture.
- Explain the purpose of a tourniquet, how to apply it, and the consequences of improper tourniquet application.
- Explain why the stopper colors on vacuum tubes differ, and state the correct order of drawing samples for various types of tests.
- Describe the types of safety needles used in phlebotomy.
- Explain why a syringe rather than an evacuated tube would be chosen for blood collection.
- Discuss the use of safety-engineered needles and collection devices required for injury protection.
- Summarize postexposure management of accidental needlesticks.
- Do the following related to routine venipuncture:
    - Detail patient preparation for venipuncture that shows sensitivity to the patient's rights and feelings.
    - Describe and name the veins that may be used for blood collection.
    - List in order the steps of a routine venipuncture.
    - Perform a venipuncture using the evacuated tube method.
    - Perform a venipuncture using the syringe method.
- Do the following related to problems associated with venipuncture and specimen re-collection:
    - Discuss various problems associated with venipuncture.
    - Discuss possible solutions to venipuncture complications.

    - Discuss why a specimen may have to be re-collected.
    - Describe the major causes of hemolysis during collection.
- Do the following related to capillary puncture:
    - Explain why a winged infusion set (butterfly needle) would be chosen over a vacuum tube or syringe needle.
    - Perform a venipuncture using a winged infusion set (butterfly needle).
    - List situations in which capillary puncture would be preferred over venipuncture.
    - Discuss proper dermal puncture sites.
    - Describe containers that may be used to collect capillary blood.
    - Explain why the first drop of blood is wiped away when a capillary puncture is performed.
    - Perform a capillary puncture.
- Discuss pediatric phlebotomy, including typical childhood behavior and parental involvement during phlebotomy and general guidelines for pediatric venipuncture.
- Describe handling and transport methods for blood after collection.
- Explain chain of custody procedures when blood samples are drawn.
- Discuss patient education, in addition to legal and ethical issues, related to assisting in blood collection.

Chapter 48 – Assisting in the Analysis of Blood

- Define, spell, and pronounce the terms listed in the vocabulary.
- Name the main functions of blood.
- Describe the appearance and function of erythrocytes.
- Describe the appearance and function of granular and agranular leukocytes.
- Differentiate between T cells and B cells.
- Describe the appearance and function of thrombocytes, explain the process of clot formation, and discuss plasma.
- Do the following related to hematology in the POL:
    - Identify the anticoagulant of choice for hematology testing.
    - Explain the purpose of the microhematocrit test.
    - Perform routine maintenance of a microhematocrit centrifuge.
    - Obtain a specimen and perform a microhematocrit test.
- Do the following related to hemoglobin:
    - Explain the role of hemoglobin in the body.
    - Obtain a specimen and perform a hemoglobin test.
- Do the following related to erythrocyte sedimentation rate:
    - Cite the reasons for performing an erythrocyte sedimentation rate (ESR) test.
    - Describe the sources of error for the erythrocyte sedimentation rate (ESR) test.
    - Perform an erythrocyte sedimentation rate (ESR) test using a modified Westergren method.
- Do the following related to coagulation testing:
    - Explain how to determine prothrombin time (PT).
    - Obtain a specimen and perform a CLIA-waived PT/INR test.
    - Reassure a patient of the accuracy of the test results.
    - Maintain lab test results using laboratory flow sheets.
- Identify the tests included in a complete blood count (CBC) and their reference ranges, and differentiate between normal and abnormal test results.
- Describe the red blood cell (RBC) indices and how they are calculated.
- Explain the reasons for performing a white blood cell (WBC) count and differential, and discuss preparation of blood smears for the differential.

- Discuss the identification of normal blood cells and describe the basic appearance of the five different types of leukocytes seen in a normal Wright-stained differential.
- Discuss red blood cell morphology.
- Differentiate between the ABO blood groupings and the Rh blood groupings.
- Describe the medical assistant's responsibility for legally preparing a patient for a blood transfusion.
- Do the following related to blood chemistry testing:
    - Explain the reasons for testing blood glucose, hemoglobin A1c, cholesterol, liver enzymes, and thyroid hormones.
    - Obtain a specimen and perform a blood glucose, hemoglobin A1c, and cholesterol test using CLIA-waived test methods approved by the U.S. Food and Drug Administration (FDA).
- Summarize typical chemistry panels, the reason for performing each panel, and the individual tests performed in these panels.
- Discuss patient education and professionalism related to assisting in the analysis of blood.

Chapter 49 – Assisting in Microbiology and Immunology

- Define, spell, and pronounce the terms listed in the vocabulary.
- Describe the naming of microorganisms.
- Describe various bacterial staining characteristics, shapes, oxygen requirements, and physical structures; also, explain the characteristics of common diseases caused by bacteria.
- Describe the unusual characteristics of *Chlamydia, Mycoplasma,* and *Rickettsia* organisms.
- Do the following related to fungi, protozoa, and parasites:
    - Compare bacteria with fungi, protozoa, and parasites.
    - Identify the characteristics of common diseases caused by fungi, protozoa, and parasites.
    - Perform patient education on the collection of a stool specimen for ova and parasite testing.
- Compare bacteria with viruses, and describe the characteristics of common viral diseases.
- Cite the protocols for the collection, transport, and processing of specimens.
- Explain how pinworm testing is done and when it is recommended.
- Describe and perform CLIA-waived microbiology tests:
    - Describe three CLIA-waived microbiology tests that use a rapid identification technique.
    - Obtain a specimen and perform the CLIA-waived rapid *Streptococcus* test.
- Do the following related to CLIA-waived immunology testing:
    - Discuss the purpose of indirect immunology testing.
    - Describe three CLIA-waived immunology tests that could be done in the physician office laboratory.
    - Obtain a specimen and perform the CLIA-waived mononucleosis strep test.
- Detail the equipment needed in a microbiology reference laboratory, and discuss identification of pathogens in the microbiology laboratory by describing various staining techniques.
- Describe the reference laboratory assessment of a throat culture and a urine culture.
- Explain the method used for culture and sensitivity testing.
- Discuss patient education, in addition to legal and ethical issues, involved in laboratory testing.