**Revised: Fall 2023**

# MDL 106
# Phlebotomy II

## COURSE OUTLINE

### Prerequisites:

None

### Course Description:

MDL 106 - Phlebotomy

Introduces basic medical terminology, anatomy, physiology, components of health care delivery and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions.

This course introduces the student to the techniques of obtaining blood samples from patients in health care settings. Students will learn venipuncture, heel, and finger stick techniques for adult and pediatric patients. Students will also be introduced to techniques of specimen preparations, interpretation of nurses and physicians orders, and proper techniques for handling of blood specimens.

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**Roanoke, VA 24038**
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**Semester Credits:** 4 **Lecture Hours: 2 Lab/Recitation Hours: 3**

# MDL 106 Phlebotomy

## Course Outcomes

**At the completion of this course, the student should be able to:**

1. Understand basic medical terminology.
2. Understand laboratory orders from nurses and physicians.
3. Understand basic human anatomy, especially the circulatory system.
4. Be able to obtain blood from laboratory models such as simulated arms.
5. Understand how to properly handle laboratory blood specimens.
6. Understand how to process blood samples for various clinical laboratories.

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# MDL 106

Required Materials:

Required Materials Here

Textbook:

Phlebotomy Essentials fifth edition, Ruth E. McCall* Cathee M. Tankersley. Walters Kluwer/Lippincott Williams & Wilkins. ISBN-13;978-1-60547-637-7…ISBN-10: 1-60547-637-4

The following supplementary materials are available:

1. Phlebotomy Exam Review, fourth edition
2. Website ***thePoint***
3.

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Topical Description: (Outline chapters and sections to be covered in the book – may include timeline)

## UNIT III……..Blood Collection Procedures

## Pre-analytical Considerations

- List and describe the physiological variables that influence laboratory test results and identify the tests most affected by each one
- List problem areas to avoid to site collection, identify causes for concerns, and describe procedures to follow when encountering each
- Identify and describe various vascular access sites and devices and explain what to do when encountered
- How to handle patient complications associated with blood collection
- How to avoid or handle procedural error risks, specimen quality concerns, and reasons for failure to draw blood

## Capillary Puncture Equipment and Procedures

- Describe the various type of equipment needed for capillary collection specimens
- Describe the composition of capillary specimens, identify which tests have different reference values when collected by capillary collection method, and name tests that cannot be preformed
- Indications for performing capillary puncture on adults, children, and infants
- List the order of draw for capillary collection
- Describe routine and thick blood smears and the reasons for making then at the collection site
- Explain the significance of capillary blood gas, neonatal bilirubin, and newborn screening tests and how specimens for these tests are collected

## UNIT IV……..Special Procedures

## Special Collections and Point-of-Care Testing

- Explain principles behind each special collection procedure, identify the steps involved, and list special supplies or equipment required
- Patient identification and specimen labeling procedures required for blood bank tests and identify the types of specimens typically required

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- Describe sterile technique in blood culture collection, why it is important, the the reasons why a physician might order blood cultures
- List examples of coagulation specimens and describe how to collect and handle them
- Describe chain-of-custody procedures
- Explain the importance of timing, identify the role of drug half-life, providing names of drugs for examples, and describe peak and trough, and therapeutic levels in drug monitoring
- Define POCT, explain the principle behind the POCT and identify special equipment required

## Computers and Specimen Handling and Processing

- Describe components and elements of a computer. Identify general computer skills, and computer terminology
- Trace the flow of specimens through the laboratory with an information management system
- Define bar coding
- Describe routine and special handling procedures for specimens
- List time constraints and exceptions for delivery and processing of specimens
- Identify OSHA required protective equipment worn when processing specimens
- Describe the steps involved in processing the different types of specimens and reasons for specimen rejection

## Nonblood Specimens and Tests

- Describe nonblood specimen labeling and handling
- Name and describe the various urine tests, specimen types, and collection handling methods
- Describe the types of nonblood specimens other than urine and explain why these specimens are tested
- Describe collection and handling procedures
- Identify tests performed on various nonblood specimens other than urine

## Arterial Puncture Procedures

- State the primary reason for performing arterial puncture and identify the personnel who may be required to perform them
- Explain the purpose of collection ABG specimens and identify and describe the ABG parameters

- Identify the sites that can be used for arterial puncture, the criteria used for selection of the site and advantages and disadvantages of each site
- List equipment and supplies needed for arterial puncture
- Identify preparation procedures, administration prior to drawing arterial blood gas specimens
- Explain the purpose of the modified Allen test, describe how it is performed, define what constitutes a positive or negative result, and give the procedure to follow for either result
- Describe procedures for collecting radial arterial blood gas specimens and the role of the phlebotomist in other site collections
- List hazards and complications of arterial puncture, identify errors that may affect specimen integrity, and describe criteria for specimen rejection

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Notes to Instructors
(List information about optional topics, departmental exams, etc)

1.

2.

3.

4.

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