

# Course Outline

This course covers the preparation of specimens in the areas of hematology, chemistry, immunohematology, microbiology, cytology and histology. How to provide directions to patients, aliquoting, processing and handling of non-blood specimens is included.

## Learning Outcomes:

At the end of the course the student will be able to:

1. Identify and demonstrate the collection of blood specimens in appropriate collection tubes relating to area
2. Identify and demonstrate skills necessary for the proper collection of specimens other than blood
3. Demonstrate the correct labelling and handling of the specimens
4. Demonstrate the correct method to prepare specimens for distribution to clinical laboratory departments for analysis
5. Demonstrate knowledge of a test library for obtaining information required to collect and handle specimens

## What we will cover:

- Introduction to the departments in the medical laboratory, in private and public sectors
- Understand variety of samples received in the medical laboratory
- Understand handling bodily fluids in the laboratory
- Introduction to the clinical chemistry laboratory, including a discussion of routine testing, specialized testing, toxicology, and therapeutic drug monitoring
- Introduction to Hematology department, basic knowledge of the blood cells and their functions, including a discussion of routine testing in both hematology and coagulation.
- Introduction to sample preparation and storage
- Handling blood samples after collection and during the transportation.
- Sample storage
- Discuss the patient identification procedure in blood sample collection
- Introduction to clinical histology and cytology department

## Hematology:

- Learn about the components of blood and be able to describe the various types of cells in the peripheral blood
- Learn about a number of hematology tests performed in the laboratory
- Learn the specialized collection instructions, the type of anticoagulant used, the purpose of the test and be familiar with some abnormal or disease state that could be associated with the respective test

## Transfusion Medicine:

- Be familiar with type of services and products that transfusion medicine department provide
- Learn about a number of transfusions medicine tests performed in the laboratory

- Learn the specialized blood collection instructions

**Chemistry:**

- Be familiar with the types of services the clinical chemistry laboratory provides
- Learn about a variety of analytical tests with respect to the name and purpose of the test, the type of anticoagulant required, and special collection instructions, and be familiar with some abnormal or disease states that may be associated with the specific test.

**Histology:**

- Be familiar with the type of services the department provides
- Understand the type of samples that are received in histology department.
- Handle specimens in safe and informed manner
- Introduction to the equipment used in the Histology department.

**Microbiology:**

- Explain the key characteristics of virus, fungi, parasites and bacteria
- Define culture and sensitivity and antibiotic sensitivity
- Handle microbiology specimens in a safe and informed manner
- Explain and assist patients and physicians with proper specimen collection (e.g. swabs, blood cultures, urine or stool samples, etc.)
- Evaluate and perform specimen set-up in a Microbiology team environment
- Understand the Media used in microbiology lab to isolate, grow, identify the bacteria causing

**\*Any normal ranges that are provided are for your information only. \***

*Reading recommendations: Phlebotomy Essentials, Chapter 6, 11, 13 and 14 and Appendix D*

**References**

*Essential Hematology*, Hoffbrand and Pettit, 2nd edition.

Mosby's Diagnostic and Laboratory Test reference, Pagana and Pagana 2nd edition,

*Phlebotomy Essentials (6<sup>th</sup> Edition)*, McCall, Tankersley

Fundamentals of Urine and Body fluid analysis, Nancy A. Bruznel

*The Morphology of Human Blood Cells*, Abbott Laboratories, 4th edition, 1984

**Evaluation of Learning**

Exam #1	30%
Exam #2	40%
Microbiology Lab	10%
Exam #3	20%

**Passing Grade**

The passing grade for Specimen Handling course is 65 % (C+).