J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: MDL 105 **Credits:** 3

Course Title: Phlebotomy

Course Description: 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. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: Provides theory and techniques of performing phlebotomy in a clinical setting. Theory includes background information on health care structure, basic anatomy, laboratory operations, phlebotomy equipment, venipuncture, dermal puncture, special collections, and medic legal ramifications. Significant laboratory time is spent finding and identifying veins and performing venipuncture using different equipment.

Course Prerequisites and Co-requisites:

None.

Student Learning Outcomes:
Upon completing the course, the student will be able to

a. Explain the role of the phlebotomist and how their role affects patient opinion of the laboratory;
b. List the major departments of the clinical laboratory;
c. Describe the types of samples typically analyzed and the tests that may be performed in each of the departments of the laboratory;
d. Explain the purpose of the material safety data sheet (MSDS);
e. Describe the proper safety requirements in the laboratory;
f. Describe standard precaution procedures;
g. Define selected medical abbreviations and correct use;
h. Describe the eight major body cavities and list at least one organ contained in each;
i. Describe the circulation of blood from the heart to the lungs and to the other body tissues;
j. Describe the components of whole blood;
k. Describe the laboratory tests that may be used to detect diseases of red and white blood cells;
l. Prepare equipment and identify correct blood specimen requirements;
m. Explain when a syringe or winged infusion system is used in blood collection;
n. Describe the isolation precautions and the PPE used;
o. List the veins that may be selected for venipuncture including advantages and disadvantages of each;
p. Describe and perform a proper blood collection;
q. Discuss proper dermal puncture site selection;
r. Describe the order of draw for both venous and dermal puncture;
s. Describe four potential problems with tourniquet application;
t. State reasons why a sample might be rejected by the laboratory;
u. Describe two physiologic differences between children and adults that should be considered;
v. Describe the procedure for performing various tolerance tests;

w. Describe the proper processing and transportation of blood specimens;
x. Describe six types of urine samples; explain how each is collected and used;
y. Explain why tubes should be transported in an upright position;
z. List and describe three types of analytical variables and the phlebotomist's role in each; and
aa. Define liability and describe examples of how a phlebotomist can avoid a lawsuit.

Major Topics to Be Included:
a. Introduction to phlebotomy and history of phlebotomy
b. Health care structure and basic medical terminology
c. Safety and infection control
d. Isolation techniques
e. Composition of blood
f. Human anatomy and physiology
g. Circulatory, lymphatic, and immune system
h. Specimen requirements
i. Venipuncture equipment
j. Venipuncture procedure
k. Dermal puncture procedure
l. Venipuncture complications
m. Blood collection in special populations and special collections
n. Specimen handling and transport
o. Quality phlebotomy
p. Legal issues in phlebotomy
q. Point of care testing
r. Professionalism/ethics

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