



# MLTS 160- Theory of Phlebotomy

2 CREDITS

## SYLLABUS

### CATALOG DESCRIPTION

Introduction to blood specimen collection and processing. Content areas include related body system anatomy and function, site selection, equipment and supplies, anticoagulants, specimen processing, safety, universal precautions, professionalism, ethics and review of the health care delivery system.

Prerequisites: High School Graduation or Equivalent

Semester Offered: Spring, Summer, Fall

#### **Common Student Learning Outcomes**

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

#### **BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

#### **CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

#### **CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

#### **EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

#### **INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

#### **INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

*Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.*

### **COURSE LEARNING OUTCOME**

Upon the completion of the lectures sessions, demonstrations, case studies, and reading assignments the student will be able to apply each of the major cognitive skills associated with proper blood specimen collection and processing to a practical situation.

### **SPECIFIC LEARNING OBJECTIVES**

Upon completion of the lecture, the student will be able to satisfy the objectives listed below. The criteria for satisfying the cognitive objectives is scoring 70% on written examinations. Specific criteria is listed for laboratory and psychomotor objectives will be found in the MLTS 160 Practicum laboratory manual.

Upon completion of the lecture series, the student will be able to:

1. Identify the different types of healthcare settings in which a phlebotomy may be employed and discuss the phlebotomist's role as a member of the health care team in each setting. (Level 2)
2. Name and describe various departments and services within the hospital health care setting and discuss how a phlebotomist may interact with each. (Level 2)
3. Discuss the levels of practice for clinical laboratory personnel and give the qualifications for each of these professional positions. (Level 2)
4. Define and utilize medical terminology pertinent to phlebotomy and laboratory testing. (Level 3)
5. Discuss the basic functions of the major laboratory sections of hematology, chemistry, microbiology, immunohematology, immunology, and urinalysis. (Level 2)

6. Identify the common tests performed in each of the major clinical laboratory sections. (Level 1)
7. Define and discuss the term nosocomial infection. (Level 2)
8. List and analyze the components of the chain of infection and apply safety precautions that will break the chain. (Level 3)
9. Describe the three isolation categories used in transmission-based precautions. (Level 2)
10. Differentiate between transmission – based isolation and protective isolation. (Level 4)
11. Differentiate among universal precautions, body substance isolation, and standard precautions. (Level 4)
12. Given an isolation classification, select the appropriate personal protective equipment needed. (Level 4)
13. Discuss OSHA and explain its role in workplace safety. (Level 2)
14. Describe the components of the Occupational Exposure to Bloodborne Pathogens Standard and state three additions mandated by the Needlestick Safety and Prevention Act. (Level 2)
15. Describe the components of a chemical hygiene plan. (Level 2)
16. Describe the four classes of fire and identify the types of fire extinguishers to be used to combat each. (Level 2)
17. Discuss institutional safety procedures and practices for handling biological specimens, hazardous materials, cleanup protocols for equipment and spills, and waste disposal. (Level 2)
18. Discuss protocols for exposure to blood and other body fluids. (Level 2)
19. List the basic steps to follow when a fire is discovered (RACE). (Level 1)
20. Discuss the circulatory system including the characteristics of blood and its components. (Level 2)
21. Identify the veins of the arms, hands, legs and feet on which phlebotomy is performed. (Level 1)
22. List the conditions that contraindicates phlebotomy from legs and feet. (Level 1)
23. Discuss the proximity of nerves to arteries and veins and the impact on phlebotomy. (Level 2)
24. Discuss blood collection protocol when obtaining a specimen from a central venous access device, fistula, and an intravenous device. (Level 2)
25. Discuss how laboratory testing is used to assess body functions and disease conditions. (Level 2)
26. Identify specimen requirements and laboratory tests commonly performed for evaluation of each body system. (Level 1)
27. Define hemostasis and describe the basic process of coagulation. (Level 2)
28. Describe the differences among whole blood, serum, and plasma. (Level 2)
29. Discuss the differences among arterial, venous and capillary samples. (Level 2)
30. Discuss the importance of proper specimen collection and specimen integrity in the delivery of patient care. (Level 2)
31. Describe the different types of collection equipment and discuss when different devices should be employed. (Level 2)
32. Describe the proper steps in order when doing a venipuncture, capillary puncture, arterial puncture. (Level 2)
33. Identify the various types of additives used in blood collection and discuss the modes of action and appropriate use for each additive. (Level 2)
34. Identify the evacuated tube color codes associated with the additives. (Level 1)
35. Describe substances that can interfere in clinical analysis of blood constituents and ways in which the phlebotomist can help to avoid these occurrences. (Level 2)
36. Differentiate between sterile and aseptic techniques. (Level 4)
37. Describe signs and symptoms of physical problems that may occur during blood collection and discuss an appropriate response to each. (Level 2)
38. Identify factors that compromise the integrity of specimens including timing of collection, transport and testing, light, temperature, medications, and physiological factors associated with the client and discuss the affect on the specimen. (Level 2)
39. Differentiate among preanalytical, analytical, and post analytical errors as related to the phlebotomist's scope of practice. (Level 4)
40. Discuss and explain what is meant by chain of custody. (Level 2)
41. Compare and contrast the donor blood collection to a routine venipuncture. (Level 4)
42. Describe factors that influence effective communication between patient and health care provider and between co-workers. (Level 2)
43. Discuss professionalism as related to persons performing phlebotomies. (Level 2)
44. Discuss the interrelationship of ethics, morals, professional and personal values and legal aspects in phlebotomy. (Level 2)
45. Discuss stress and the affects of stress on professionals performing phlebotomy and identify methods of handling stress in the work place. (Level 2)
46. Discuss measures that can be taken to avoid or reduce risks and liability in performing phlebotomy and related duties. (Level 2)
47. Discuss the interactions of quality control, quality assurance, and continuous quality improvement and total quality management. (Level 2)
48. Discuss forms of documentation used in the phlebotomy department. Level 2)

## **AFFECTIVE DOMAIN**

After completion of the lecture, the student will:

1. Respect laboratory equipment as demonstrated by proper use, request for additional instruction when necessary, and proper storage.
2. Respect diversity in the workplace by working in a collegial manner with workers.
3. Model a professional demeanor by having an appropriate appearance, maintaining confidentiality, and following written and verbal instructions.
4. Present with a successful work ethic as demonstrated by being seated and ready to work at the start of class time, turning in assignments on time, and notifying the instructor prior to an unavoidable absence or tardy.