SAN JUAN COLLEGE
Success Matters

MLTS 180 – INTRODUCTION TO WAIVED TESTING

2 CREDITS

SYLLABUS

CATALOG DESCRIPTION

Introduces the student to the scope of practice of the laboratory skills needed by the medical assistant in the physician office setting. Students will apply basic concepts used in the medical laboratory including terminology, waived instrumentation, safety, basic statistics, and quality assurance.

Prerequisites: MLTS 160 or Phlebotomy Experience

Semester Offered: On Request

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 GOALS

Upon the completion of the lectures, laboratory sessions, demonstrations, case studies, and reading assignments the student will be able to

1. Comply with the rules and regulations for safe practice in the point of care laboratory including breaking the chain of infection.(L,T, C,I,A)
2. Develop microscopic skills to identify a variety of biological cellular elements expected at a point of care laboratory.(L,T,I,A)
3. Develop skills in the operation and performance of various waived tests used in the point of care laboratory. (L,T,I,A)
4. Appreciate and apply the principle of quality assurance in the point of care laboratory. (L,T,I,A)

Upon completion of the lecture series and laboratory, 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 in the laboratory manual.

SPECIFIC LEARNING OBJECTIVES

Specific Learning Objectives Upon completion of the lecture series, laboratory sessions, demonstrations, case studies, and reading assignments the student will be able to

1. Define, spell and pronounce the terms listed in the vocabulary list.
2. Discuss the basic functions of the major laboratory sections of hematology, chemistry, immunohematology, immunology, microbiology and urinalysis.
3. Identify the common tests performed in each of the major clinical laboratory sections and identify at least one waived test for each section.
4. Define and discuss the term nosocomial infection.
5. List the components of the chain of infection and safety precautions that will break the chain.
6. Describe the three isolation categories used in transmission-based precautions.
7. Differentiate among universal precautions, body substance isolation, and standard precautions.
8. Given an isolation classification, select the appropriate personal protective equipment needed.
9. Discuss OSHA and explain its role in workplace safety.
10. Describe the components of the Occupational Exposure to Bloodborne Pathogens Standard and state three additions mandated by the Needlestick Safety and Prevention Act.
11. Describe the components of a chemical hygiene plan.
12. Describe the four classes of fire and identify the types of fire extinguishers to be used to combat each.
13. Discuss institutional safety procedures and practices for handling biological specimens, hazardous materials, cleanup protocols for equipment and spills, and waste disposal.
14. Discuss protocols for exposure to blood and other body fluids.
15. List the basic steps to follow when a fire is discovered (RACE).
16. Discuss how laboratory testing is used to assess body functions and disease conditions.
17. Identify specimen requirements and laboratory tests commonly performed for evaluation of each body system.
18. Define hemostasis and describe the basic process of coagulation.
19. Describe the differences among whole blood, serum, and plasma.
20. Discuss the differences among arterial, venous and capillary samples.
21. Discuss the importance of proper specimen collection and specimen integrity in the delivery of patient care.
22. Describe the different types of collection equipment and discuss when different devises should be employed.
23. Describe the proper steps in order when doing a venipuncture, capillary puncture, arterial puncture.
24. Identify the various types of additives used in blood collection and discuss the modes of action and appropriate use for each additive.
25. Identify the evacuated tube color codes associated with the additives.
26. Describe substances that can interfere in clinical analysis of blood constituents and ways in which the MA can help to avoid these occurrences.
27. Differentiate between sterile and aseptic techniques.
28. Describe signs and symptoms of physical problems that may occur during blood collection and discuss an appropriate response to each.
29. 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.
30. Describe factors that influence effective communication between patient and health care provider and between co-workers.
31. Discuss the interactions of quality control, quality assurance, and continuous quality improvement and total quality management.
32. Discuss forms of documentation used in the clinical laboratory department.
33. Describe what an MSDS sheet is and explain the value of the information it contains.
34. List the different types of barrier equipment and explain the conditions when each is to be used.
35. Explain and apply the rules for rounding off numbers and for the use of significant figures.
36. Describe the procedure and calculate the volumes needed for making a single dilution.
37. Discuss sources of error including preanalytical, analytical and post analytical errors and categorize examples of each.
38. Explain the importance of a quality control program including the use of control samples.
39. Define and compare and contrast standard, calibrator and control.
40. Define chain of custody.
41. Describe the proper use of pipets.
42. Name the parts of a microscope and describe their functions.

43. Describe the essential elements of a laboratory requisition.
44. Explain the general principle of operation, safety issues with each, and proper care and calibration of:
    a) Semi-automated pipetting devices.
    b) Microscopes
    c) Balance
    d) Centrifuge.
45 List the reference ranges for RBC, WBC, and platelets for adults.
46. Discuss the clinical significance of abnormal cell counts.
47. Discuss the qualities and factors which contribute to a well made blood smear.
48. Evaluate and recognize a properly prepared blood smear.
49. Discuss the staining reaction of the Wright's stain and explain the causes of an overly blue or pink stain.
50. List and recognize the white blood cells normally found in circulation.
51. Discuss the color and shape of a normal erythrocyte.
52. Describe the physiology of urine formation.
53. Describe the various means and methods in urine collection.
54. Discuss the instruction that would be given a patient in the collection of a
    a. 24 hour urine collection.
    b. clean catch urine.
55. Define urinalysis and describe its three main components.
56. Identify the colors which are commonly associated with abnormal urine and discuss the pathological cause for each.
57. Discuss the significance of cloudy red urine and clear red urine.
58. State possible causes for urine turbidity in a sample that is not fresh.
59. Identify possible causes for abnormal urinary foam.
60. Identify the odors commonly associated with abnormal urine and state the cause for each.
61. List the common terminology used to report clarity of urine.
62. List the common terminology to report normal urine color.
63. Discuss the relationship of urochrome and normal urine color and to specific gravity.
64. Discuss the chemical composition of normal urine.
65. Describe a suitable urine specimen for routine urinalysis, including storage and preservation.
66. Identify and describe normal and abnormal physical properties that might be encountered in urine specimens and correlate physical findings with chemical findings.
67. Discuss the procedure for doing a specific gravity on urine.
68. Correlate chemical and physical findings with possible pathophysiology.
69. For each of the chemical analytes tested on the test strip 10 describe the clinical significance of the test, the principle of the test, specificity and sensitivity, interfering substances and additional considerations associated with the test.
70. Describe the common gram stain reactions for common bacteria isolated in the medical laboratory.
71. Explain the CDC classification of biological agents.
72. Describe the principle of and procedure for a pregnancy test.
73. Discuss the process of urine testing for toxicology.
74. Describe the principle of and procedure for a rapid strep test.
75. Discuss the proper collection of a throat culture.