

SYLLABUS  
PART I  
EDISON COMMUNITY COLLEGE  
MLT 121S INTRODUCTION TO LABORATORY MEDICINE  
3 CREDIT HOURS

**COURSE DESCRIPTION**

Introduces basic laboratory terminology and practices, phases of analysis, glassware, phlebotomy, safety, and specimen collection, labeling and processing. Federal and state regulation of laboratories, registration and certification of laboratory personnel are also introduced. Prerequisite: Admission into the MLT program. Lab fee.

**COURSE GOALS**

The student will:

| Bloom's level |   | Program Outcomes | TAG OHL 008 |
|---------------|---|------------------|-------------|
| 2             | 1. Discuss the different careers available in the profession of laboratory medicine.  | 4                | 1           |
| 1             | 2. Identify laboratory departments and personnel.   | 4                | 1           |
| 2             | 3. Explain the differences between the terms licensure, certification, registration and accreditation.  | 4                | 2           |
| 1             | 4. Describe the different governing groups and agencies involved in the laboratory medicine profession.   | 4                | 3           |
| 1             | 5. Identify and describe ASCLS, ASCP, MT/CLS, MLT/CLT, NCA, NAACLS, JCAHO, CAP, and CLIA.   | 4                | 4           |
| 2             | 6. Discuss CLIA regulations for waived and non-waived testing, including personnel requirements.  | 4                | 3           |
| 2             | 7. Discuss point of care testing.   | 1, 4             | 3           |
| 2             | 8. Discuss the major routine tests performed in the blood bank, chemistry, hematology, immunology, microbiology, and urinalysis sections of the clinical lab. | 2                | 5           |
| 4             | 9. Correlate major test results to general pathologic conditions.   | 2                | 5           |
| 1             | 10. Define Universal Precautions and Blood Borne Pathogen Standards and identify the two primary blood borne pathogens these standards are meant to prevent.  | 5                | 6           |
| 2-P           | 11. Use appropriate PPE for blood collection, transport, and handling.  | 5                | 6           |
| 5             | 12. Create a clinical laboratory safety checklist that identifies key elements in the following categories: biohazards, fire hazards, and chemical hazards.   | 5                | 7           |
| 2             | 13. Describe the proper procedure for performing a venipuncture.  | 1                | 8           |
| 3-P           | 14. Accomplish at least 3 successful venipunctures.   | 1                | 9           |
| 1             | 15. List common anticoagulants used in collecting blood for laboratory testing.   | 1                | 10          |
| 2-P           | 16. Use the appropriate order of draw when additive tubes are used to perform a venipuncture.   | 1                | 11          |
| 2-P           | 17. Describe the proper procedures for obtaining quality specimens for the lab (venous, arterial, and capillary).   | 1                | 12          |

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|---------------|--|------------------|-------------|
| 2             | 18. Describe the proper procedures for processing whole blood specimens when serum or plasma is needed.                                    | 1                | 13          |
| 2             | 19. Describe general storage requirements for blood specimens.   | 1                | 13          |
| 2             | 20. Describe phases of analytical testing.   | 1                | 12, 13, 15  |
| 3             | 21. Determine sources of error in each phase of analytical testing.  | 1                | 12, 13, 15  |
| 5-P           | 22. Prepare laboratory reagents, controls and dilutions using the appropriate glassware.   | 1                | 15          |
| 2             | 23. Discuss reagent grades of water including distilled, deionized, and reverse osmosis and the application of each in laboratory testing. | 1                | 15          |
| 3-P           | 24. Demonstrate the ability to use basic clinical laboratory equipment and instrumentation.  | 1                | 15          |
| 2             | 25. Define and distinguish among the terms quality control, quality assurance and proficiency testing.                                     | 2                | 16          |
| 2             | 26. Discuss the importance of quality assurance in the clinical laboratory.  | 2                | 16          |
| 3             | 27. Identify the major components of a Code of Medical Ethics and apply to selected situations in Clinical Laboratory Science.             | 6                | 14          |

#### CORE VALUES

The Core Values are a set of principles which guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

#### TOPIC OUTLINE

1. The laboratory, laboratory regulation and laboratory professionals
2. Lab safety, standard precautions, OSHA, MSDS, Infection Control, Blood Borne Pathogens
3. Collection of laboratory specimens
4. Phases of testing
5. Venipuncture, arterial, and capillary puncture techniques
6. Quality control, quality assurance, and proficiency testing
7. Ethics in laboratory medicine
8. Performance of at least 3 successful venipunctures
9. Laboratory mathematics and dilutions
10. Laboratory water
11. Operation of basic laboratory equipment including pipets, automatic pipettors, spectrophotometer, centrifuges, and POC devices.