El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Medical Laboratory Technology**
COURSE RUBRIC AND NUMBER	**MLAB 2360**
COURSE TITLE	**Clinical – Clinical/Medical Laboratory Technician IV**
COURSE CREDIT HOURS	**3 (Credits) 0 (Lec) : 15 (Lab)**

I. Catalog Description

Provides a health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Includes clinical practice in the areas of Clinical Chemistry and Microbiology. A grade of "C" or better is required in this course to take the next course. **Prerequisites: MLAB 1262. Corequisite: MLAB 2401 and MLAB 2434. (0:15). Professional Practice Insurance required.**

II. Course Objectives

A. Unit I. Chemistry
At the end of this rotation students will be able to:

1. Demonstrate compliance with government, state, and organizational safety regulations involving Biological, Chemical, and Radioactive, Fire, Physical, and Electrical hazards to include the handling of compressed gas cylinders, MSDS Sheets, storage, labeling, and disposing of biohazard material, chemicals, and sharps.
2. Process and identify 70 specimens received in the chemistry and microbiology department.
3. Actively participate in Quality Assurance, Quality Control and Proficiency Testing protocols incorporating precision, accuracy, Levey Jennings Charts and Westgard Rules.
4. Recognize scope of responsibility as a Medical Laboratory Technician when performing Chain of Custody protocols, performing and interpreting tests for drugs of abuse, and/or maintaining shift-to shift communication.
5. Adhere to HIPAA protocols when communicating, performing order entry/receiving, reporting results, and/or performing Delta checks, via computer, telephone, facsimile, E-mail, and/or interpersonally.
6. Operate the different Chemistry Analyzers, Immunoassay Instrumentation, and Centrifuges, with minimal supervision, to include daily, weekly, and monthly maintenance and/or monitoring of temperatures and/or humidity for refrigerators, incubators, freezers, and room temperatures.
7. Recognize the need for technical assistance from an instructor, preceptor, and or other more experienced lab professional when needed.
8. Discuss the principle operation, and troubleshooting of chemical analyzers in the laboratory and Point of Care instrumentation to include the importance of maintaining appropriate reagent inventory levels and the use of in-dated reagents.
9. Discuss the principal methods and clinical significance of chemistry tests for infectious diseases, tumor markers, therapeutic drug monitoring, and electrophoresis.
10. Process and perform the testing on a minimum of 10 tests on each instrument within the competency limit.
11. Perform manual/ automated methods and discuss the principles used for performing chemistry tests on the various body fluids.
12. Explain how the Reference Ranges are determined in a Chemistry department.

B. Unit II. Microbiology

At the end of this rotation students will be able to:

1. Demonstrate compliance with government, state, and organizational safety regulations involving Biological, Chemical, Fire, Electrical, Physical and Radioactive Hazards to include, use of MSDS, following OSHA protocols, and adhering to the lab facility's SOP manual when rotating through the Microbiology Department.
2. Inoculate patient culture samples unto the designated selective media, follow appropriate incubation procedure, and after incubation, prepare slides from isolated colonies for Gram staining.
3. Perform a minimum of forty (40) inoculations and thirty (30) Gram stains as follows:
    a. Fifteen (15) Gram positive organisms
    b. Fifteen (15) Gram negative organism
    c. Ten (10) Gram stains directly from specimens with their respective quality control
4. Identify culture results using biochemical, morphologic, and Gram stain characteristics to identify the most common aerobic bacteria found in patient specimens.
5. Differentiate Normal Flora from Pathogenic organisms.
6. Apply various bacterial identification techniques to isolate and identify twenty five (25) organisms within the competency limits.
7. Perform and interpret rapid screening tests.
8. Apply antimicrobial susceptibility testing techniques to determine an organisms' sensitivity to specific antibiotics and reportable MIC.

C. Unit III. Phlebotomy

At the end of this rotation students will be able to:

1. Demonstrate knowledge, skills, and ability to perform basic venous and dermal blood collection procedures, Bleeding Times and Sweat Chloride studies.
2. Make use of the Evacuated Tube, Syringe, and Winged Infusion blood collection systems.
3. Identify the various blood collection tubes and their additives used in Chemistry and the Microbiology departments.
4. Perform 35 successful venipuncture procedures utilizing both syringe technique and multi-specimen blood collection devices.

III. THECB Learning Outcomes (WECM)

As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry and will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

IV. Evaluation

A. **Preassessment**

Official MLT challenge exams have as of yet not been structured. Students wishing to challenge a certain course will be administered written examinations to assess comprehension of didactic material and lab practical exams to assess the clinical laboratory skills demonstrating accuracy and precision. The student must score 80% or higher to successfully complete each examination and meet the minimum competency limits set for individual laboratory skills and abilities.

B. **Postassessment**

1. Quizzes, lecture exams, and a final comprehensive written examination will be used to assess student' competency in didactic objectives.
2. Lab competency exams and lab practical exams are used to assess students' achievement of psychomotor objectives.
3. Lab practical exams and the identification of unknown specimens will require students to demonstrate a particular skill learned in the clinical lab component of the class.

Revised by Discipline: Fall 2015 (next revision in 3 years)

4. Written unit exams will consist of the following question types: multiple-choice, completion, essay, matching, spelling, analysis, and definition or any combination of these.

C. **Final Examination**

A comprehensive Final Exam will be administered at the end of the clinical lab departmental rotation.

D. **Evaluation**

To evaluate students' achievement of course objectives, student grades are tabulated using a final grade break down sheet. To successfully complete MLAB2360 Clinical-Clinical/Medical Laboratory Technician IV, the student must achieve not less than 80% in clinical components. The students overall grade must be no less than "C," to be allowed to progress to the next program level.

E. **Remediation**

If a student scores less than 80% on any clinical quiz, report form, or exam, the instructor will conference with student to discuss different learning, retaining, and studying methodologies. The instructor will discuss possible weakness and/or problem sources, and will help guide student to take remedial steps toward initiating corrective measures.

F. **Grading**

The final grade determination will be as follows:

Average Quizzes	25%
Average Evaluations	20%
Average Practicum's	30%
Comprehensive Final Exam	25%

Grading Scale

A = 94 - 100
B = 87 - 93
C = 80 - 86
D = 73 - 79
F = 72 and below

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.