El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Medical Laboratory Technology**
COURSE RUBRIC AND NUMBER	**MLAB 1127**
COURSE TITLE	**Coagulation**
COURSE CREDIT HOURS	**1 1 : 1** **Credits Lec Lab**

I. Catalog Description

Provide a course in coagulation theory, procedures, and practical applications. Includes quality control, quality assurance, lab safety, and laboratory procedures which rely on commonly performed manual and/or semi-automated methods. A grade of a "C" or better is required in this course to take the next course. **Corequisite: MLAB 1261. (1:1). Lab fee.**

II. Course Objectives

A. Unit I. Lab Operations and Laboratory Safety
Upon satisfactory completion of this unit the student will be able to:
1. Follow HIPAA regulations.
2. Adequately use Standard Precautions such as Personal Protective Equipment.
3. Locate MSDS (Material Safety Data Sheets) and use them when necessary.
4. Identify bio hazardous materials and safe containers to dispose of them.
5. Identify and prevent different sources of infection.
5. Follow government regulations on laboratory procedures.
6. Correctly apply Quality Assurance and Quality Control and perform Proficiency Testing.

B. Unit II. Megakaryocytes, Thrombocytes, and Their Function and Vasculature Structure
Upon satisfactory completion of this unit the student will be able to:
1. Describe the stages and function of megakaryocytes.
2. Identify platelets, normal values of platelets, and their function.
3. Describe the function of blood vessels.
4. Identify coagulation factors and their function.
5. Describe hemostasis and the interaction between platelets, blood vessels, and coagulation factors to maintain hemostasis.

C. Unit III. Coagulation Cascades and Fibrinolysis
Upon satisfactory completion of this unit the student will be able to:
1. Explain the concept of hemostasis and vascular integrity.
2. Describe the intrinsic, extrinsic, and in vivo coagulation cascades (clot formation) and the different factors involved.
3. Describe how the coagulation regulatory system works.
4. Explain how the fibrinolysis process occurs.

D. Unit IV. Various Coagulation Tests and Conditions That Will Interfere with Testing
Upon satisfactory completion of this unit the student will be able to:

1. Explain the importance of accurate patient blood collection for coagulation studies, including tube fill ratio, anticoagulants, and medication.
2. Describe hemolysis and its adverse effects on coagulation testing.
3. Describe the adverse effects of a clotted sample.
4. Describe the significance and /or role of the following coagulation tests:
    - A. Bleeding Time
    - B. Clot Retraction
    - C. D-Dimer Test
    - D. Factor Levels
    - E. Platelet Aggregation Studies
    - F. Platelet Count
    - G. Prothrombin Time (PT)
    - H. PT-INR (Prothrombin Time - International Normalized Ratio)
    - I. Activated Partial Thromboplastin (aPTT)
    - J. Substitution Studies
    - K. Thrombin Time (TT)
    - L. Tourniquet Test
    - M. Whole Clot Lysis Test
    - N. Fibrinogen Degradation Products (FDP)

E. Unit V. Hemostasis and Disorders of Coagulation
Upon satisfactory completion of this unit the student will be able to:

1. Describe Disseminated Intravascular Coagulation (DIC)
2. Describe Primary Fibrinolysis and its contrast with DIC and Secondary Fibrinolysis.
3. Describe congenital versus acquired coagulation disorders.
4. Describe transient and permanent platelet disorders.
5. Describe factor disorders.
6. Discuss liver disease and its interference with coagulation.
7. Discuss renal disease and its interference with coagulation.
8. Discuss autoimmune disease and its interference with coagulation.
9. Discuss Vitamin K deficiency and its interference with coagulation.

F. Laboratory Procedures and Applications

1. The student will be able to perform various types of coagulation tests.
2. The Student Learning Objectives will enable the student to apply all the material in the course to daily laboratory life and testing.

III. THECB Learning Outcomes (WECM)

1. Apply principles of safety, quality assurance, and quality control in coagulation.
2. Evaluate specimen acceptability.
3. Compare and contrast coagulation processes under normal and abnormal human conditions.
4. Perform basic laboratory coagulation analysis.
5. Evaluate laboratory test results and correlate with patient condition(s)

IV. Evaluation

A. Preassesment

Students should have successfully completed the Specialized Admission Process to enter the Medical Laboratory Technology Program. Prerequisites and/or corequisites may be required for MLAB courses.

B. Postassessment

1. Quizzes, lecture exams, and a final comprehensive examination will be used to assess students' competency in didactic objectives.
2. Lab competency exams and lab practical exams will be used to assess students' achievements of psychomotor objectives.
3. Lab practical exams require students to demonstrate a particular skill learned in the lab component of the class.
4. Written unit exams will consist of the following question types: multiple choice, completion, essay, matching, spelling, analysis, and definition.

C. Final Examination

A comprehensive Final Exam is schedule for this course

D. Evaluation

To evaluate students' achievement of course objectives, student grades are tabulated using a final grade break down sheet. To successfully complete MLAB1227, Coagulation, the student must achieve at least a 70% in course components. The student's 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 70% on any exam, the instructor will encourage the student to conference with the instructor or tutor to review problem areas. Different learning and studying techniques will be discussed.

F. Grading

The following Grading Scale will be used in calculating the student's final grade for MLAB 1227, Coagulation.

Evaluation Tools	% Value	Grading scale
Quizzes	10%	A= 90-100%
Lecture Exam I	20%	B= 80-89%
Lecture Exam II	20%	C = 70-79%
Lecture Exam III	20%	D = 60-69%
Final Comprehensive Exam	30%	F = 59% and below
	100%	

(Coagulation lab is on a Pass/Fail basis. Laboratories will be graded on a pass or fail

system based on the competency limits set by the program for each individual procedure. An average of 80% is required to pass the laboratory portion of MLAB 1227, Coagulation)

Each grade will initially be determined in decimals to the tenths. The final grade, however, will only be recorded as a whole number. The guide used will be to round 0.1 through 0.4 to the lower whole number and 0.5 through 0.9 to the next whole number. Example: If at the end of the course a student earns an 87.4, the grade will be rounded to 87. If the student earns 87.6, the grade will be rounded to 88. No decimal will be shown in the final grade.

V. Disability Statement (Americans 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 need with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-58080; RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

VI. 6 Drop Rule

Student 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 Service if dropping because exemptions may apply. Refer to EPCC catalog and website for additional information.