

The University of Texas at El Paso
College of Health Sciences

Clinical Laboratory Science Program

CLSC 3155 - Clinical Chemistry Lab



Fall 2009

7. Explain quality assurance, quality control, internal and external and why statistics are necessary in the clinical laboratory.
8. Understand the difference between calibrators and controls.
9. Understand Levy-Jennings plots, Westgard rules, and the various terms used in evaluating QC/QA.
10. Competently perform all procedures introduced in this course within the appropriate standard deviation for the procedure.
11. Discuss role of the clinical laboratorian in point-of-care testing.
12. Competently perform simple dilutions using the proper techniques.
13. Competently perform enzymatic and colorimetric assays using a spectrophotometer.
14. Understand the functioning and operate instrumentation that performs electrolyte assays.
15. Understand the importance of laboratory mathematics.
16. Use proportions and ratios
17. Know the rules for rounding off numbers and for the use of significant figures.
18. Use exponents.
19. Describe the procedures for making a single dilution and a serial dilution.
20. Calculate the amount of one solution needed to make a solution of a lesser concentration from it.
21. Differentiate the expressions of solution concentration weight per unit weight, weight per unit volume, and volume per unit volume.
22. Know how to prepare a percent solution.
23. Describe the differences between molar and normal solutions and be able to calculate how to prepare solutions of a given volume and normality or molarity.

B. Affective

To show the appropriate responsible behaviors, students will demonstrate:

1. A positive attitude by being prepared for lecture and laboratory sessions, completing assigned tasks on time and displaying self-motivation.
2. Organization by utilizing time effectively, sequencing and prioritizing tasks for completion with time constraints and maintaining a neat clean work.
3. Attention to detail by diligently pursuing accuracy and documenting data accurately and legibly.
4. Problem solving ability by explaining purpose of each step in diagnosis, interpretation, procedure, recognizing discrepancies in techniques or procedures and repeating necessary lab tests when necessary.
5. Dependability by following directions, working independently after being given directions.
6. Stability and self-confidence by approaching and performing routine tasks confidently without assistance and maintaining composure.
7. Appropriate interpersonal skills by cooperating and communicating effectively with classmates and instructors and displaying courteous, considerate behavior and appropriate appearance.
8. Ethical behavior and integrity by respecting confidentiality of patient information, complying with professional standards and code of ethics, adhering to safety policies and abiding by all rules and regulations of the institution.

NO ONE WILL BE ALLOWED IN THE LABORATORY WITHOUT PROPER PERSONAL PROTECTIVE COVERING. UNIVERSAL PRECAUTIONS WILL BE OBSERVED AT ALL TIMES. AT THE INSTRUCTORS DISCRESSION, THE INSTRUCTOR MAY DISMISS A STUDENT WO DOES NOT HAVE THE PROPER PERSONAL PROTECTION.

COURSE POLICIES:

1) Required Text: Clinical Chemistry - Theory, Analysis, Correlations by L. Kaplan, A. Pesce and S. Kazmierczak (2003) 4th edition. Mosby, Inc.

2) Class Attendance: The student is expected to attend *all lab sessions and be on time*, wear protective equipment, and actively participate. It is responsibility of the student to notify the instructor of any absence and to provide legitimate documentation of absence to abide to University regulations. The instructor reserves the right to drop a student due to tardiness or absences when in the judgment of the instructor, a student has been absent to a degree as to impair his or her status relative to credit for the course. The instructor may drop the student from the class with a **W** before the course drop deadline or with an **F** after the course drop deadline. If a student is 10 minutes late this will be recorded as a tardy.

3) Instructional Strategies: The laboratory is competency based. The student must demonstrate their competency to perform the lab procedure at the designated level before they can progress to the next lab. Lab assignments must be written up and the procedures performed within the standard deviation for the procedure and to the satisfaction of the instructor for a pass/fail grade. If they receive a fail grade, the lab must be repeated until the student receives a pass grade. In a competency based program you are either competent to perform the procedure or you are not. No one progresses until they are competent. **THERE WILL BE NO MAKEUP LABS.** All competencies and repeats must be taken the day they are assigned unless extenuating circumstances occur. The student must take the initiative in this course and see that everything is learned and completed. A written exam will also be given for a letter grade and **MUST** be passed with at least the minimum passing grade of 75%.

4) Test Policy: Proficiency testing and quizzes will be given at various intervals on the material covered. No make ups will be offered. If you cannot attend a test for a legitimate reason (death, illness etc.) inform me as soon as possible and we will arrange a time to my schedule. **5% of final grade will be removed if the student misses any of the scheduled assessments for a legitimate reason.** (Make ups exams/quizzes, while they may cover the same material may differ from the exam/quiz taken by the rest of the class in organization, format, or specific item data.) Students should maintain a 75% or above average to continue in the program. Student participations will be taken into account for grade determination. The final grade for the laboratory will be calculated as follows:

a) Proficiency and mid-term exam	30%	(50% exam + 50% practical)
b) Quizzes	30%	
c) Attendance, Participation, Review	10%	
d) Final exam	30%	

5) Grading Scale: 90 – 100 =A, 80 – 89 =B, 75 – 79 =C, 70 or below =F

6) Academic Dishonesty: There is a zero tolerance level for academic dishonesty. Absolute honesty and integrity are a critical aspect of your chosen profession. Confidentiality of patient information is another. These must be strictly observed. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or material that are attributable on whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the *Handbook of Operating Procedures* (HOP), and available in the Office of the Dean of Students, may result in sanctions ranging from disciplinary probation, to failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

7) Supplementary Information:

2009 Clinical Chemistry Lab

**CHS 608
THURSDAY
(SECTION 1) 1-3PM
(SECTION 2) 4-6PM**

Tentative Laboratory Course Schedule

Week 1	Aug. 27	Calculations in clinical chemistry: dilutions / serial dilutions, weight/ concentrations / molarity, normality, specific gravity
Week 2	Sept. 3	Laboratory Safety / Basic lab principles/methods/reagents/equipment Specimen collection and processing / Pipetting techniques / Micro-pipetting techniques / Metric system / Lab mathematics
Week 3	Sept. 10	Calibration & control / normal ranges / statistical concepts.... Take Home Quiz 1
Week 4	Sept. 17	Beer's Law- Spectrophotometry and photometry -calculations based on photometric measurements
Week 5	Sept. 24	Blood glucose and cholesterol testing, protein conc. & determination
Week 6	Oct. 1	Quiz 2
Week 7	Oct. 8	Quality Control and Quality Assurance
Week 8	Oct. 15	Method Evaluation
Week 9	Oct. 22	Mid-term Exam
Week 10	Oct. 29	Electrophoresis Serum protein
Week 11	Nov. 5	Immuno-electrophoresisserum
Week 12	Nov. 12	Renal Function: Urea nitrogen, Creatinine -Take Home Quiz 3
Week 13	Nov. 19	Review- clean up
Week 14	Nov. 26	Thanksgiving Holiday
Week 15	Dec. 4	Final Exam -written