

**The University of Texas at El Paso**  
**College of Health Sciences**

***Clinical Laboratory Science Program***

***CLSC 3269 Immunohematology Laboratory***



**Course Outline**

## Laboratory Schedule

Monday & Wednesday 1-4 pm CLS Laboratory CHS Rm 137

**Instructor:** Lorraine Torres, Ed.D, MT (ASCP)

Email address: [lorit@utep.edu](mailto:lorit@utep.edu)

Phone: (915) 747-7282

**Office Hours:** TR 3:00–4:00 or by appointment

If you are unable to see me at this time, you may arrange an appointment for another time. You can reach me by phone at any time, if I am unable to answer your call, please leave a detailed message and I will return your call as soon as possible.

**Time in lab will vary! You must complete all your laboratory testing before you can leave the lab, therefore plan on staying until your assignments have been completed. Please let all the significant people in your lives know that there is a high probability that occasionally, especially towards the end of the semester, that you will be coming home late.**

## Texts

- Denise M. Harmening. Modern Blood Banking and Transfusion Practices. 7<sup>th</sup> ed. FA Davis Company. 2019.
- Blackboard folder: procedures and package inserts
- Technical Manual. Latest edition. AABB. (optional)

## Course Description

This laboratory course is designed to develop and refine skills in performing antigen and antibody identification techniques, compatibility testing and blood component preparation. Laboratory procedures for processing and selecting blood products, identification of blood group antigens and antibodies, blood storage procedures, fetomaternal hemorrhage, quality control and pre-analytical, analytical, and post analytical components of immunohematology and the application of safety to laboratory practice.

## Course Goal

This course is designed to provide the student with basic blood banking foundations and provides the student with a variety of blood banking experiences accomplished in blood transfusion service laboratories. This course is aligned to Health People 2020.

## 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 materials 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 violators 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 a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

## **Instructional Strategies**

This lab course is competency-based. In a competency-based program you are either competent to perform the procedures or you are not. **Each laboratory application contains cognitive enabling objectives which are to be answered in your own words. If you are working in groups to answer these questions you should scrutinize and verify the answers. There will be an exam on these objectives before each of the instructional units.** Procedures must be performed completely and *in a timely manner* to the satisfaction of the instructor. Each final grade for the laboratory exercises is determined by combining the cognitive exam and the practical exam (50% written and 50% practical). The student must pass with a minimum of 75% in order to proceed to the subsequent laboratory exercise. If the student fails, the lab must be repeated and passed that same week. If the student fails a second time, the student will be dropped from the laboratory. **THERE WILL BE NO MAKE UP LABS OR EXAMS.**

**STUDENTS WILL NOT BE ALLOWED IN THE LABORATORY WITHOUT SCRUBS AND PROPER PROTECTIVE COVERINGS. UNIVERSAL PRECAUTIONS WILL BE OBSERVED AT ALL TIMES. AT THE INSTRUCTORS DISCRESSION, THE INSTRUCTOR MAY DISMISS A STUDENT WHO DOES NOT HAVE THE PROPPER PERSONAL PORTECTION.**

**You will have a quiz at the beginning of each laboratory. Make sure that you read your performance objectives and methods BEFORE you come to class because you will be asked questions based on information given in these performance objectives and methods.**

## **Course objectives**

Upon successful completion of this laboratory course, and demonstrating 100% accuracy, the student should be able to:

- ❖ Identify and follow Blood Borne Pathogen Safety and OSHA regulations.
- ❖ Competently perform quality control procedures on reagents, instruments, refrigerators, and incubators.
- ❖ Competently perform and understand blood grouping and typing procedures in tube and gel systems
- ❖ Identify, judge, and differentiate types of ABO discrepancies and suggest methods to resolve these discrepancies.
- ❖ Explain the importance of concentrating on the task at hand when performing ABO and Rh groupings.
- ❖ Competently perform procedures for antibody detection and identification of single and multiple antibodies

- ❖ Competently perform procedures for compatibility testing.
- ❖ Competently perform cord blood grouping and fetal screens.
- ❖ Competently perform elutions, fetal screens.

Procedure	Minimum number performed with 100% accuracy
ABO typing (front, reverse, tube, slide)	20
Rh typing	10
ABO discrepancies	5
Du testing	3
Type and screen	5
Type and hold	5
Type and crossmatch	5
Single antibody	4
Multiple antibody	2
Elutions	3
Fetalscreen	3
Gel system	5
Quality control in blood bank (equipment, reagents, record keeping)	1

**RECORDING LECTURES IS NOT ALLOWED AT ANY TIME. NO TAPE RECORDERS, VIDEO RECORDERS OR CELL PHONES ARE PERMITTED IN THE CLASSROOM.**

### Lab examinations

Written exams will be given at the time of proficiency. The written exam must be completed before the student will be given the patient sample for analyses. **Both the practical and written exams must be completed within the time allowed. If the student has not completed the exam in the allotted time the sample will be turned in as an incomplete. If an incomplete is earned then the student must repeat the practical exam again with a deduction of 10 points. The repeat exam will be given on Friday from 8 – 10 only!** Grades are as follows:

- ❖ A: 100 – 90%
  - ❖ B: 89 – 80%
  - ❖ C: 79 – 75%
  - ❖ D: 74.9 – 70%
  - ❖ F: Below 70%
- There will be no rounding up of numbers therefore, 74.9% is not a passing grade!**

Practical exams (proficiency): The student must demonstrate **100% accuracy** in all laboratory procedures and recording results!

### Final Grade

The final grade for the laboratory will be calculated as follows:

- ❖ Proficiency exams 30% (50% exam + 50% practical)
- ❖ Midterm exam 20% (50% exam + 50% practical)
- ❖ Final Exam 35% (100% written)
- ❖ Quizzes 15% (pre-lab quizzes based on learning objectives)

## Tentative Blood Bank Laboratory Schedule

Jan 23	Safety and QC in the Immunohematology lab / Blood sample & preparation
	Blood Grouping and typing (front) tube
Jan 28	Blood Grouping and typing (reverse and front)
Jan 30	Blood Grouping and typing (reverse and front)
<b>FEB 4</b>	<b>Front and reverse typing proficiency (practical &amp; written)</b>
Feb 6	Front, reverse, and Rh typing including Du / ABO discrepancies
Feb 11	Front, reverse, and Rh typing including Du / ABO discrepancies
<b>Feb 13</b>	<b>Front, reverse, Rh, &amp; discrepancies proficiency (practical &amp; written)</b>
Feb 18	Type and Screen and Type and Hold
Feb 20	Type and Screen and Type and Hold
Feb 25	Type and Screen
<b>Feb 27</b>	<b>Type and Screen Proficiency (practical and written)</b>
March 4	Compatibility studies- The Cross match
March 6	Crossmatch
<b>MAR 11</b>	<b>Crossmatch proficiency (practical &amp; written)</b>
<b>MAR 13</b>	<b>MIDTERM: Type and screen and crossmatch 2 units Practical + Written</b>
<b>March 18</b>	<b>Spring Break</b>
<b>March 20</b>	<b>Spring Break</b>
March 25	antibody identification / tube
Mar 27	antibody identification
April 1	single and multiple antibody identification
April 3	<b>Single and multiple antibody identification Proficiency</b>
Apr 8	Elutions
<b>Apr 10</b>	<b>Elution proficiency (practical &amp; written)</b>
Apr 15	HDN & Fetal Screen
<b>Apr 17</b>	<b>HDN &amp; fetal screen proficiency</b>
Apr 22	Gel system
Apr 24	Gel System
Apr 29	Gel system
<b>May 1</b>	<b>Gel system proficiency (practical and written) Vitalant?</b>
May 6	Vitalant Tour ?
<b>May 8</b>	<b>Final Written</b>

NOTE: May 1 and May 6<sup>th</sup> may switch depending on availability of VITALANT