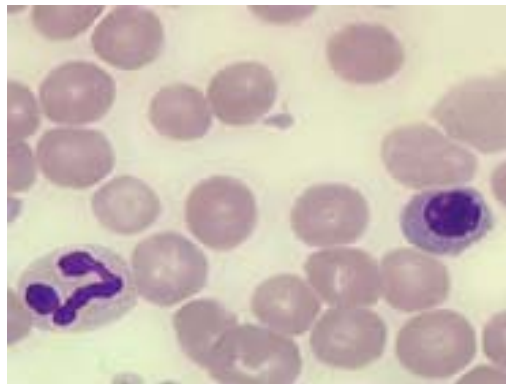


# UTEP Clinical Laboratory Science



CLSC 3356  
Hematology I

Course Outline



**INSTRUCTOR:**

M. Lorraine Torres  
BS, BSMT, MS, MT (ASCP), CLS (NCA), ABD  
College of Health Sciences, Room 601  
747-7282

Office hours: Tuesday & Thursday 10:30 - 12:00 or by appointment

**CLASS LOCATION and SCHEDULE: TBA**

**TEXTBOOKS:**

**Required**

Harmening, Denise, M. Clinical Hematology and Fundamentals of Hemostasis. 5<sup>th</sup> ed. F.A. Davis. 2009. ISBN 10: 0-8036-1732-1.

Anderson, S.C. & Poulsen, K. B. Atlas of Hematology. Lippincott Williams, & Wilkins. 2002. ISBN0-7817-2662-X.

Theriot, Betty. Clinical Laboratory Science Review a Bottom line Approach. Creative Educators. 1995. ISBN 0-9641523-0-4

**Optional**

Carr and Rodak. Clinical Hematology Atlas. W.B. Saunders. 1999. ISBN 0-7216-4174-1

Hillman, Robert and Finch, Clement. Red Cell Manual. 7th Ed. F.A. Davis. 1996. ISBN 0-8036-0124-X

Turgeon, M.L. Clinical Hematology: Theory and Procedures. 4<sup>th</sup> ed. Lippincott Williams, & Wilkins. 2004. ISBN 0-7817-5007-5.

**EXAMINATIONS:**

Four exams and a comprehensive final will be given. Exams are worth 30% of the total grade and the final is worth 40%. **No make up exams will be given.** If an exam is missed (0%) the final grade will be based on the average of 4 exams. None of the test grades will be dropped.

**UNANNOUNCED QUIZZES AND ASSIGNMENTS:**

Tickets to Class and unannounced quizzes will be given throughout the course and will constitute 15% of the final grade. There are no make-up exams or quizzes.

Assignments turned in late will automatically be lowered one grade level for each day it is late. **You will be required to create your own hematology atlas which will constitute 5 % of your grade and give a group presentation on anemias which will also be 10% of your grade.**



This is the “Ticket to Class” You will need one each time class meets. You will not be allowed to enter the class without a ticket unless you have a “free” day. The tickets are posted on WebCT and you are responsible for downloading them and completing the assignment.

**GRADING SCALE:**

A 100 - 90%  
 B 89 - 80%  
 C 79 - 75 %  
 D 74.9 – 70%  
 F 69 or below

**FINAL GRADE CALCULATION:**

Exams	30%
Quizzes/ homework	15%
Hematology Atlas	5%
Anemia Presentation	10%
Final	40%

**COURSE DESCRIPTION**

This course is the first part of a two part Hematology course series. Hematology I will cover the red cell series and Hematology II will cover the white cell series and hemostasis. Hematology I is designed to provide a basic understanding of the fundamental mechanisms involved in all facets of erythrocyte formation and function and etiology and treatment of red blood cell disorders. This course will examine normal and abnormal erythrocyte hematopoiesis and the resulting anemias, hemoglobinopathies, polycythemia, and other erythrocyte dyscrasias.

## **GOAL:**

This course is designed to introduce the basic concepts of hematology and its clinical application to the Clinical Laboratory Science student. This course will provide the student with the knowledge to accurately identify normal and abnormal components of the hematopoietic system and identify various testing procedures to evaluate the patient results in light of clinical evidence.

## **OBJECTIVES**

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

1. Recognize and describe normal and abnormal hematopoiesis and its manifestation in bone marrow and peripheral smears.
2. Demonstrate their ability to differentiate between normal and abnormal blood cells in the peripheral blood.
3. Select the appropriate hematological analysis and evaluate results in light of patient abnormalities.
4. Given patient blood results / data, the student should be able to recall objectives at the basic taxonomic and use this recall to interpret patient results to apply and examine knowledge gained and apply this knowledge in a problem-solving manner to correctly predict diagnose of the patient.
5. Synthesize and appreciate the importance of accurate testing and evaluation in providing the patient and the clinician with the accurate tools for diagnosis, treatment and disease prevention by evaluating patient results and correlating these results to situations when erroneous results are obtained either through instrument error or apathy among laboratoriens.

## **INSTRUCTIONAL STRATEGIES:**

Hematology is an entirely new subject for most students so it is imperative that the student keeps current in all the readings. **MAKE A SPECIAL EFFORT TO LEARN ALL THE HEMATOLOGY VOCABULARY.** Each assigned reading should be read at least twice. There will be a quiz at the beginning of almost every class. Habitual tardiness and absences call into question the maturity and interest of the student. Keep these to an absolute minimum to avoid being dropped from the program.

## TENTATIVE COURSE SCHEDULE

<b>DATE</b>	<b>Topic to be covered</b>
Aug 25	Overview of Hematology & Hematopoiesis
Aug 27	Bone Marrow / Red Blood Cell Structure & Function
<b>Sep 1</b>	<b>LABOR DAY NO CLASS</b>
Sep 3	Erythrocyte structure & function
Sep 8	Erythrocyte structure & function
Sep 10	Anemia: Diagnosis and Clinical Considerations
Sep 15	Evaluation of Cell Morphology
<b>Sep 17</b>	<b>EXAM 1 (Chapters 1 – 4 4<sup>th</sup> ed)</b>
Sept 22	Evaluation of RBC morphology
Sept 24	Hemoglobin and Iron Metabolism
Sept 29	Hypochromic anemias / Fe deficiency
Oct 1	Hypochromic anemias
Oct 6	Principles of Automation
Oct 8	Principles of Automation / QC & QA in the Hematology Lab
<b>Oct 13</b>	<b>EXAM 2 (chapters 5, 6, &amp; 29)</b>
Oct 15	Classification of anemias
Oct 20	Megaloblastic anemia
Oct 22	Megaloblastic anemia
Oct 27	Aplastic anemia
Oct 29	Aplastic anemia
Nov 3	Hemolytic anemia: Intracorpuscular defects: Hereditary defects of membrane
Nov 5	Intracorpuscular defects of membrane continued
<b>Nov 10</b>	<b>EXAM 3 (chapters 7, 8, 9; 4<sup>th</sup> ed)</b>
Nov 12	Hereditary enzyme deficiencies
Nov 17	Hemoglobinopathies
Nov 19	Hemoglobinopathies / Thalassemia
Nov 24	HEMOGLOBINOPATHIES
Nov 26	Paroxysmal Nocturnal Hemoglobinuria (PNH) Anemias Associated systemic nonhematologic disorders chap 13 and 14
Dec 1	<b>EXAM 4 (10 – 14 4<sup>th</sup> ed)</b>
Dec 3	Review and evaluations
<b>DEC 12</b>	<b>FINAL Room 233</b>

**The final is comprehensive**