

SCHOOL _____
DIVISION _____

COURSE TITLE: Medical Laboratory Hematology

COURSE NUMBER: Medical Laboratory Science _____ Lecture
Medical Laboratory Science _____ Laboratory

DESCRIPTION: Theory and application of clinical laboratory procedures used to identify and evaluate the formed elements of the blood and hemostatic mechanisms. Correlation of laboratory data with metabolic processes and disease states is explored.

FACULTY:

COURSE WEB SITE: http://_____
Powerpoint presentations are for educational purposes only and are not to be shared without permission.

REQUIRED TEXTS:

McKenzie, SB. *Clinical Laboratory Hematology*. 2nd edition. Pearson, 2010. **Required**

A Visual Tour of Red Blood Cells
A Visual Tour of White Blood Cells
www.CACMLE.org

Optional and Highly Recommended

DATE/LOCATION: _____ Semester
Lecture: Monday and Wednesday 12:10 – 2:00
Friday 8:00 – 8:55
Laboratory: Monday and Wednesday 8:00 – 10:45

PREREQUISITES: _____

COURSE OBJECTIVES: Following completion of this course, the student will:

1. Identify normal and abnormal cells found in the peripheral blood.
2. State the principle of each laboratory test studied.
3. Identify reference ranges for all hematological parameters considered.
4. Determine appropriate laboratory tests to evaluate a patient case history.

5. Correlate patient laboratory data with clinical history and pathophysiology.
6. Accurately perform laboratory tests to assist in the diagnosis of hematopathology.

COURSE EVALUATION	Lecture
Midterm 1	15%
Midterm 2	15%
Midterm 3	15%
Midterm 4	15%
Final	40%

Weekly quiz grades are included with the respective midterm examination. There are no make-ups for missed quizzes nor examinations.

COURSE EVALUATION	Laboratory
Practical I	15%
Practical II	15%
Practical III	15%
Rotation Practical	15%
Daily Laboratory Assignments/ Attendance	10%
Final Practical	30%

The 15% Daily Laboratory Assignment includes class preparation and participation, technique, test results obtained, and written reports

Students are expected to attend each laboratory session. More than three absences for any reason results in failure of the course.

A	93-100	C+	77-79
A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	D	67-69
B-	80-82	E	66 and below

STUDENT REQUIREMENTS:

All _____ students are required to research a Clinical Hematology topic of interest and prepare a 30 minute oral presentation on recent advances in the selected topic as it applies to the clinical diagnosis, management, and treatment of human disease. All presentation materials (Power Point slides, handouts, etc.) are due one week prior to the scheduled oral presentation **OR**

All _____ students will be required to write and present one complete case study on a clinical hematology topics of their choice. The case study is due no later than 5 PM on the 13th Friday of the semester. All case studies will include at a minimum, the following information:

✓ Patient History

- √ Table of Hematology and other related laboratory results as needed
- √ Discussion of the Case Study demonstrating a thorough understanding of the correlation of laboratory data with disease status

All case studies are to be typed, double spaced, and meet criteria set forth for publication in the _____ Case studies should be suitable for publication.

_____ students will be expected to spend approximately one additional hour per credit hour, per week on _____-related work associated with this course. The professor will meet periodically with honors students in a seminar/recitation environment.

COURSE EVALUATION for _____ : _____ Students

Midterm 1	15%
Midterm 2	15%
Midterm 3	15%
Midterm 4	15%
Final	30%
Case Study/Presentation	10%

ACADEMIC MISCONDUCT

Academic misconduct is defined as any activity that compromises the academic integrity of _____ or subverts the educational process. Academic misconduct of any nature will not be tolerated and will be dealt with in accordance with _____ Procedures and Rules.

STUDENTS WITH SPECIAL NEEDS

Students who feel they need an accommodation based on the impact of a disability should contact me to arrange an appointment as soon as possible (preferably the first week of the quarter). At the appointment, we can discuss the course format, anticipate your needs and explore potential accommodations. I rely on the _____ Services for assistance in verifying the need for accommodation and developing accommodation strategies. If you have not previously contacted the _____ Services, I encourage you to do so at _____.

Hematology
Semester 2014

Date	Lecturer	Topic	Laboratory	Textbook
Wed Aug 27		Movie: A Life Saved Normal Cells in the Peripheral Blood	Smear Preparation	p.1-8, 112-113, 120-124, 127, 764-779
Fri Aug 29		Anticoagulants, Hematocrit, and ESR		p.151-154
Mon Sept 1		Labor Day No class		
Wed Sept 3		Anticoagulants, Hematocrit, and ESR continued Hemoglobinometry, RBC and WBC Counts, Indices	Microscope Orientation Smear Preparation Differentials	p. 85-103
Fri Sept 5		Hemoglobinometry, RBC and WBC Counts, Indices continued RBC Morphology		p. 156-165
Mon Sept 8		RBC Morphology continued Homework Due	Smear Preparation Differentials	
Wed Sept 10		Coulter Counter Theory and Histograms How to Study Quiz 1	Differentials H/H ESR	p. 812-819
Fri Sept 12		RBC Maturation and Reticulocyte Counts		p.62-73, 154-156, 779-780
Mon Sept 15		RBC Maturation and Reticulocyte Counts continued Staining and QC of Differential Smears, Buffy Coats Histogram Homework Due	H/H Differentials	
Wed Sept 17		Granulocytic Maturation and Abnormal WBC Quiz 2	Reticulocyte Count Differentials	p. 108-113, 384-403
Fri Sept 19		Microcytic and Macrocytic Anemias		p.146-199, 257-282
Mon Sept 22		Midterm 1 (through Abnormal WBC)	Laboratory Practical 1	
Wed Sept 24		Macrocytic and Normocytic Anemias	Reticulocyte Count Differentials Path Cases 1-4	p. 283-297
Fri Sept 26		Hemolytic Anemias		p.298-382
Mon Sept 29		Hemoglobinopathies Quiz 3	Staining Smears Buffy Coats Path Cases 5-8	p.211-256

			Differentials	
Wed Oct 1		Thalassemia Histograms	G6PD Osmotic Fragility Path Cases 9-18	p. 231-256
Fri Oct 3		Pathology Cases 1-8		
Mon Oct 6		Pathology Cases 9-18 Lymphocyte and Plasma Cell Diseases	Sickle Cell Screen Hemoglobin Electrophoresis Differentials	p.421-443; 404-420; 528-567
Wed Oct 8		Midterm 2 (through Anemias)	Differentials Path Cases 19-28	
Fri Oct 10		Myeloproliferative Neoplasms Acute Myelogenous Leukemia		p. 444-480; 504-527
Mon Oct 13		Myelodysplastic Syndromes Quiz 4	Lab Practical II	p. 481-503
Wed Oct 15		Review of WBC Disease Pathology Cases 19-28	Path Cases 29-32 Coulter - OSUMC	
Fri Oct 17		Cytogenetics		p. 852-872
Mon Oct 20		Pathology Cases 29-32 Bone Marrow Examination	Path Cases 33-37 QBC Star	p. 31-61
Wed Oct 22		Introduction to Hemostasis Specimen Collection Quiz 5	Cytogenetic s Lab	p. 612-617; 639-670
Fri Oct 24		Routine Coagulation Testing		p. 889-894; 897-899
Mon Oct 27		Pathology Cases 33-37 Making of a Morphologist ASH and RBC Tour	Manual PT and APTT	
Wed Oct 29		Midterm 3 (through WBC Pathology)	Manual PT and APTT Differentials	
Fri Oct 31		Histograms to Solve WBC Tour		
Mon Nov 3		Fibrinolytic System Natural and Acquired Inhibitors of Coagulation Quiz 6	Manual PT and APTT Thrombin Times	p. 731-761; 902-905
Wed Nov 5		Hereditary Disorders of Hemostasis	Manual PT and APTT Thrombin Times Differentials Mixing Studies	p.699-745
Fri Nov 7		Acquired Disorders of Hemostasis		
Mon Nov 10		Role of Platelets in Hemostasis	Laboratory	p.612-638, 671-

		Quiz 7	Practical III	698
Wed Nov 12		Platelet Evaluation	Fibrinogen Curve Thrombin Times Factor XIII Screen Differentials	
Fri Nov 14		Correlating CBC Histograms with Clinical Conditions		
Mon Nov 17		Veterans Day No Class		
Wed Nov 19		Coagulation Path Cases	Factor Assays D-Dimer	
Fri Nov 21		Pediatric Hematology		
Mon Nov 24		Student Presentations	Differentials	
Wed Nov 26		Thanksgiving Break No Class		
Fri Nov 28		Thanksgiving Break No Class		
Mon Dec 1		Student Presentations	Case Study Practical Practice Rotational Practical	
Wed Dec 3		Review	Rotation Practical	
Fri Dec 5		Honors Projects		
Mon Dec 8		Midterm 4	Final Practical	

Syllabus_2014.redacted 3.18.15