

**HEMATOLOGY
MICROBIOLOGY 410
Fall, 2009
TENTATIVE LECTURE SCHEDULE
M,W 9:50-11:05 AM**

Instructor: Nancy L. McQueen, Ph.D.
Office B. S. 143, extension 2052, Email nmcquee@calstatela.edu
Office hours: Monday 11:30-12:30 PM

<u>Date</u>	<u>Topic</u>	<u>*Suggested Reading</u>
September 28	Introduction and Organization of Blood and Blood Forming Organs	Chp. 1,2
September 30	Structure and Function of Erythropoietic Tissue	Chp. 3
October 5	Structure and Function of Erythropoietic Tissue Classification of Anemias	Chp. 3 Chp. 4,5
October 7	Classification of Anemias/Iron Deficiency and Related Hypochromic Anemias	Chp.4-6, 14
October 12	Macrocytic Anemias	Chp. 7
October 14	Aplastic and Hypoplastic Anemias/Hemolytic Anemias- Hemoglobinopathies	Chp. 8,11,12
October 19	MIDTERM EXAM I (100 Points)	
October 21	Hemolytic Anemias - Hemoglobinopathies Hemolytic Anemias – Other Intracorpuseular Defects	Chp. 11,12 Chp. 9,10
October 26	Hemolytic Anemias - Extracorpuseular Defects	Chp. 13
October 28	Structure and Function of Leukopoietic Tissue	Chp. 1,15
November 2	Non-malignant Disorders	Chp. 15
November 4	Myeloproliferative Disorders/Myelodysplastic syndromes	Chp. 17-19
November 9	Introduction to Leukemias/Acute Leukemia	Chp. 16
November 11	Holiday	
November 16	MIDTERM EXAM II (100 points)	
November 18	Acute Leukemias/Chronic Leukemias	Chp. 16,17
November 23	Chronic Leukemias/Malignant Lymphoproliferative Disorders	Chp. 17,20-23
November 25	Primary Hemostasis	Chp. 24
November 30	Secondary Hemostasis	Chp. 24
December 2	Disorders of Hemostasis	Chp. 25-28

FINAL EXAM (200 POINTS) -

*Reading assignments are from Clinical Hematology and Fundamentals of Hemostasis (Fifth edition) Denise M. Harmening

MICROBIOLOGY 410 COURSE POLICIES

Course Objectives:

Upon completion of the course, the student will be able to:

- (1) List normal and abnormal maturation schemes of the cellular elements of blood in sequence using interchangeable terminology.
- (2) Describe the pertinent morphologic and functional changes that occur during normal and abnormal life cycles of the blood cells and reasons for these changes.
- (3) Use appropriate terminology to describe the cellular elements and their inclusions, products and functions.
- (4) Describe both primary and secondary hemostasis.
- (5) Describe and/or identify normal and abnormal cellular elements from Wright's stained blood smears.
- (6) Describe and/or identify common and significant clinical manifestations and cause(s) of various hematologic disorders.
- (7) Identify and briefly describe significant laboratory tests used to evaluate hematologic disorders and normal values of these tests.

Attendance:

Lecture attendance is left to the prerogative of the student, with the understanding that all information presented is the student's responsibility. Failure to come to class, however, will result in fewer participation points which will have a negative impact on your grade. Laboratory attendance is mandatory.

Grading:

Course grades will be determined according to the percentage of total points earned: 94-100% = A; 90-93% = A-; 87-89% = B+; 84-86% = B; 80-83% = B-, etc. The lecture will count as **3/4** of the course grade and the lab will count as **1/4**. The lecture portion of the class will have a total of 550 points possible; they are distributed as follows:

October 19–	Midterm Exam I (100 points).
November 16	Midterm Exam II (100 points). This exam is not comprehensive.
Various times	Case Studies homework (100 points total).
Various times	Active learning exercises participation (50 points total)
December 3 (8-10:30 AM)	Final Exam (200 points). This exam is comprehensive

Academic honesty:

Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at <http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation.

MICROBIOLOGY 410
HEMATOLOGY LAB
Fall, 2009

Objectives: Understand and interpret common parameters of a Complete Blood Count report. Perform accurate microscopic examinations of prepared peripheral blood smears (White Blood Cell differential count and Red Blood Cell morphology evaluation). Distinguish normal from abnormal blood cell morphology in prepared peripheral blood smears or photographs and drawings. Identify blood cell inclusions in prepared peripheral blood smears or photographs and drawings. Understand the origin and consequences of observed blood cell abnormalities.

ACADEMIC HONESTY: Students are expected to read and abide by the University's Academic Honesty Policy: <http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation.

Week 1	September 30	CBC/Normal Differential <i>O'Conner</i> pages 1-32, 166-167, 293-296; <i>Uthman</i> "1. Blood Cells and the CBC"; "2. Anemia: Pathophysiologic Consequences, Classification, and Clinical Investigation"
Week 2	October 7	RBC Maturation/Normal and Abnormal Morphology I <i>O'Conner</i> pages 37-39, 117-129, 131-134, 177-191; <i>Uthman</i> "3. Nutritional Anemias and Anemia of Chronic Disease"
Week 3	October 14	RBC Abnormal Morphology II, RBC Inclusions <i>O'Conner</i> pages 191-214, 242-243; <i>Uthman</i> "4. Hemolytic Anemias", "5. Hemoglobinopathies and Thalassemias"
Week 4	October 21	MID-TERM EXAM (125 points)
Week 5	October 28	WBC Maturation <i>O'Conner</i> pages 41-115, 135-175
Week 6	November 4	WBC Non-Malignant Disorders <i>O'Conner</i> pages 215-222, 254-255, 263-291
Week 7	November 11	Holiday
Week 8	November 18	Acute and Chronic Leukemias <i>O'Conner</i> pages 223-253, 256-262
Week 9	November 25	Review
Week 10	December 2	FINAL EXAM (175 points)

Grading: The total possible points earned are 300 (sum of Mid-Term and Final examinations). The Final exam will include material covered during the entire course. Letter grades will not be assigned or reported separately by the Laboratory Instructor.

Attendance: Attendance is required.

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Office Hours: By arrangement Wednesday 15:30 – 22:00

Required Text: *A Color Atlas and Instruction Manual of Peripheral Blood Cell Morphology*, Barbara H. O'Connor, M.S., S.H.(ASCP)

Internet: Home page of pathologist Ed Uthman, M.D.: <http://web2.iadfw.net/uthman> (last accessed 9-26-2009) **The Red Cell and Anemia** is a series of 5 HTML documents, also available in PDF.

Hematology Web Site of the New York Department of Health, Wadsworth Center, *Through the Microscope: Blood Cells*:
<http://www.wadsworth.org/chemheme/heme/microscope/celllist.htm> (last accessed 9-26-2009)

Home page of the *American Society of Hematology*: <http://www.hematology.org> (last accessed 9-26-2009) Educational materials include an Image Bank and Teaching Cases are located under **PUBLICATIONS**.

Home page of *Blood Line*: <http://www.bloodline.net/> (last accessed 9-26-2009) Image Atlas and Case Studies sections.