

UNIVERSITY OF WISCONSIN OSHKOSH
 MEDICAL TECHNOLOGY PROGRAM
Biology 344 INTRODUCTION TO HEMATOLOGY
Section 001 – Spring 2013

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|----------------------|--|-----------------|---|
| INSTRUCTOR: | John E. Strous, MS, MLS(ASCP) Director, Medical Technology Program | CLASS: | Medical Technology Lab HS 28 |
| OFFICE: | Halsey Science Center - Room 127 | TIME: | Lecture: M 11:30--12:30 HS 28 F 10:20--12:30 HS 28 Lab: W 11:30--1:40 HS 28 |
| OFFICE HOURS: | Many times available, by appointment | CREDITS: | 3 |
| PHONE: | 424-1487 | | |

TEXTS: The Morphology of Human Blood Cells, 6th edition, Diggs, L.W., Sturm, D., and A. Bell. Abbott Laboratories, Abbott Park, IL., 1985. [Handout]

Clinical Hematology and Fundamentals of Hemostasis, 5th edition, D.M. Harmening. F.A. Davis Company, Philadelphia, 2009. [Recommended]

Medical Technology Program Student Achievement Goals:

- 1) Graduates of the Medical Technology Program will demonstrate a broad foundation in basic chemistry, biology and microbiology.
- 2) Medical Technology graduates will demonstrate the theoretical knowledge and technical skills necessary to effectively function in the following major disciplines of Medical Technology: Clinical Chemistry, Hematology, Immunohematology (Blood Banking), Immunology and Microbiology. In each of these disciplines our students will be able to perform the relevant routine clinical laboratory tests according to the procedures in place at their internship site. Moreover, they will evaluate normal and abnormal controls and demonstrate proficiency with the instrumentation in use at their clinical site.
- 3) Our Medical Technology graduates will be able to anticipate and correlate expected results within the disciplines of Medical Technology to provide identification and confirmation of disease processes.
- 4) Medical Technology graduates will critically evaluate new analytical procedures and new instrumentation in order to keep pace with developing technologies.
- 5) Medical Technology graduates will be conscientious professionals in the clinical laboratory setting who can communicate with their peers, doctors and patients. They will function effectively as members of the health care system.

Course Objectives

Each student will be given laboratory exercises and objectives prior to the scheduled exercise.

Grading Policy

| | No. | Points | Total Points |
|--|-----|----------|-------------------------|
| Examinations | 3 | 100 each | 300 points |
| Practical Evaluation: | | | |
| Complete Blood count with Blood Indices & Differential | | | A = 450 points or above |
| Automated | 50 | 50 | B+ = 440-450 points |
| Manual | 50 | 50 | B = 410-440 points |
| Differentials | | | B- = 410-400 points |
| Making | | | C = 350-400 points |
| Staining | | | D = 300-350 points |
| Counting | | 100 | F = below 300 points |

*Attendance is mandatory, habitual tardiness is not acceptable; - 3% of point total for each unexcused absence.

| | | |
|---------------------------------------|----------------------|--------------------|
| Laboratory Safety and Professionalism | Minus 0-100 | <u>Minus 0-100</u> |
| | MAXIMUM TOTAL | 500 |

Biology 344 INTRODUCTION TO HEMATOLOGY

| WEEK OF: | LECTURE DAY | LECTURE TOPIC | READING ASSIGNMENT |
|---------------|-------------|--|---------------------------------------|
| (1) Jan. 28 | 1 2 | General Instructions Hemostasis | Chapter 24 |
| (2) Feb. 4 | 3 4 | Hemostasis Bleeding Disorders | Chapter 24 Chapters 25, 26, 27 |
| (3) Feb. 11 | 5 6 | Bleeding Disorders Principles of Staining | Chapters 25, 26, 27 To be assigned |
| (4) Feb. 18 | 7 8 | The Organelles of the Cell The Organelles of the Cell | To be assigned |
| (5) Feb. 25 | 9 10 | Hematopoiesis Hematopoiesis | Harmening Chapter 1 |
| (6) March 4 | 11 12 | Examination I Differentiation and Development | |
| (7) March 11 | 13 14 | Differentiation and Development Differentiation of Granulocytes | Chapter 1 |
| March 18 | | SPRING BREAK! | Have Fun!!! |
| (8) March 25 | 15 16 | Differentiation of Lymphocytes Differentiation of Monocytes | Chapter 1 |
| (9) April 1 | 17 18 | Erythrocytes: Development Erythrocytes: Structure and Function | Chapter 1 (p. 11-14) Chapter 3 |
| (10) April 8 | 19 20 | Production of Hemoglobin Production of Hemoglobin | Chapter 3 Chapter 3 |
| (11) April 15 | 21 22 | Examination Erythrocyte Disorders | Chapter 4 |
| (12) April 22 | 23 24 | Erythrocyte Disorders Erythrocyte Disorders | Chapter 6 Chapter 7 |
| (13) April 29 | 25 26 | Erythrocyte Disorders Leukocyte Disorders | Chapter 9 Chapter 15 |
| (14) May 6 | 27 28 | Leukocyte Disorders Final Examination | Chapters 16,17,19,20 |

*NOTE: This schedule will be modified after a review of the Medical Bacteriology (Biology 312/313) and Introduction to Instrumental Analysis (Chem 320) semester schedules. (also Junior Medical Technology major Spring courses.) Changes will be made to minimize examination conflicts and will be announced in class.

Biology 344 INTRODUCTION TO HEMATOLOGY

| WEEK | LABORATORY | READING ASSIGNMENT |
|----------------------|--|--|
| 1 | OSHA Regulations | |
| 2 | Bleeding Time Clot Retraction Whole Blood Clotting Time Prothrombin Time Partial Thromboplastin Time | Diggs Harmening (852-853) Handout Harmening (856-857) |
| 3 | Preparation and Staining of Differential Smears | Harmening (768-770) |
| 4 | Examination of Normal Differentials | Diggs Harmening (770-771) |
| 5 | Differential Counting | Handout Diggs |
| 6 | General Phlebotomy Unknown Differentials | Diggs |
| 7 | Examination of Abnormal Differentials | Diggs |
| SPRING BREAK! | | |
| 8 | Hematocrit and Hemoglobin | Hemoglobin Handout Harmening (771-772) |
| 9 | Erythrocyte and Leukocyte Count | Harmening (765-768) |
| 10 | Erythrocyte and Leukocyte Count | Harmening (765-768) |
| 11 | Reticulocyte Count Blood Indices Examination of Slides | Harmening (772-775) Diggs |
| 12 | Platelet Count Examination of Slides | Harmening (767-768) Diggs |
| 13 | Examination (Laboratory) CBC with Differential, Automated | |
| 14 | Examination (Laboratory) CBC without Differential, Manual | |

***This schedule will be modified - see note on previous page.**

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| (1) Jan. 28 | 1 2 | General Instructions Hemostasis | Chapter 24 |
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| (4) Feb. 18 | 7 8 | The Organelles of the Cell The Organelles of the Cell | To be assigned |
| (5) Feb. 25 | 9 10 | Hematopoiesis Hematopoiesis | Harmening Chapter 1 |
| (6) March 4 | 11 12 | Examination I Differentiation and Development | Monday March 4 Exam I (through Hematopoiesis) |
| (7) March 11 | 13 14 | Differentiation and Development Differentiation of Granulocytes | Chapter 1 |
| March 18 | | SPRING BREAK! | Have Fun!!! |
| (8) March 25 | 15 16 | Differentiation of Lymphocytes Differentiation of Monocytes | Monday April 1 Exam II (through Hemoglobin) Chapter 1 |
| (9) April 1 | 17 18 | Erythrocytes: Development Erythrocytes: Structure and Function | Chapter 1 (p. 11-14) Chapter 3 |
| (10) April 8 | 19 20 | Production of Hemoglobin Production of Hemoglobin | Chapter 3 Chapter 3 |
| (11) April 15 | 21 22 | Examination Erythrocyte Disorders | Chapter 4 |
| (12) April 22 | 23 24 | Erythrocyte Disorders Erythrocyte Disorders | Monday April 22 Exam III (through leukocytes) Chapter 6 Chapter 7 |
| (13) April 29 | 25 26 | Erythrocyte Disorders Leukocyte Disorders | Chapter 9 Chapter 15 |
| (14) May 6 | 27 28 | Leukocyte Disorders Final Examination | Monday May 6, Wednesday May 8, Friday May 10 Lab Practicals?? Chapters 16,17,19,20 |



**New Lecture and Lab Exam Schedule
above for Spring 2013.**

*NOTE: This schedule will be modified after a review of the Medical Bacteriology (Biology 312/313) and Introduction to Instrumental Analysis (Chem 320) semester schedules. (also Junior Medical Technology major Spring courses.) Changes will be made to minimize examination conflicts and will be announced in class.

NOTIFICATIONS:

DISABILITY SERVICES

The University of Wisconsin Oshkosh is committed to providing reasonable accommodation for students with disabilities. Please contact the Disability Services [Dean of Students Office, 125 Dempsey Hall, 424-3100 (Voice), 424-1319 (TTY)] for the University's accommodation request form or visit their website at <http://www.uwosh.edu/dean/disabilities.htm>. Information related to an individual's accommodation request or other arrangements will be confidential and will be shared with relevant University personnel or offices on a "need to know" basis.

ELECTRONIC DEVICES

The use of electronic devices (computers, cell phones, recorders, etc) during class, lab exercises, or exams must be individually approved by the course instructor.

ATTENDANCE

Attendance is required – if a student must miss class they must obtain permission/provide notification prior to that class. Unexcused absence will result in loss of 3% of a students total points.

CONTACT INFORMATION

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