

Oakland University
Biomedical Diagnostic and Therapeutic Sciences

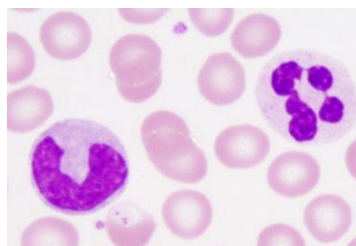
MLS 4170
Hematology Laboratory
Winter 2018

Professor: Lisa DeCeuninck MT (ASCP)
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Office Hours: T,Th 10:00-12:00, or by appointment

Lab
Day/Time: TR 8:00-10:00
Location: HHB 5020

Lab
Day/Time: TR 12:30-2:30
Location: HHB 5020



Course description: To accompany MLS 4160. The student will learn the principles and techniques of blood cell analysis and the concepts of blood cell pathology and body fluid cell identification and their applications in a clinical laboratory.

Required Texts:

Atlas of Hematology, 2nd edition. Anderson Young, SC, Poulsen, KB. Wolters Kluwer/Lippincott Williams & Wilkin. ISBN: 978-1451131505. <http://thePoint.lww.com/Andersonatlas2e>

Clinical Laboratory Hematology, McKenzie & Williams, ed. Pearson Publishers. ISBN: 978-0-13-307601-1

Required Supplies: Calculator

Course Objectives: The student will achieve, upon completion of this course, the ability to:

1. Describe, explain, and perform aspects of the CBC:
 - a. Units of measure
 - b. Reference intervals
 - c. RBC morphology/indices/inclusions/pathology
 - d. WBC morphology/inclusions/pathology
 - e. Platelet morphology/pathology
2. Describe, explain, and perform hematologic techniques and automation:
 - a. Wedge smear/Differential
 - b. Hemoglobin concentration
 - c. Erythrocyte sedimentation rate
 - d. Sickle cell diagnoses
 - e. Principles of automation/scattergrams

Class Policies:

1. Academic conduct policy: All members of the academic community at Oakland University are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and one's work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned. Following are some examples of academic dishonesty:
2. Cheating on examinations. This includes using materials such as books and/or notes when not authorized by the instructor, copying from someone else's paper, helping someone else copy work, substituting another's work as one's own, theft of exam copies, or other forms of misconduct on exams.
3. Plagiarizing the work of others. Plagiarism is using someone else's work or ideas without giving that person credit; by doing this students are, in effect, claiming credit for someone else's thinking. Whether students have read or heard the information used, they must document the source of information. When dealing with written sources, a clear distinction should be made between quotations (which reproduce information from the source word-for-word within quotation marks) and paraphrases (which digest the source of information and produce it in the student's own words). Both direct quotations and paraphrases must be documented. Even if students rephrase, condense or select from another person's work, the ideas are still the other person's, and failure to give credit constitutes misrepresentation of the student's actual work and plagiarism of another's

ideas. Buying a paper or using information from the World Wide Web or Internet without attribution and handing it in as one's own work is plagiarism.

4. Cheating on lab reports by falsifying data or submitting data not based on the student's own work.
5. Falsifying records or providing misinformation regarding one's credentials.
6. Unauthorized collaboration on computer assignments and unauthorized access to and use of computer programs, including modifying computer files created by others and representing that work as one's own
7. You are expected to prepare for and take exams on the date and time scheduled. Additional time for exams will not be allowed if you are tardy. You will receive a zero for missed exams and labs due to unexplained absences. You will have 90 minutes for your exams. Practical exam images will be displayed for a predetermined allotted time. Images will be shown twice and you will not be given extra time.
8. **Add/Drops:** The university policy will be explicitly followed. It is the student's responsibility to be aware of deadline dates for dropping courses.
9. **Special Considerations:** Students with disabilities who may require special considerations should make an appointment with campus Disability Support Services, 106 North Foundation Hall, phone 248 370-3266. Students should also bring their needs to the attention of the instructor as soon as possible. For academic help, such as study and reading skills, contact the Academic Skills/Tutoring Center, 103 North Foundation Hall, phone 248 370-4215.
10. **Attendance:** In accordance with professional behavior, it is expected that you will attend course lectures/labs and be punctual. If you are unable to come to a class, professional courtesy asks that you send an email (deceunin@oakland.edu) explaining your absence.
11. **Laboratory Safety:** The laboratory component of this course requires you to work with specimens of human origin. Following Standard Precautions is mandatory and includes the wearing of a lab coat, shoes (not sandals), and gloves. You must wash your hands before leaving the lab. Sharps must be placed in a sharps container and waste disposed of properly. You may not use a cell phone during class. No food or drink allowed in lab at any time.

Course Evaluation:

3 Exams with practical-	50 %
Assigned boxes and smears -	20 %
5 quizzes -	15 %
Homework/Unknowns/Checklist -	15 %

Lab Homework/Unknowns/Checklist:

Homework assignments are due at the beginning of the lab period, before lecture starts. Assignments turned in after lecture starts will be given a **zero**. Lab reports (when applicable) must be turned in before leaving the lab. Reports turned in late will be given a **zero**.

10 normal unknown WBC differentials, 5 blood smears, 15 case studies, and assigned boxes are due by the dates stated on the schedule. For every day that an item is late, a 5% grade reduction will be applied. Extra lab time will not be offered so plan your time well to complete these assignments on time.

You are required to clean your bench and care for your microscope during and after each lab. You will clearly (legibly) initial that you have done so every day. Failure to do so on more than 2 occasions will result in a 10% grade reduction.

Percent	Grade point
98-100	4.0
97	3.9
96	3.8
95	3.7
94	3.6
90-93	3.5
88-89	3.4
86-87	3.3
85	3.2
84	3.1
80-83	3.0
79	2.9
78	2.8
77	2.7
76	2.6
75	2.5
74	2.4
73	2.3
72	2.2
71	2.1
70	2.0
69	1.9
68	1.8
67	1.7
66	1.6
65	1.5
64	1.4
63	1.3
62	1.2
61	1.1
60	1.0

If more than **3 unexcused lab periods** are missed, you will receive a 0 for the class, and will need to repeat it for credit.

If you are **late for more than 3 lab periods**, your total grade for the class will be reduced by 10%.

Schedule: Dates are subject to change 2018

Date	Topic	Lab	Reading	Homework
1/4	1. CBC and Blood smears	<ul style="list-style-type: none"> Preparation of blood smears 	McKenzie, Williams: <ul style="list-style-type: none"> Chapter 10 (155-157, 160-164, 172-174) Chapter 37 (785-791) 	<ul style="list-style-type: none"> Assignment 1 (due 1/9)
1/9	2. Stains, microscopy, smear evaluation	<ul style="list-style-type: none"> Staining smears Koehlering 		
1/11	3. Normal WBC morphology	<ul style="list-style-type: none"> WBC cell identification 		
1/16	Quiz 1 (topics 1-2)	<ul style="list-style-type: none"> WBC differential 		
1/18	4. Absolute and relative WBC counts	<ul style="list-style-type: none"> Normal diffs (with estimates) 	McKenzie, Williams: <ul style="list-style-type: none"> Chapter 37 (792-793, 798-799) Chapter 39 (830-835) Chapter 5 (59-63) 	<ul style="list-style-type: none"> Assignment 2 (due 1/25 ...it will help you study for Quiz 2)
1/23	5. Instrumentation / RBC Indices / Scattergrams	<ul style="list-style-type: none"> Normal diffs (with estimates) 		
1/25	Quiz 2 (topics 3-5)	<ul style="list-style-type: none"> Normal diffs 		
1/30	6. RBC Maturation / Reticulocytes	<ul style="list-style-type: none"> Retic Slides Normal Diffs 		
2/1	Exam 1 with practical (topics 1-6)	<ul style="list-style-type: none"> Continue normal diffs 		
2/6	7. RBC Inclusions/Morphology	<ul style="list-style-type: none"> RBC study slides Normal Diffs 	McKenzie, Williams: <ul style="list-style-type: none"> Chapter 10 (164-172) Chapter 37 (796-797) 	<ul style="list-style-type: none"> Pre-labs for ESR, Hgb, Hct, Sicklequik Assignment 3: Case studies (due 2/15)
2/8		<ul style="list-style-type: none"> ESR, Hct Sicklequik 		
2/13		<ul style="list-style-type: none"> Normal Diffs 		
2/15	Quiz 3 (topic 7, ESR, Hct, sicklequik)	<ul style="list-style-type: none"> 10 Normal Unknown Diffs due at end of lab 		
2/27	8. Nonmalignant myeloid and lymphoid disorders	<ul style="list-style-type: none"> Abnormal case study diffs 	McKenzie, Williams: <ul style="list-style-type: none"> Chapter 24-26 	<ul style="list-style-type: none"> Assignment 4: Case studies (due 3/1)
3/1	9. WBC development	<ul style="list-style-type: none"> Abnormal case study diffs 		
3/6	Quiz 4 (topics 8-9) 10. MPN / MDS	<ul style="list-style-type: none"> Abnormal case study diffs 		
3/8	11. Systematic CBC	<ul style="list-style-type: none"> Abnormal case study diffs 		
3/13	Exam 2 with practical (topics 7-10)	<ul style="list-style-type: none"> 5 Blood smears due 		
3/15	12. Lymphoproliferative Disorders	<ul style="list-style-type: none"> Abnormal case study diffs 	McKenzie, Williams: <ul style="list-style-type: none"> Chapter 27-28 Chapter 38 Chapter 30 	<ul style="list-style-type: none"> Assignment 5: Case studies (due 3/22)
3/20		<ul style="list-style-type: none"> Abnormal case study diffs 		
3/22	13. Bone marrow	<ul style="list-style-type: none"> Bone marrows Abnormal case study diffs 		
3/27	14. Body fluids	<ul style="list-style-type: none"> Body fluids 		
3/29		<ul style="list-style-type: none"> 15 Abnormal case study diffs due 		
4/3	Quiz 5 (topics 12-14)	<ul style="list-style-type: none"> Abnormal diffs 		
4/5		<ul style="list-style-type: none"> Abnormal diffs 		
4/10		<ul style="list-style-type: none"> Abnormal diffs 		
4/12		<ul style="list-style-type: none"> Abnormal diffs 		
4/17	Comprehensive final with Practical / Boxes Due			