**MLAB 1315.021 – HEMATOLOGY (HYBRID)**

**Course Syllabus:**  Spring 2022 

***“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”***

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| **Office**  **Hours** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Online** |
| 10:30-11:30  1:30-4:30 | 9:30-11:30 | By appt | 9:30-11:30  1:30-3:30 | By appt | Available |

***This syllabus is an agreement between the instructor and the student.***

*Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified by the instructor.*

**Course Description:** 3 credit hours.

Lecture/Lab/Clinical: Two hours of online lecture and four hours of lab each week (Tues 1300-1650)

The study of blood cells in normal and abnormal conditions. Instruction in the theory and practical application of hematology procedures, including quality control, quality assurance, safety, manual and/or automated methods as well as blood cell maturation sequences, and normal and abnormal morphology and associated diseases.

**Prerequisite(s):** Admission to MLT program or Department approval

# Student Learning Outcomes:

# Apply principles of safety, quality assurance, and quality control throughout the pre-analytical, analytical, and post-analytical processes in Hematology.

# Describe the basic components and physiology of human blood.

# Describe the disease states associated with abnormal hematological tests

# Identify the laboratory tests required to evaluate blood cell function.

# Perform basic laboratory hematological tests

# Evaluate laboratory findings and correlate with clinical conditions

**Evaluation/Grading Policy:**

*A ≥90%*

*B 80-89%*

*C 70-79%*

*D 60-69%*

*F <60%*

*Lecture grade: 4 exams 20% each*

*Quiz Average 20%*

*Laboratory grade: 2 practical exams (midterm and final) 25% each*

*Lab reports/homework average 25% each*

*Final grade: 75% of lecture grade and 25% of laboratory grade*

***Grades will be posted on Blackboard the Monday following due date.***

***A minimum grade of “C” is required in both the lecture and laboratory components of all Medical Laboratory Technician courses. Failure to meet the minimum passing score in each area will result in a “D” for the course and dismissal from the program.***

**Required Instructional Materials:** Cielsa, Betty: Hematology in Practice, 3rd Edition, F.A. Davis Company, 2018

Carr, J.H., Clinical Hematology Atlas, Elsevier, 6th Edition, 2021.

# Publisher: F.A. Davis Company ISBN Number: 9780803668249

# Elsevier 9780323711920

# Optional Instructional Materials: Powerpoints, lectures and additional resource material on Blackboard or via email

**Required Computer Literacy Skills**:

Computer

Most Windows or Mac desktop and laptop computers work well for online classes.

Chromebooks use the Chrome operating system which is not a supported operating system for Blackboard. Some areas of Blackboard require Java on your computer, and Chromebooks do not support the use of Java. If you use a Chromebook, please be sure you also have access to a Mac computer or Windows computer so you can fully participant in your Blackboard class. Some things will not work on a Chromebook.

Please do not ONLY rely on a tablet, including an iPad, or a smartphone to use Blackboard. Not all features will work on tablets and smartphones. You may need access to a full computer to be able to do everything in your Blackboard class.

You will need to scan documents and upload them to Blackboard. You can use a scanner attached to a computer, a smartphone app, or your cell phone’s camera.

Internet Access

While Bb can be accessed with dial-up online service, best results will be obtained when using a broadband Internet service.

Intermediate Internet Skills

You should be familiar with how the Internet works including following links and searching for information.

Intermediate Word Processing Skills

You should be familiar with how to enter data (text) on a word processing document, format text, and save documents.

Java

Make sure your computer is running the current version of java. It is a free download at [www.java.com](http://www.java.com).

Internet Browser

Supported browsers for use with Blackboard include Firefox, Google Chrome, Internet Explorer, and Safari. If you experience any problems in Blackboard we recommend you login to the portal and Blackboard from another browser before seeking assistance from NTCC Technical support.

# Course Structure and Overview:

**Unit 1**: **Basic Hematology Principles**

Chapters 1-4

**Unit 2: Red Blood Cell Disorders**

Chapters 5-8

**Unit 3: White Blood Cell Disorders**

Chapters 9-14

This is a Hybrid class which means class meets once a week and all other instruction is done online via the learning management system BLACKBOARD. In class meetings will be reserved for homework review, labs, and exams. Students are expected to complete all the readings of the required book chapters, review PowerPoints, and complete the online chapter activities. You will see that the course is divided into 17 weeks in the Blackboard portion. Each week you will be expected to complete certain online assignments for the chapters found in that week's folder. This course requires daily computer and internet access. You should expect to spend no less than 9 hours a week in this course. Pay close attention to deadlines for all assignments. Technical difficulties are no excuse for late assignments. A due date assignment schedule is posted in the START HERE folder in Blackboard the entire semester! Please check it weekly so that you know what is due and do not miss anything.

Quizzes: Taken on-line, multiple-choice questions over topics covered in the Lesson’s readings and PowerPoint. 14 quizzes averaged together for 20% of lecture grade; grades reflected immediately in Blackboard

Homework: MediaLab assignments. Students will be given a MediaLab user name and password. They will complete the learning activity and assessment on MediaLab and submit their certificate of completion on Blackboard. 11 assignments averaged together for 25% of lab grade; if turned in Tuesday will be graded by Wednesday

Exams: Multiple choice questions from quizzes and homework taken on laptop; each is 20% of Lecture grade; grade reflected immediately in Blackboard

Lab Worksheets: completed in-class. 13 labs averaged together for 25% of lab grade; grade posted on Wednesday following lab. Your daily lab grade will be calculated as follows: 25% attendance (on-time and present; if not, grade is a zero for this portion regardless if lab is made up), 25% good attitude, and 50% accuracy of results. The accuracy of your results will be graded as follows:

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| --- | --- |
| w/in 20% | 100 |
| w/in 30% | 90 |
| w/in 40% | 80 |
| w/in 50% | 70 |
| w/in 60% | 60 |
| w/in 70% or less | 50 |

**Communications**: EMAIL: E-mail preferred. E-mails will be responded to within 24 hours during the work week(Monday – Thursday 8am-6pm and Friday 8-noon). Please check your NTCC email EVERYDAY. Email is the official form of communication used here at NTCC.

TEXT MESSAGE NOTIFICATIONS: You are required in this course to sign up for the text message notifications via Remind. I will use Remind to get information out to students quickly. This will enable you to receive important class announcements and reminders from me via text message so that you will not miss out on any assignment changes or important updates. To be added to the Remind group text @4h287gf to 81010. Please continue to check your NTCC email daily.

ANNOUNCEMENTS: These can be found in Blackboard under the course link on your Bb homepage. Please make sure you are reading any announcements thoroughly when they are posted there.

# Institutional/Course Policy:

**Classroom Expectations:**

1. Attend all labs, be on time, and remain in class for the entire period.

***If students are habitually late, the classroom door will be locked at the start of class.***

If you must leave early, please inform the instructor before class begins.

2. Complete assigned readings before lab.

3. Be prepared to take notes and participate in lab.

4. You must EARN your grade; I do not GIVE grades, so study, study, study!

Average study time is 2-3 hours per hour of lecture/class time a week.

5. Be respectful of your classmates and instructors.

# 6. Turn off cell phones or set to vibrate.

**Attendance and Absences:** You are expected to attend ALL scheduled labs and take the exams as scheduled. You will be held responsible for all information covered in lab. *If you will be absent, inform the instructor by phone or email at least 15 minutes BEFORE class begins. Absences will be counted as unexcused if the instructor is not informed in a timely manner*. **Excessive unexcused absences will result in loss of points from your grade. More than two unexcused absences will result in a reduction of five (5) points being subtracted from your final grade (percentage). More than five unexcused absences will result in the student being dropped from the course. Two unexcused late class attendance equals one unexcused absence. Students with perfect attendance will have five (5) points added to their final exam.**

**Makeup Policy:** Late work will be accepted for quizzes and homework with a 10% late penalty. Assignments will be available on Blackboard each Tuesday and due by the following Tuesday at 1pm. Late work will be accepted until Friday at noon. After that date and time, a grade of zero will be entered for any work not completed. The student is responsible for requesting a makeup when they are unable to attend a regularly scheduled examination. Makeup exams and labs will be scheduled only in the event of an EXCUSED absence. All makeup exams and labs will be on the Monday following the absence during office hours. If the test or lab is not made-up, the student will receive a zero for that exam or lab.

# NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

# ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website[.](http://www.ntcc.edu/index.php?module=Pagesetter&func=viewpub&tid=111&pid=1)

# Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children’s educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered “eligible students.” In essence, a parent has no legal right to obtain information concerning the child’s college records without the written consent of the student. In compliance with FERPA, information classified as “directory information” may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student’s name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Tentative Course Timeline (\*note\* instructor reserves the right to make adjustments to this timeline at any point in the term):**

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| **Week** | **Date** | **On-line** | **Lab** |
| **1** | Jan 18th | * Read everything in start course here folder * Read Ch 1&2 in book, view PowerPoints * Complete Syllabus Acknowledgement quiz * Complete Ch1&2 quiz * Complete Media Lab Assignment “Normal Peripheral Blood Cells” and upload certificate of completion on Blackboard | Calculate QC statistics  Ch 20 |
| **2** | Jan 25th | * Read Ch 3&4 in book, view PowerPoints * Complete Ch3&4 quiz * Complete Media Lab Assignment “Bone Marrow Aspiration” and upload certificate of completion on Blackboard | Evaluate QC ranges  Compare Microcrit to Analyzer pg 346  Manual Diff pg 353 |
| **3** | Feb 1st | * Review Quizzes for Ch 1-4 * Review previous Media Lab assignments * Complete Media Lab Assignment “RBC Morphology” | Reticulocyte pg 350  Manual Diff pg 353  Evaluate RBC morphology pg 356 |
| **4** | Feb 8th | Exam 1 (Ch1-4)  In-Class on Laptop | Manual Diff pg 353  Perform platelet estimate pg 355 |
| **5** | Feb 15th | * Read Ch 5&6 in book, view PowerPoints * Complete Ch 5&6 quiz * Complete Media Lab “Describing a RBC Population Using RBC Indices and RDW” upload certificate of completion on Blackboard | Manual Diff pg 353  WBC Est pg 354 |
| **6** | Feb 22nd | * Read Ch 7&8 in book, view PowerPoints * Complete Ch 7&8 quiz * Complete Media Lab “Red Cell Disorders” and upload certificate of completion on Blackboard | Manual Diff pg 353  ESR pg 348 |
| **7** | Mar 1st | * Review Quizzes for Ch 5-8 * Review previous Media Lab assignments * Complete Media Lab “Hemoglobinopathies” | Manual Diff pg 353  Sickle screen pg 360 |
| **8** | Mar 8th | Exam 2 (Ch 5-8)  In-Class on Laptop | Lab Practical  Manual Diff |
| **9** | Mar 15th | Spring Break |  |
| **10** | Mar 22nd | * Read Ch 9&10; View PowerPoints * Complete Ch 9&10 quiz * Complete Media Lab “Variations in WBC Morphology” and upload certification of completion on Blackboard | QC Hemocytometer pg 359  Manual Diff (Reactive Lymphs) |
| **11** | Mar 29th | * Read Ch11&12; View PowerPoints * Complete Ch 11&12 quiz * Complete Media Lab “Acute Leukemia with a Focus on WHO Classification” and upload certificate of completion on Blackboard | Manual Diffs  AML  Blasts |
| **12** | Apr 5th | * Review Quizzes for Ch 9-12 * Review previous Media Lab assignments * Complete Media Lab “Myeloproliferative Neoplasms” | RBC Hemocytometer pg 359 |
| **13** | Apr 12th | Exam 3 (Ch 9-12)  In-Class on Laptop | WBC Hemocytometer  Pg 359 |
| **14** | Apr 19th | * Read Ch 13; View PowerPoint * Complete Ch 13 Quiz * Complete Media Lab “Introduction to Flow Cytometry” and upload certificate of completion on Blackboard | RBC & WBC Hemocytometer  Pg 359  Manual Diff CLL |
| **15** | Apr 26th | * Read Ch 14; View PowerPoint * Complete Ch 14 Quiz * Complete Media Lab “Myelodysplastic Syndromes” and upload certificate of completion on Blackboard | RBC&WBC Hemocytometer  Pg 359  Manual Diff old blood |
| **16** | May 3rd | * Review Ch 1-14 * Review all previous Media Lab assignments | Lab Final  Manual WBC and RBC with differential |
| **17** | May 10th | FINAL EXAM (Ch 1-14)  In-Class on Laptop |  |

All of the listed week’s work is due by the following Tuesday at 1300. I will accept late work with a 10% penalty until Friday at noon following the due date. Make sure you understand due dates. Should you have questions you may email me at csokol@ntcc.edu. I highly recommend submitting all assignments early. Again, if there are any questions about the schedule please email me at csokol@ntcc.edu or send message via Remind.