



## MLAB 2401 021 – Clinical Chemistry (Hybrid)

Course Syllabus: Fall 2026

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

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| Weekday   | Office Hours |
|-----------|--------------|
| Monday    | 1330-1600    |
| Tuesday   | 1330-1600    |
| Wednesday | 0930-noon    |
| Thursday  | 1330-1600    |
| Friday    | By appt      |
| Online    | By appt      |

**This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.**

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

**Course Description:** 4 credit hours.

Lecture/Lab/Clinical: Four hours of online lecture and three hours of lab each week.

This course is an introduction to the principles and procedures of various tests performed in Clinical Chemistry. Presents the physiological basis for the test, the principle basis for the test, the principle and procedure for the test, and the clinical significance of the test results, including quality control and reference values. Also includes basic chemical laboratory technique. Chemical laboratory safety, electrolytes and acid-base balance, proteins, carbohydrates, lipids, enzymes, metabolites, endocrine function, and toxicology.

Prerequisite(s): [CHEM 1406](#) or [CHEM 1411](#) and admission to MLT program with department approval

### Student Learning Outcomes:

The primary goal of this course is to provide students with an understanding of the basic principles and techniques of clinical chemistry. Upon completion of this course, the student should be able to do the following:

1. Exhibit knowledge of human body chemistry levels under healthy and abnormal conditions.
2. Evaluate the suitability of clinical specimens.
3. Explain and perform procedures routinely performed in a clinical chemistry laboratory, including:
  - a. Electrolytes
  - b. Blood gases and acid-base balance
  - c. Proteins and enzymes
  - d. Carbohydrates and lipids

- e. Liver, kidney, and endocrine function
  - f. Toxicology and therapeutic drug monitoring (TDM)
  - g. Vitamins and trace elements
4. Evaluate laboratory test outcomes and correlate test results with patient conditions

## Evaluation/Grading Policy:

*The breakdown of the course requirements is as follows:*

| %   | Requirement |
|-----|-------------|
| 75% | Lecture     |
| 25% | Labs        |

*Semester grades will be earned as follows*

| Percentage      | Letter Grade |
|-----------------|--------------|
| 90% and above   | A            |
| 80 %–89%        | B            |
| 70 %–79%        | C            |
| 60%–69 %        | D            |
| 59.9% and below | F            |

Your Lecture Grade will be composed of quizzes and exams

Quiz average 20%

Exam (4) average 80%

Your Lab Grade will be composed of homework and labs

Homework average 25%

Lab worksheet average 25%

Lab Midterm 25%

Lab Final 25%

***A minimum grade of “C” is required for BOTH the lecture and laboratory components of all Medical Laboratory Technology 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:

Bishop, M. L. (2023). *Clinical Chemistry Principles, Techniques, & Correlations eBook*

**Publisher:** Jones & Bartlett

**ISBN Number:** 9781284247022

## Optional Instructional Materials:

PowerPoint lectures and additional material on internet

## Minimum Technology Requirements:

### Laptop

Most Windows or Mac 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 participate 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.

### 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.

## Required Computer Literacy Skills:

### 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.

## Course Structure and Overview:

**This course will cover Chapters 1-28.** 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 16 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 12 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 chapter's readings and PowerPoint. All quizzes will be averaged together for 20% of lecture grade; grades reflected immediately in Blackboard

Study Guides: Short answer, fill in the blank, and matching over topics covered in the week's readings and PowerPoint. No grade will be taken. These guides may be used during exams.

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 homework, quizzes and study guides; taken in class on laptop; 4 exams averaged together for 80% of Lecture grade. Final exam is cumulative and averaged in with lecture grade. Grades reflected immediately in Blackboard

Lab Worksheets: completed in-class. 11 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% worksheet.

## Communications:

EMAIL: [csokol@ntcc.edu](mailto:csokol@ntcc.edu); E-mails will be responded to within 24 hours during the work week (Monday – Thursday 8am-6pm and Friday 8-noon). Please only send emails from your ntcc account.

TEXT MESSAGE NOTIFICATIONS: Preferred. You are required in this course to sign up for the message notifications via Teams. I will use Teams to get information out to students quickly. This will enable you to receive important class announcements and reminders from me via instant message so that you will not miss out on any assignment changes or important updates. You will be automatically added to the Teams group for this course. 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.

***Weekly quizzes will be given at the start of each lab. No makeups are allowed.***

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 Teams, 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 (no absences or tardies) 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 Wednesday 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.

### **Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

### **Statement Regarding the Use of Artificial Intelligence (AI) Technology:**

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:

APA (7th edition)

OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. <https://chat.openai.com/>

MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, <https://chat.openai.com/>.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

### **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 accommodation 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 accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. 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.

### **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 Schedule:**

See Course Schedule file in Blackboard.