

McLennan
C O M M U N I T Y
COLLEGE

WACO, TEXAS

COURSE SYLLABUS
AND
INSTRUCTOR PLAN

Clinical Chemistry

MLAB 2401.01

Alisa J. Petree, MHSM, MLS (ASCP)^{cm}

NOTE: This is a 16-week course.

COVID 19 Notice:

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

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Course Description:

MLAB 2534 Microbiology deals with the instruction of the theory, practical application, and pathogenesis of clinical microbiology, including collection, setup, identification, susceptibility testing, and reporting procedures. We utilize a student/clinical laboratory for experiences in fundamental microbiology laboratory techniques.

Prerequisites and/or Corequisites:

Prerequisites: Admission to the medical laboratory technician program and approval by the program director. Semester Hours 4 (3 lec/3 lab)

Course Notes and Instructor Recommendations:

- Have your textbook by the first day of class
- Estimated study time outside of class: 12-15 hours per week
- Check your student email daily
- Use computer with reliable internet access

Please note:

It is MCC's policy to assign all students, upon registration, an official e-mail address, which may remain in effect up to twelve months after students are no longer enrolled at MCC. MCC student e-mail addresses will be the only e-mail authorized to communicate official college information or business. A student's failure to receive or read official communications sent to the student's assigned e-mail address in a timely manner does not absolve the student from knowing and complying with the content of the official communication.

Students **must** have access to a computer with reliable Internet access to participate in this class. McLennan Community College now provides students, faculty & staff the ability to sign up for and download Microsoft Office 365, **for free!** Students should also download *Adobe Reader* to open any PDF files in the course (free download).

Instructor Information:

Instructor Name: Alisa Petree, MHSM, MLS (ASCP)^{cm}

Program Director/Professor

MCC E-mail: apetree@mclennan.edu

Office Phone Number: 254-299-8406

Office Location: SB 320

Office/Teacher Conference Hours: Monday, Wednesday 9-11:30 AM

Tuesday/Thursday 9-10 AM, Other times by appointment

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Required Text & Materials:

Title: Clinical Chemistry Fundamentals and Laboratory Techniques

Author: Donna Larson, EdD, MT(ASCP)DLM

Edition: 1

Publisher: Elsevier

ISBN: 9781455742141

E-ISBN 9780323292535

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

MLAB 2401 students will be taught by the use of various learning methods and activities, to include lectures, case studies, demonstrations, laboratory exercises, Internet applications, streaming video, individualized projects, self-paced worksheets, web-sites and other resources will be utilized for research and projects. Course materials will be available on *D2L Brightspace* for student access during the course. Emphasis is on routine and special chemistry procedures and interpretation of test results in relationship to laboratory test results. Learning outcomes or specific course objectives are provided in each learning unit.

Course Objectives and/or Competencies:

MLAB 2401 is designed to prepare students to function at an entry-level position in a routine clinical chemistry laboratory. Lectures, demonstrations, laboratory sessions, clinical experiences, Internet exercises, and case studies will be used during the course. Emphasis will be placed on normal human physiology as it relates to clinical chemistry and disease states of the body. Emphasis will also be placed on routine clinical chemistry instrumentation and Quality Control methods. Routine chemistry procedures will be examined and abnormal chemistry results will be studied in relationship to the disorders of human physiology. The student will evaluate laboratory test outcomes and correlate test results with patient conditions and evaluate the suitability of clinical specimens. The student will demonstrate an understanding of clinical chemistry; describe disease states associated with abnormal chemistry values; and perform basic laboratory chemical analysis by scoring a grade of 75 or better in the class.

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After completion of MLAB 2401 Clinical Chemistry the student should be able to meet the following general course objectives:

1. Collect, process, and analyze medical clinical chemistry specimens.
2. Recognize and apply principles related to the use of laboratory information systems used in the clinical chemistry department.
3. Perform analytical tests on body fluids, serum, plasma, and other substances tested in the department.
4. Recognize factors that affect methods and test results and take appropriate actions within established guidelines using the skills of critical thinking and problem solving.
5. Recognize the clinical significance of laboratory procedures in the diagnosis and treatment of disease.
6. Perform and monitor routine departmental quality control within established guidelines by applying the principles of critical thinking and problem solving.
7. Perform preventive and corrective maintenance of equipment and instruments and refer to appropriate sources as necessary.
8. Apply and encourage the use of the principles of laboratory safety, including Standard Precautions.
9. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public.
10. Recognize the responsibilities of other laboratory and health care personnel and interact appropriately with them for quality patient care.
11. Apply basic scientific principles in learning new techniques and procedures.
12. Relate laboratory test results to common disease processes by recognizing the principles and methodologies practiced in the department.
13. Establish and maintain continuing education as a function of growth and maintenance of personal and professional competence.

All cognitive, psychomotor and affective domain objectives reflect these competencies. The affective domain objectives help the student understand the importance of professionalism, responsibility, and other "soft skills" associated with job competency.

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Subject to Change Disclaimer:

The policies, regulations, procedures, and fees associated with this program are subject to change without prior notice, if necessary, to keep College and program policies in compliance with State and Federal laws and/or with rules related to the program's accrediting agency. The College and the program reserve the right to change curricula, rules, fees, and other requirements, of whatever kind, affecting students in any way. The provisions of this document do not constitute a contract, express or implied, between any applicant, student, faculty or staff member and McLennan Community College or this program.

Course Outline or Schedule:

1. Introduction to Clinical Chemistry/Laboratory Safety
2. Principles of Laboratory Instrumentation/Immunoassays
3. Molecular Diagnostics
4. Automation and Laboratory Quality Management Systems
5. Enzymes/Clinical Chemistry and Disease/Cell Injury/Inflammation
6. Body Fluids, Electrolytes and Blood Gases
7. Proteins
8. Cancer and Tumor Markers
9. Heart Disease and Laboratory Monitoring of cardiac markers
10. Respiratory Diseases
11. GI and Liver Diseases
12. Pancreatic Diseases and Disorders
13. Endocrinology
14. Reproductive Diseases and Pregnancy
15. Bone, Joint and Skeletal Muscle Diseases
16. Nervous System Diseases
17. Therapeutic Drug Monitoring
18. Toxicology

Course Grading Information:

1. Grading Policy

A= 90 – 100

B= 80 - 89

C= 75 - 79

D= 70 – 74

F = 69 and below

Any student earning a 74 or below on any exam is required to schedule conference time with the Program Director.

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2. Course Breakdown

| | |
|------------|--|
| 45% | Examinations |
| 15% | Final Examination |
| <u>40%</u> | Lab Exercises, Quizzes and Assignments |
| 100% | |

Grades will be posted on *D2L Brightspace*.

3. **Examinations**

There are four major examinations plus the final exam. The final is comprehensive. Exams are administered using *D2L Brightspace*. There are no make-up exams. If you miss an exam, your final exam grade will also serve as the grade for the missed exam. **ALL tests will be proctored.**

4. **Lab Exercises**

Being competent in the laboratory is critical for the MLT. Therefore, it is crucial that each student be present and able to complete his/her lab assignments. Practical lab exams may be given to determine competency. Many lab exercises/assignments may not be available to makeup due to reagent limitations or preparation.

5. **Assignments**

Your assignment grade may include quizzes, projects, worksheets, and homework.

Lab Exercises

Being competent in the laboratory is critical for the MLT. Therefore, it is crucial that each student be present and able to complete his/her lab assignments. Practical lab exams may be given to determine competency. Many lab exercises/assignments may **not** be available to makeup.

Final Exam

The Final Exam will be comprehensive, testing your knowledge of the material for the entire course.

Late Work, Attendance, and Make Up Work Policies:

Regular and punctual attendance is expected of all students, and each instructor will maintain a complete record of attendance for the entire length of each course. Students will be counted absent from class meetings missed, beginning with the first official day of classes. Students, whether present or absent, are responsible for **all** material presented or assigned for a course and will be held accountable for such materials in the determination of course grades.

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Absence from 6 scheduled class days (excused or unexcused), will result in the student being withdrawn from the course. If the student's 6th absence is reached after the official drop date, the instructor may assign a W if the student is passing and requests to be withdrawn. However, if a student who is not passing reaches the 6th absence after the official drop date, the student will receive an F. In extenuating circumstances, the instructor may assign a W to a student who is not passing. Each absence (whether excused or unexcused) will count toward attendance requirements in each course.

Make-up Work: Students are responsible for all material presented or assigned in class and Lab. Students will be held accountable for such materials in the determination of course grades. If a student misses an **EXAM or LAB COMPETENCY**, the student **must provide** 1) proof of illness, 2) illness of a family member for whom the student is a caretaker (e.g., single parent) or death in the family, 3) religious holy day or 4) approved college activity.

The final exam grade will substitute for any missed exam due to an excused absence. Lab competency will be made up during the student's Lab time. If a student fails to follow these instructions for making up a Lab competency, the student will receive a zero (0%) or UNSATISFACTORY for the Lab competency. Missed labs must be made up within 1 week of the scheduled lab.

Note: The instructor has the prerogative of determining whether a student may make up work missed due to absences for other reasons. It is the student's responsibility to inform the instructor of the reason for an absence and to do so in a timely fashion.

Students are expected to be in class, on time. For security reasons, the doors to the classroom and Lab will be locked from the outside and the doors will remain locked after class starts. If the student cannot be in the classroom or Lab by the time class starts, the student will be able to come in during the scheduled break. If the student must leave the classroom or Lab for an emergency, the student will quietly pick up course materials and leave the classroom or Lab. Since the doors are locked from the outside, the student will not be able to come back into the class or Lab until the scheduled break. The students' cooperation is appreciated.

Lab absences – will be monitored the same as above. **Leaving early will also be counted as an absence.**

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

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Dress Code

The student classroom/laboratory is a level 2 biohazard lab. Therefore, students will be required to wear scrubs (preferably the MLT scrubs) and closed toe shoes to class and lab. We are representing our profession and our program. Please see the MLT Student Handbook for more information.

Plagiarism and Cheating

Any reported incidents of plagiarism or cheating will be investigated and documented with proper disciplinary action taken as necessary including possible dismissal from the program. "Cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests or examinations; (2) dependence upon the aid of sources beyond those authorized by the professor in writing papers, preparing reports, solving problems or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the MCC faculty or staff.

"Plagiarism" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Cellular Telephones, Personal Telephone Calls, and Electronic Devices

Students may use laptop computers during lectures as directed by the instructor. **Cell phones** must be silenced during class and lab. Cell phones may not be brought into testing areas.

Cell phones are a convenience to us all, and most of us have one in case we need to be contacted regarding emergencies with family, children, day cares, etc.

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

(<https://www.mclennan.edu/highlander-guide/policies.html>)

Click on the link above for the college policies on attendance and absences. Please see the absence policy for this class as shown above.

Updated 11/04/2022

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ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu 254-299-
8122
Room 319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the acting Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Diversity, Equity & Inclusion/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the

crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom from 7:30 am - 6:00 pm Monday through Thursday and 7:30 am - 5:00 pm on Friday. You can contact the Academic Support and Tutoring team via Zoom (<https://mclennan.zoom.us/j/2542998500>) or email (ast@mclennan.edu) during the above mentioned times.

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg. Both the Completion Center and Paulanne's Pantry are located on the second floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-andStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.