



**Lake Area Technical Institute**  
**Medical Laboratory Technician Course Syllabus 2016 – 2017**  
**Revised: 7/2016**

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*Lake Area Technical Institute: superior, comprehensive technical education that changes lives and launches careers.*

**COURSE:** MA 171: Medical Laboratory Procedures

**DURATION:** 2.5 Semester Credits 70 clock hours

**CLASS TIMES:** Tuesday/Thursday 3:00-4:50

**INSTRUCTOR:** Kari Lohr, MLT (ASCP), Email: [kari.lohr@lakeareatech.edu](mailto:kari.lohr@lakeareatech.edu) Classroom 534 Phone 605-868-7090 The best way to get ahold of me right away is by text. Please do not text me after 9pm. The course (via My Portal) is available 24 hours a day, seven days a week. **I am available on-campus T/TH by appointment.** However, you can expect a reply to any email within 24 hours M-F and 48 hours Saturday/Sunday.

**RATIONALE:** Knowledge of the areas of the lab, the significance of basic tests in these sections as well as how to perform them is important to the Medical Assistant. Not only will it help them in the interpretation of the results received for each patient, it will give them a better understanding of the turn-around-time for various tests and what is involved in completing the tests once they are ordered. Medical assistants may work in labs in various roles which may include lab testing.

**COURSE AIMS:** This course consists of the study of the need for safety at all times and the use of the microscope and glassware. Once these basic techniques are learned, the student will perform tests in the areas of hematology, chemistry, microbiology, immunology, blood banking, and urinalysis.

**REQUIRED TEXT:** *Basic Clinical Laboratory Techniques* by Estridge and Reynolds, 6th edition, Delmar/Cengage Learning, 2016, ISBN # 1-111-138362 \$

**REQUIRED TECHNOLOGY:** Computer, Internet access, Internet Browser: Firefox, Microsoft Office (Word, Excel, PowerPoint)

**WEBSITES:**

LATI My Portal – <https://my.lakeareatech.edu/ICS/>

Medical Training Solutions (MTS) – [www.medtraining.org](http://www.medtraining.org)

Medialab, Inc. – [www.medialabinc.net](http://www.medialabinc.net)

**REQUIRED SUPPLIES:** Red pen, Pencil, eraser, highlighter, Sharpie, Binder for handouts, lab coat (available in the bookstore), and a calculator (other than the one on your phone or computer)

**PROGRAM STUDENT LEARNING OUTCOMES:** The following affective learning outcomes apply to courses taught in the MLT department as they influence each student's ability to learn the cognitive and psychomotor course outcomes.

The Student will:

1. Demonstrate effective communication skills.
2. Demonstrate a respect for others.
3. Demonstrate a cooperative attitude.
4. Attend regularly scheduled classes as outlined in the attendance policy.
5. Demonstrate active participation in class by answering questions, maintaining eye contact with instructor, eliminating breaks during class time and only utilizing technology for the classroom instruction.
6. Demonstrate self-motivation/initiative.
7. Demonstrate organizational ability in prioritizing workload to achieve timely and reliable results.

8. Demonstrate responsibility and pride in the classroom by picking up after themselves and keeping the lab and their workspace clean.
9. Separate classroom tasks from outside interferences.
10. Accept responsibility for his/her actions.
11. Inspire the confidence of faculty and students.
12. Utilize safety procedures within the clinical laboratory.
13. Demonstrate qualities consistent with the Code of Ethics for the profession (see attached).
14. Utilize quality assurance/quality control procedures outlined by the instructor.

Cognitive Objectives:

I.C.10. Identify CLIA waived tests associated with common diseases

I.C.12. Identify quality assurance practices in healthcare

II.C.6. Analyze healthcare results as reported in:

- a. graphs
- b. tables

X.C.11. Describe the process in compliance reporting:

- a. unsafe activities
- b. errors in patient care
- c. incident reports

XII.C.1. Identify:

- a. safety signs
- b. symbols
- c. labels

XII.C.2. Identify safety techniques that can be used in responding to accidental exposure to:

- a. blood
- b. other body fluid
- c. needle sticks
- d. chemicals

XII.C.3. Discuss fire safety issues in an ambulatory health care environment

XII.C.5. Describe the purpose of Safety Data Sheets (SDS) in a healthcare setting

XII.C.6. Discuss Protocols for disposal of biological chemical materials

Psychomotor Competencies:

I.P.11. Obtain specimens and perform:

- a. CLIA waived hematology test
- b. CLIA waived chemistry test
- c. CLIA waived urinalysis
- d. CLIA waived immunology test
- e. CLIA waived microbiology test

II.P.2. Differentiate between normal and abnormal test results

III.P.1. Participate in bloodborne pathogen training

Affective Competencies:

II.A.1. Reassure a patient of the accuracy of the test results

X.P.7. Complete an incident report related to an error in patient care

- XII.P.1. Comply with
  - a. safety signs
  - b. symbols
  - c. labels

- XII.P.2. Demonstrate proper use of:
  - a. eyewash equipment
  - b. sharps disposal containers

**COURSE STUDENT LEARNING OUTCOMES:** Upon the completion of this course the student will:

- 171 1 Describe and follow proper safety practices.
  - Complete safety tutorials and obtain a score of 100%.
- 171-2 Investigate the role and function of the laboratory by discussing tools needed to perform the tests correctly, the need for confidentiality (HIPAA) and the importance of Quality Control and Quality Assurance in obtaining accurate patient results.
  - Demonstrate the correct use of the microscope.
  - Identify each type of glassware found in the lab and the proper use of each.
  - Record daily lab data on a Levy-Jennings graph and interpret the acceptability of the QC for each day.
- 171-3 Explain the function of the hematology lab, list the tests performed and what they are measuring, state the normal values for each and discuss the diseases/disorders that may be causing the abnormal results.
  - Perform manual hemoglobin and microhematocrits.
  - Observe the preparation of slides for a reticulocyte count, differentiate a reticulocyte from a normal red blood cell and discuss the performance of this count to include the calculations required.
  - Perform an erythrocyte sedimentation rate.
  - Perform automated cell counts and indices.
  - Prepare acceptable slides for differentials.
  - Perform media lab differentials as assigned.
  - Perform 10 manual differentials in class.
- 171-4 Discuss the importance of the microbiology lab in the identification of infectious microorganisms and explain the use of antigen/antibody reactions in the immunology and immunohematology labs.
  - Streak an agar plate with bacteria for isolation and observe the difference of the colonial morphology of different types of bacteria.
  - Differentiate the appearance of bacteria on a gram stain and report as gram positive, gram negative, cocci or bacilli.
  - Set up an identification on a gram negative bacteria and Identify the genus and species of this organism.
  - Swab a classmate's throat and perform a strep screen on the specimen obtained.
  - Perform various immunology tests from waived kits.
  - Determine ABO and Rh type.
- 171 5 Explain urinalysis testing to include the physical, chemical and microscopic examination and determine the disease/disorder causing various abnormal results.
  - Perform the physical examination of the urine.
  - Perform the chemical examination of urine both manually and with an automated strip reader.
  - Complete the microscopic examination correctly on 10 urines provided by the instructor.
- 171 6 Discuss the chemistry department, the various tests performed and the types of results obtained especially the significance of HDL, LDL, cholesterol, glucose and BUN testing
  - Perform a manual chemistry test using the Eppendorf pipettes.
  - Perform Total Cholesterol, HDL, LDL, Triglyceride and Glucose tests with the waived Cholestech by Alere.

## **FORMAT AND PROCEDURES:**

This course will be available on My Portal where handouts and assignments will be available for download, assigned tutorials can be accessed and grades recorded.

### ***Units of Instruction:***

- Test One: 171-1: Safety – you must obtain 100% before proceeding in the course.
- Test Two: 171-2: Introduction to the Lab
- Test Three: 171-3: Hematology Test 1
- Test Four: Hematology Test 2 - Differentials
- Test Five: 171-4: Microbiology and Blood Bank Test
- Test Six: 171-5: Urinalysis Physical and Chemical Exam Test
- Test Seven: Urinalysis Microscopic Exam Test
- Test Eight: 171-6: Chemistry Test
- Test Nine: Final Test

### ***Grading Policies***

#### **Grading Scale:**

- 94.0 – 100% = A
- 87.0 – 93.9% = B
- 80.0 – 86.9% = C
- 79.9% or below = F (unacceptable)

**Performance Standard:** The student will pass the course with a minimum of 80.0%.

**Final Grade:** Your final grade is determined as follows:

- Tests – 70%
- Lab Grade – 20%
- Assignments – 10%

### **Grading Requirements:**

1. There will be a total of 9 tests given. This grade will be based on the average of all tests taken. A comprehensive final will be taken and can be used in place of your lowest test score. Tests may be paper or computer tests. Exams will be given on the day scheduled. Tests not taken on the scheduled test day will be scored a "0" unless other arrangements have been made prior to test day.
  - a. In order to take a test on a different day than scheduled, the following criteria must be met:
    - i. The student contacted the instructor in advance by email or phone.
    - ii. The student has a legitimate reason that can be documented. (Examples: serious illness – documented by a physician, funeral - folder from funeral, automobile accident, severe weather, program related activity)
  - b. Make-up tests MAY be different than the test given during the regularly scheduled time and must be completed within 5 days of return to class.
  - c. Missed tests that do not meet the criteria will receive a score of 0.
2. Lab reports: Lab exercises will be part of each topic of this course. The total number of points received divided by the total possible will give a percentage that will be worth 20% of your grade. Most lab reports are due at the end of class the day the lab is performed. Ten percent will be deducted each day a lab report is handed in late.
3. Assignments will include computer exercises and written assignments/worksheets. The total number of points received divided by the total possible will give a percentage that will be worth 10% of your grade. All assignments will have a due date. Please have the assignment completed to turn in for that day.

**Competencies:**

Students will be allowed two (2) attempts at the psychomotor and affective competencies for the Medical Lab Procedure course. In order for the student to earn a passing grade in the course, the student must successfully complete the psychomotor and affective competencies by performing 100% competent. Students will receive a fail/pass grade for competencies.

**COURSE REQUIREMENTS****Attendance:**

1. A student may miss 4 hours of class during the semester. After missing 2 hours, the student will be notified they have 2 hours of absence left. Any absence beyond the four hours will result in dismissal from the course. A drop slip will be filled out and submitted to the registrar. If the student wants to appeal the drop, they should see Megan Howard prior to the next class period (so no more classes are missed) to obtain the required paperwork for the appeal. An appointment will be made for the student, instructor and Megan to meet within 3 days of the missed class. The student will know the results of the appeal at the conclusion of the meeting.
2. Late attendance will be monitored. A student who has been late 3 times will have one hour of absence added to his/her attendance record. Any student sleeping in class will be counted absent from the class.

**Student Expectations:**

1. It is expected that students will spend 2 hours per credit hour outside of class time per week for each course. For example, for a 4 credit course, you can expect to spend 8 hours per week (2 hours x 4 credits) completing assignments, listening to lectures as well as studying for quizzes and tests.
2. Cell phones will be turned off or placed on vibrate prior to class and placed in the designated dividers. If you have an emergency situation in which you will need to answer the phone, inform the instructor and then leave the room to answer your call. Students found to be in possession of a cell phone during a test will receive a score of 0 on that test.
3. Professionalism is important. Students will pay attention in class and not interrupt by visiting with classmates.
4. If you are sleeping in class, you are absent from class. If you are doing other work during class, the same is true. If you take a break in the middle of class, this will be considered as a tardy/absence.
5. No opportunity to improve a grade will be offered at the end of the course. Students should stay up to date on their course grade calculations and adjust/study during the semester to earn the grade they seek.
6. Collaboration in studying is a good thing, but I expect you to do your own work for tests and any other assignments unless I specifically tell you otherwise. Submission of identical work (i.e. shared work) will result in both the participants receiving a zero. If it happens more than once, you may be released from the course.
7. Computers open during class shall be used only for class purposes. At no time is it acceptable to be on Facebook, email, etc. The instructor will be monitoring computer screens during the class period and especially during testing. If the student has another site open during a test, the student will receive a score of 0 on the test.
8. Without my permission, you do not have the authority to record (per video or photo) any of my class, its class members, or any content expressed here.

**ACADEMIC INTEGRITY:** Each student in this course is expected to abide by Lake Area Tech's Code of Academic Integrity. Any work submitted by a student in this course for academic credit will be the student's own work. *[Unless the instructor has specified that students may work together.]*

You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e-mail, an e-mail attachment file, a diskette, or a hard copy.

Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Code can also be extended to include failure of the course and disciplinary action.

During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

### ***Academic Dishonesty***

The following activities are examples (not all inclusive) of academic dishonesty:

- Failing to report observed instances of academic dishonesty
- Plagiarism, defined as representing as one's own, the ideas, writings, or other intellectual properties of others, including other students; any material taken verbatim from the work of others must be placed in quotation marks and a reference cited. Paraphrased content must have appropriate attribution.
- Collaboration on assignments unless it is clearly permitted per the syllabus/instructor
- Falsifying academic records
- Bribing faculty to improve academic scores or grades
- Acquiring an exam during the preparation, duplication, storage, or prior to testing date
- Removing or acquiring secured exams after administration
- Copying answers from another student's examination
- Taking a crib sheet or other form of prepared answers/notes into an examination when not permitted by the instructor
- Leaving the examination and returning without permission
- Taking an examination for someone else, preparing and submitting an assignment for someone else, or sign-in for class for someone else
- Receiving, retaining, and/or using materials obtained in a manner that is defined as academically dishonest
- Using signals or otherwise communicating (e.g. text messaging) during an examination to share answers with or from another student
- Continuing to answer test items beyond the prescribed exam time limit
- Falsifying reasons for excused absences from examinations
- Taking examinations at times other than the one to which you have been assigned in order to obtain more preparation time

### **ACCOMMODATION FOR STUDENTS WITH DISABILITIES**

**ADA Statement:** Students are entitled to reasonable accommodations under provisions of the Americans with Disabilities Act. Those in need of such accommodations should notify the instructor and make appropriate arrangements with the Counseling Office.

<https://lakeareatech.edu/current/services/disabilityservices/index.html>

**INCLUSIVITY STATEMENT:** We understand that our members represent a rich variety of backgrounds and perspectives. The instructors in the Medical Laboratory Technician program are committed to providing an atmosphere for learning that respects diversity. While working together to build this community we ask all members to:

- share their unique experiences, values and beliefs
- be open to the views of others
- honor the uniqueness of their colleagues
- appreciate the opportunity that we have to learn from each other in this community
- value each other's opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- use this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the Lake Area Tech community

## OTHER

### ***Student Responsibility for Student Handbook Information***

You, as a student, are responsible for knowing the information in the handbook and the most current course descriptions. Lake Area Tech reserves the right to change regulations and policies as necessary.

<http://www.lakeareatech.edu/current/downloads/Handbook2015.pdf>

### ***Educational Services Center, Tutoring and Adaptive Technology:***

<https://lakeareatech.edu/current/services/educational/index.html>

***Counseling Services:*** Lake Area Technical Institute provides free personal and confidential counseling services to students. The goal of Lake Area Tech is to promote student success and retention by helping students reach their educational and personal goals and by being a resource for other services available in the community.

<https://lakeareatech.edu/current/services/counseling.html>

**INSTRUCTOR RIGHTS STATEMENT:** The instructor has the right to change any and all material on this syllabus at any time.

My goal is to prepare you for understanding laboratory tests and possibly working in a medical laboratory as a Medical Assistant. My hope is for everyone to be successful and I will work with each of you to help you accomplish this goal.



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