

**HOUSTON COMMUNITY COLLEGE SYSTEM
MEDICAL LABORATORY TECHNICIAN PROGRAM (MLT)**

COURSE SYLLABUS

MLAB 1211 – Urinalysis and Body Fluids

Freshman

CRN 41658 - Spring 2015

Coleman College campus

Spring Hours: 1 hour lecture/ 4 hour lab/16 weeks

Credit: 2 Hours

80 Contact Hours

Type of Instruction: Web Enhanced Lecture and Lab

Administrative Notes

Instructor: TBA
Office: John B. Coleman Building, suite 216
Office hours: TBA
Phone: 713-718-5518
Email: Theresa.spain@hccs.edu

Course Schedule

Semester: Jan. 19, 2015 – May 15, 2015

T	Lecture	6:00 – 8:30 pm	Rm. 366
H	Lab	6:00 – 8:30 pm	Rm. 279

Classroom: Lecture: Room 366
Lab: Room 279

Course Description

An introduction to urinalysis and body fluid analysis, including the anatomy and physiology of the kidney, and physical, chemical and microscopic examination of urine, cerebrospinal fluid, and other body fluids.

Course Prerequisite

Admittance into the MLT Program.

Course Goal

Medical Laboratory Technicians must be proficient in the principles of measurement of urine and body fluids and the clinical implications of measurements. Information gained from this course will be essential for successful completion of the urinalysis and body fluids sections of the ASCP Board of Certification exam and for obtaining employment as an entry-level MLT.

Course Student Learning Outcomes

1. Apply principles of safety, quality assurance, and quality control.
2. Identify the cognitive theories of Urinalysis and Body Fluids.
3. Perform laboratory work skills.

4. Demonstrate ethical and professional behavior.

Student Learning Objectives

Apply principles of safety, quality assurance, and quality control.

- 1.1 Demonstrate safe laboratory practices at all times.
- 1.2 Evaluate specimen quality prior to student lab procedures.

Identify the cognitive theories of Urinalysis and Body Fluids.

2.1 Demonstrate the cognitive theories of Urinalysis/Body Fluids by scoring 75% or better on all lecture exams.

Perform laboratory work skills.

- 3.1 Following instruction, demonstration and practice sessions, operate laboratory equipment independently as demonstrated by practical exams.
- 3.2 Perform quality control and follow all student lab procedures and practices.

Demonstrate ethical and professional behavior.

- 4.1 Illustrate ethical and professional behavior by adhering to attendance policies, dress codes, and general rules and regulations.
- 4.2 Demonstrate respect and appropriate interpersonal skills with classmates and instructors.

Cognitive

With the use of course materials and various teaching methods, the student will demonstrate mastery of the following course objectives by scoring 75% or better on all examinations.

1. Review concepts of laboratory safety.
2. Describe the major constituents of urine, the changes that occur in these constituents with time and the collection process of various types of urine specimens.
3. Explain the structure, functions and diseases of the kidney.
4. Describe the principles of the complete urinalysis to include physical, chemical and microscopic analysis.
5. Discuss the principles of quality assurance as they apply to the Urinalysis department.
6. Identify the physiology and diagnosis of metabolic disorders.
7. Describe the formation, physiology, clinical significance, and testing of cerebrospinal fluid.
8. Describe the formation, physiology, and testing of seminal fluid, synovial fluid, serous fluid, amniotic fluid and list normal and abnormal test results.
7. Discuss the principles of fecal analysis.

Psychomotor

Given appropriate instruction and all necessary supplies and equipment, the student will perform the following tasks and demonstrate mastery of each task as determined by the instructor and common standards of practice. (see skills checklist for more detail)

1. Complete analyses of urine and other body fluids.
2. Analyses of quality control materials, and interpretations of quality control results.
3. Instruct patients in the collection of various types of urine specimens.
4. Perform proper infection control procedures during every lab session.

Behavioral

Upon receiving appropriate instructions, the student will demonstrate the following attitudes and behaviors at all times as determined by mid-term and end-term evaluations. During the course of the semester, the students will:

1. attentively attend to verbal and demonstrative instruction
2. follow written and verbal instructions
3. communicate effectively in written and spoken English
4. engage in class/laboratory discussions by asking pertinent questions and responding respectfully to other student's comments
5. demonstrate a willingness to learn and apply new ideas/technical skills to future endeavors
6. demonstrate a positive teamwork ethic by being willing to assist and cooperate with others
7. develop confidence by gradually working independently in a competent manner
8. prioritize and manage work flow within a restricted time frame
9. handle themselves at all times in a professional manner and perform at the highest level of standards
10. demonstrate honesty and integrity and abide by the Medical Code of Ethics
11. demonstrate commitment to the Medical Laboratory Technician profession
12. be punctual to class and do not abuse break times.

Scans, Core Curriculum Competencies

SCANS

Apply principles of safety, quality assurance, and quality control.

Foundation Skills – Thinking –Decision Making

Foundation Skills – Thinking –Creative

Foundation Skills – Thinking –Problem Solving

Identify the cognitive theories of Urinalysis and Body Fluids.

Foundation Skills – Thinking –Creative

Perform Laboratory work skills.

Workplace Competencies – Technology –Applies Technology to Task

Workplace Competencies – Technology –Maintains & Troubleshoots

Demonstrate ethical and professional behavior.

Workplace Competencies – Interpersonal –Participates as Team Member

Workplace Competencies – Interpersonal –Negotiates to Arrive at a Decision

Workplace Competencies – Interpersonal –Works with Cultural Diversity

Course Calendar

Week One

Introduction to Course. Chapter: Introduction Safety and Urinalysis (1,3). Lab: Refractometer, UA Color/Appearance. Quiz: Take Home quiz

Week Two

Chapter: Renal Function (2). Lab: Refractometer, UA Color/Appearance, Label Verification.

Week Three

Chapter: Physical Exam (4). Creatinine clearance calculations. Lab: Manual Reagent Strips, QC lab, Clinitek .

Week Four

Chapter: Urinalysis Chemical Exam (5), Homework Chp 5, Quiz Chp 1-4. Review for Exam I.
Lab: Manual Reagent Strips, Clinitek Advantus, QC lab.

Week Five

Exam I (1-4). Lab: Assessment I: Chp. 1-4 Refractometer, Color/appearance, Confirmatory tests, Clinitek & manual dipsticks.

Week Six

Chapter: Microscopic Exam (6). Quiz Chp 5. Kodachromes. Lab: Microscopic Practice, Confirmation tests, Clinitek 50/ Advantus, Urine Sediment pictures.

Week Seven

Chapter: QA (7). Complete UA. Review for Exam II. Quiz 6,7. Lab: Microscopic practice.

Week Eight

Exam II. Chp 5,6. Quiz chp 6,7. Lab: Complete UA =Microscopic, Confirmation tests, Clinitek 50/ Advantus, Urine Sediment pictures.

Week Nine

Chapter: Renal, Metabolic Disorders (8, 9). Quiz Chp 7. Lab: Complete UA.

Week Ten

Chapter: CSF (10) and Semen (11). Lab: Assessment II - Complete UA.

Week Eleven

Chapter: Synovial Fluid, Serous Fluid, (12, 13). Quiz Chp 8-10. Review for exam III. Lab: Body Fluid Calculations and Practice, Body Fluid cells, Cytospin.

Week Twelve

Exam III (7-10) with Body Fluid cells. Lab: Body Fluid Calculations and Practice, Body Fluid cells, UA case studies.

Week Thirteen

Chapter: Amniotic Fluid, Fecal Analysis (14, 15). Misc UA material. Quiz 11-15. Review for exam IV. Lab: Body Fluid Calculations and Practice, Body Fluid cell pictures, Pregnancy test.

Week Fourteen

Exam IV (11-15). Lab: Assessment III-Chp 7-15, Body Fluid cells, Kodachromes.

Week Fifteen

Misc Procedures, case presentations. Lab Review for Final and review all pictures.

Week Sixteen

Final Exam (1-15) including all pictures.

Instructional Methods

Instructional strategies will include classroom lectures, guest speakers and demonstrations, hands-on practice sessions, case studies, computer-generated instructional programs, and internet access materials. Instruction is web-enhanced.

Student Assignments

Apply principles of safety, quality assurance, and quality control.

Discussions

Identify the cognitive theories of Urinalysis and Body Fluids.

Various assigned reading from text books.

Perform laboratory work skills.

Discussions

Demonstrate ethical and professional behavior.

Various assigned reading from test books, peer-review, and discussions

Students should refer to the Course Outline and Course Calendar.

Student Assessments

Apply principles of safety, quality assurance, and quality control.

In Class Discussions

Quizzes/Tests which may include: definitions, matching, multiple choice, true/false, short answer, brief essay

Identify the cognitive theories of Urinalysis and Body Fluids.

In Class Discussions

Quizzes/Tests which may include: definitions, matching, multiple choice, true/false, short answer, brief essay

Various assigned reading from text books.

Perform laboratory work skills.

Quizzes/Tests which may include: definitions, matching, multiple choice, true/false, short answer, brief essay

Demonstrate ethical and professional behavior.

In Class Discussions

Quizzes/Tests which may include: definitions, matching, multiple choice, true/false, short answer, brief essay

Various assigned reading from text books.

Assessments will include hands-on lab assignments with corresponding questions concerning the pertinent chapters included in the labs. Refer to **Course Requirements, Grading Scale, and Grading Criteria** for more information.

Instructional Materials: The required textbook is Urinalysis and Body Fluids by Strasinger. All MLAB books are sold at the West Loop Bookstore; the URL is: <http://hccs.bkstore.com> or <http://hccs.bncollege.com>. Students can order HCC textbooks online and also reserve their textbooks online for in-store pickup at the HCC West Loop bookstore. HCC West Loop bookstore phone number is 713-218-0391. The student should not sell any books back to the Bookstore as these will be needed in order to study for the ASCP Board of Certification exam.

Books may be sold after the student passes the BOC exam. The instructor will distribute supplemental handouts to the student.

The HCC Coleman College library is the Houston Academy of Medicine – Texas Medical Center library. It is located one mile and one METRO rail stop away at 1133 John Freeman Boulevard at Cullen Circle. Numerous reference books are available in the HAM-TMC Library and in faculty offices at Coleman College for Health Sciences. The HAM-TMC main phone number is 713 795 4200. Library hours are Monday through Thursday 7 a.m. - 10 p.m., Friday 7 a.m. - 9 p.m., Saturday 9 a.m. - 5 p.m., and Sunday 1 p.m. - 8 p.m. Parking is available underneath the Library in Garage 3 or Garage 4 and costs approximately \$12.00 maximum per day. For more information, go to www.library.tmc.edu. Circulation Privileges: Present your student ID, current registration invoice, and registration form. The registration form can be downloaded at <http://resource.library.tmc.edu/circ/docs/memberregisform.pdf> Remote TMC Educational Access: Go to <http://resource.library.tmc.edu/resources/>

Disability Notification

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at their respective college at the beginning of each semester. Faculty are authorized to provide only the accommodations requested by the Disability Support Services Office. If you have any questions, please contact the Disability Counselor at your college. Contact Coleman College ADA counselor at 713-718-7685.

Academic Honesty

Plagiarism, cheating, and other forms of academic dishonesty are not only violations of the college system and the rules of this class, but are unethical and unprofessional. Students engaging in any form of academic dishonesty are subject to immediate dismissal from the program. You are expected to be familiar with the College's Policy on Academic Honesty, found in the catalog and student handbook. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook).

Student Attendance, Repeat Course Fee, Withdrawals

Students will be dropped from any MLAB course for excessive absences. Absences in excess of 12.5% of the hours of instruction are considered excessive.

Students will be dropped from any MLAB course for excessive tardiness. Ten minutes late for class will be considered tardy. Three tardies will count as one absence. Leaving class early without prior notification will be considered as absent time and will be noted.

Students are advised to communicate with the instructor about absences and tardies. Call to inform the instructor of unexpected absences or tardies. If a student knows in advance that they will be late or absent, they should notify the instructor in writing one week in advance. Excused absences may be given if the student notifies the instructor in advance and if the student provides appropriate documentation to explain the absence. Students are responsible for material missed because of absences. It is the student's responsibility to schedule all makeup work.

In the event of bad weather, the student is advised to listen to local radio or television stations for information about school closure.

Repeat Course Fee

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice, are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

Withdrawals

Students are responsible for officially withdrawing from classes. The last day to drop with a "W" is 3/24/2015 before 4:30 pm. Students who fail to withdraw from a class before this date will receive a grade of "F". Before you withdraw from your course, please take the time to meet with the instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important.

To help you avoid having to drop/withdraw from any class, contact your professor regarding your academic performance. You may also want to contact your counselor to learn about helpful HCC resources (e.g. online tutoring, child care, financial aid, job placement, etc.). HCC has instituted an Early Alert process by which your professor may "alert" you and the counselors that you might fail a class because of excessive absences and/or poor academic performance.

- **Students should check HCC’s Academic Calendar by Term for drop/withdrawal dates and deadlines. Student may also check the course syllabus for the withdrawal date.**
- **If a student decides to drop or withdraw from a class upon careful review of other options, the student can drop online prior to the deadline through their HCC Student Service Center:**
<https://hccsaweb.hccs.edu:8080/psp/csprd/?cmd=login&languageCd=ENG>

Course Withdrawals-First Time Freshmen Students-Fall 2007 and Later

Under Section 51.907 of the Texas Education Code “an institution of higher education may not permit a student to drop more than six courses, including any course a transfer student has dropped at another institution of higher education.” Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

Classroom Behavior

Turn cell phones off and pagers to vibrate mode during class.
 Attend to all personal business before the start of class.
 Students will not be allowed to leave the classroom during a test.
 Do not work on assignments or other course work during class.
 Conflicts should be brought to the attention of the instructor as soon as possible.

HCC Student Services Information

Access to Student Service Web site:
<http://hccs.edu/student-rights>

Early alert: HCC has instituted an Early Alert process by which your professor will “alert” you through written contact actions and through counselors of concerns that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, and more. This is done to help you the student stay in class and improve your academic performance.

EGLS₃ -- Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you, the students, will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

Meningitis Vaccination Requirement

Texas Senate Bill 1107 passed in May 2011, requires that new HCC students and former HCC students returning after an absence of at least one fall or spring semester who are under the age of 22 are required to present a physician-signed certificate showing they have been vaccinated against bacterial meningitis. The immunization must be administered at least 10 calendar days before the start date of your classes and must have been received within the last five years. As of

Spring 2012, all students will be prevented from enrolling in PeopleSoft unless they have met one of the above requirements mentioned above or qualify for an exemption. New pages and processes have been created and provided to campus users to insure that HCC is in compliance. For additional information, see the Meningitis vaccination information on the HCC website.

Instructor Requirements

As your instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explain how student grades are to be derived
- Facilitate an effective learning environment through class labs, lectures, power points, reviews, and other materials
- Description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required
- Provide tutoring when students request it or ask the students to take advantage of our peer tutor

Student's Responsibilities

- Read lecture material before class, define unknown terms and come prepared to ask questions
- Attend all classes, pay close attention to instructions given by the instructor, follow procedures and participate to the fullest extent
- Immediately after the lecture, review lecture material covered and answer learning objectives
- Students should not study the night before the exam. Rather, plan to study a certain amount each day to achieve academic success
- HIPAA is the Health Insurance Portability and Accountability Act (HIPAA), which involves patients' rights to the security and protection of their identifiable patient health information. HITECH is the Health Information Technology for Economic and Clinical Health Act. Its main goal is to encourage the use of electronic health records (EHRs), which will strengthen Federal privacy and security laws in order to protect identifiable health information from misuse. It is understood by all students in clinical rotations that all identifiable patient health information is private and the security of protected health information will be maintained.

Program/Discipline Requirements

1. Abide by all lab safety rules.
2. Attendance is mandatory; any student with excessive absences will be dropped from the class.
3. Ethical and professional behavior is required at all times.
4. The lowest passing grade for all courses is 75%.

The Program prepares individuals, under the supervision of clinical laboratory scientists/medical technologists, to perform routine medical laboratory procedures and tests and to apply preset

strategies to record and analyze data. Includes instruction in general laboratory procedures and skills; laboratory mathematics; medical computer applications; interpersonal and communications skills; and the basic principles of hematology, medical microbiology, immunohematology, immunology, clinical chemistry, and urinalysis.

Program Learning Outcomes:

1. Safely apply techniques according to standard operating procedures in the collection and analysis of biological samples.
2. Demonstrate the cognitive theory necessary to pass the national certification exam and be a successful Medical Laboratory Technician.
3. Integrate ethical and professional behavior in the clinical laboratory setting.
4. Use problem solving skills to integrate laboratory data for patient results.

Grading Scale, Grading Criteria, and Course Requirements

The following grading scale is used for all MLAB courses:

90 - 100	=	A
80 - 89	=	B
75 - 79	=	C
0 - 74	=	F

MLAB 1211 is a one-hour lecture and a four-hour lab course. Students will be graded according to the following:

Unit Exams	40%
Assessments	30%
Final Exam	20%
Assignments	10%
Skills Checklist	all items complete
BOC Study Questions	all questions completed with 100% accuracy

There will be 4 unit exams for this course. Material for these exams will come from the textbook, power points, labs, and handouts given to students during class. A thorough knowledge of unit objectives will ensure adequate performance on exams. **Students must maintain a 75% average on unit exams. Students not maintaining a 75% average will receive a grade of "F" for the course.**

No makeup exams are given for unexcused absences. An absence on test day will result in a grade of "0". If a student must be absent for a test, that student is responsible for informing the instructor in advance and providing the instructor with appropriate documentation to explain the absence.

Students will be allowed to repeat one exam that they scored below 75% on. This repeat exam must be taken within one week of the return date of the original exam and the highest grade allowed will be a 75.

Lab assessments will be given for this course. Each lab assessment must be passed with a grade of 75% or better. The evaluation will consist of an assessment of student's psychomotor skills

and written case studies and chapter information. Assessments may be given with a written portion and hands-on portion; the student must pass both portions with 75% or higher. Assessments are 30% of the course grade. If a student fails a lab assessment (hands-on and/or written), the student will be allowed to retake the assessment one time only and the highest grade allowed will be a 75%. **Students not scoring a 75% or better on all lab assessments will receive a grade of "F" for the course. Failure of one MLAB course will result in a student becoming a part-time student with probational status. Failure of two MLAB courses will result in the dismissal of a student from the MLT Program. After a year's dismissal time, the student may possibly gain readmittance into the Program by writing a letter to the Program Director stating how they intend to be successful and also state any more academics that have been completed.**

The final exam is comprehensive and counts for 20% of the course grade. **The student must score a 75% or better in order to pass this course. Students failing the final exam will not be allowed to retest.**

Assignments will count for 10% of the final grade. No late assignments are accepted. A late assignment may be checked for accuracy but the student will receive a grade of zero. Unless otherwise stated, assignments are independent assessments and should reflect an individual's performance. Specific lecture assignments will include journal reviews, unit questions, and internet assignments. More information will follow. Quizzes may be given at the beginning and/or end of class and/or online. A student not present when a quiz begins receives a grade of 0. They will consist of material covered the previous class and material to be covered during the current class period. There are no makeups on any quizzes.

Students must demonstrate mastery of all manipulative skills (see skills checklist). A checklist will be utilized to document competency of each skill. Each skill must be checked off before the end of the semester in order for the student to receive a grade for the course. Failure to complete a skill will result in a grade of "I" (incomplete), which will convert to a grade of "F" after the following semester. If a student, who has received an "I", later completes the skill checklist, the "I" will be changed to the appropriate grade earned by the student. Students are responsible for maintaining the checklist. A lost checklist will result in repeat testing of the student.

Study Strategies for Students

Each unit of instruction will be accompanied by a set of learning objectives. Students, who demonstrate a thorough knowledge of the learning objectives, should score well on written exams. It is highly recommended that students attend all lab sessions, pay close attention to instructions given by the instructor, follow procedures, and participate to the fullest extent. Students should not wait until the night before an exam to study. Studies have shown that students who study a certain amount each day are more likely to be successful. It is recommended that students read lecture material before a lecture is given, define unknown terms and prepare questions to ask the instructor during the lecture. Immediately after a lecture, the student should reread the lecture material and answer learning objectives as if they were study questions. Often, study questions will be given. These study questions are an excellent source of study material.

Tutoring is available to all students for lectures and labs in a course. It is the student's responsibility to fill out a request form and/or contact the instructor to schedule tutoring. It is imperative that students request tutoring as soon as the need develops. Do not wait until the last minute to begin needed work. Tutoring for lecture or lab will be scheduled outside of regular class meetings. HCC Askonline tutoring program link is: www.hccs.askonline.net. This is a great program for help in your academic classes.

Activate your HCC student email account if you have not already done so. Go to <http://webmail.hccs.edu> after you have registered for classes. Username will be firstname.lastname with Password being DOB date of birth (mm/dd/yyyy for example 09/15/1985). If an error occurs, you may have number after your last name in the data system. To find your email username, press "students click here for help" link which will take you to a tutorial page. On second bullet line, press "click here" that opens a search engine to look up your email student identification. If you change your password, write it down. If you have trouble with this, go to The Center on the first floor and they will help you.

Eagle Online E-mail is encouraged and is a good aid for asking questions both of the instructor and other students in the class. Do not hesitate to use it.

To sign on Eagle Online: Go to <http://www.hccs.edu> and look at right hand side of the page under Connect. Click on Online Courses.

Eagle Online Student User ID: Your login user ID will be your unique HCC User ID, which is the "W" number you used for registration of classes. The default student password for the first time use is "distance" and this is all lower case without the quote marks. Returning students will use their birth date as the password or will use the password that they created. If a student forgets their password for Eagle Online, they must get help from the Computer Center on the first floor; the instructor does not know the password.

Please log on to Eagle Online at home computer to make sure that you have access there. Turn off the "pop-up block" and click the "Check Browser" button to make sure that your browser is compatible with Eagle Online platform. Download the Adobe Acrobat reader, Java script and all other plug-ins. Log in with your W number and either use the default password "distance" or use the password that you created previously (you can make it the same as your HCC email password).

If you discover a great web site, please pass on this information and it will be added to the list of useful sites. The following medical websites can be used for further study on MLAB courses and these sites also represent the clinical laboratory profession, as a whole, and will broaden the outlook for the profession.

American Association of Blood Bank
<http://www.aabb.org>

American Association for Clinical Chemistry
<http://www.aacc.org>

American Medical Technologists
<http://www.amt1.com>

American Society for Clinical Pathologists
<http://www.ascp.org>

American Society for Clinical Laboratory Science ASCLS
<http://www.ascls.org/education/index.asp>

ASCLS – Texas
<http://www.tacls.org>

American Society for Microbiology
<http://asm.org>

Association of Public Health Laboratories
<http://www.aphl.org>

CDC
<http://www.cdc.gov>

CDC Morbidity and Mortality Report
<http://www.cdc.gov/mmwr/>

Clinical Laboratory Management Association
<http://www.clma.org>

College of American Pathologists
<http://www.cap.org>

Colorado Association for Continuing Medical Laboratory Education
<http://www.cacmle.org>

THIS SYLLABUS IS SUBJECT TO CHANGE WITHOUT PRIOR NOTIFICATION.