

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

**COURSE SYLLABUS**

MLAB 2331 – Immunohematology

Freshman

CRN 55000, 55004 - Spring 2018

HCC Coleman College

Spring Hours: 2 hours lecture, 4 hour lab/ 16 weeks

Credit: 3 Hours

160 Contact Hours

Type of Instruction: Web Enhanced Lecture and Lab

**Administrative Notes**

Instructor: Dock Yates, MLS (ASCP) BB  
Office: 713-718-5084  
John B. Coleman Building, Suite 213  
dock.yates@hccs.edu

**Course Schedule**

Office Hours Monday, Wednesday, Thursday 9:30am - 5:00pm

**Course Schedule**

Semester: Jan. 16, 2018 – May 13, 2018  
\*\*\*Class times may vary due to class material coverage\*\*\*

CRN 16669	Tuesday	Lecture	12:00pm – 3:00pm	Rm. 306(Tower)
CRN 16718	Tuesday	Lab A	8:00am – 11:00am	Rm. 813(Tower)
	Tuesday	Lab B	3:00pm – 6:00pm	Rm. 813(Tower)

Classroom: Lecture: Room 306 (Tower)  
Lab: Room 813 (Tower)

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support.  
Furthermore, please notify the professor if you are comfortable in doing so.

**Course Description**

A study of blood antigens and antibodies. Performance of routine blood banking procedures, including blood group and Rh typing, antibody screens, antibody identification, cross matching, elution, and absorption techniques.

**Course Prerequisite**

MLAB 1235

## **Course Goal**

Medical Laboratory Technicians must be proficient in theories and routine diagnostic procedures in Immunohematology. Information gained from this course will be essential for successful completion of the blood bank section of the ASCP Board of Certification exam and for obtaining employment as an entry-level Medical Laboratory Technician.

## **Course Student Learning Outcomes**

1. Apply principles of safety, quality assurance, and quality control.
2. Identify the cognitive theories of Immunohematology.
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 Immunohematology.**

- 2.1 Demonstrate the cognitive theories of Immunohematology 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. Describe the structure and function of the red cell and procedures used in the preservation of red cells.
2. Recall characteristics of platelets to include structure and function and describe platelet component preparation to include characteristics of single donor platelets versus random donor platelets.
3. Discuss basic genetic concepts and inheritance patterns.
4. Review basic immunological principles.
5. Discuss the principles and theories of the major blood group systems and describe characteristics of the antigens and antibodies associated with each system.
6. Describe the steps involved in donor selection and collection, the adverse reactions and treatments, and the mandatory testing that must be performed by the collecting and transfusing facilities.
7. For all blood components, describe their shelf life, storage temperatures and

requirements, quality control requirements, indications for use, content, dosage effect and transfusion criteria.

8. Discuss the various types of transfusion reactions to include cause, clinical signs and symptoms, treatment and testing involved in diagnosis.
9. Describe the detection, pathophysiology and treatment of HDN.
10. Discuss the theories of autoimmune hemolytic anemia.

### **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. Perform ABO and Rh typings, antibody screens, crossmatches, panels, and elutions.
2. Correctly interpret test results.
3. Perform and interpret quality control.

### **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.

### **Audio/Video Recording of Class Lectures and/or Labs**

The faculty or staff member instructing the class has the right to prohibit recording due to the lecture or lab being HCC property.

I will not allow any recording of any type in my classroom or lab. Anyone caught doing so will be subject to disciplinary action. A student must meet ADA requirements to record lectures and/or labs. Please contact your ADA councilor for more information if needed.

We need your undivided attention during lecture and lab. You must pay attention at all times to keep up and make steady progress in this program. Do your best every day.

## Course Calendar

The Course Outline is available on Eagle Online. This Outline is subject to change as needed by the instructor.

## 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.

**Instructional Materials:** The required textbook is Basic & Applied Concepts of Immunohematology 3<sup>rd</sup> ed. by Blaney and Howard. 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](http://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.

## Campus Carry Statement

At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/departments/police/campus-carry/>.

Texas HB 1508 requires the following information be given to students. If you are applying for admission to a program that prepares an individual for an initial occupational license or certification and/or if you later decide to change to a program that prepares you for an initial occupational license or certification, in accordance with state law, please be advised of the following:

1. An individual who has been charged or convicted of an offense or who is on probation may not be eligible for issuance of an occupational license or certification upon completion of the educational program.
2. It is the responsibility of the individual to immediately report to the program any change in status that would affect that individual's eligibility to apply for a license or certification.
3. Local, state or national licensing and certification authorities may issue additional guidelines related to criminal history. Applicants should contact their respective licensing or certification authority for more details.

Most health care programs require all students, admitted to the program, to submit to a national background check which may include fingerprinting. Applicants are encouraged to review all applicable eligibility requirements related to the respective occupational license or certification. Questions related to eligibility requirements should be directed to the individual program and applicable licensing or certification authority.

### **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. **This means that TWO days absent from this class is excessive.**

**\*\*\*Students will be dropped from any MLAB course for excessive tardiness. EIGHT 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. MUST provide appropriate documentation to receive an excused 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 **4/3/2018** before 4:30pm. 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.

### **EGLS<sub>3</sub> -- 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. **Students who show proof they have completed the EGLS3 will receive 2% add to their lowest major exam grade. This does not include Final Exams.**

### **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.

### **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 2331 is a three-hour lecture and a three-hour lab course. Students will be graded according to the following:

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

**Please Note: All grades are rounded to the nearest whole number.**

There will be 5 unit exams for this course. Material for these exams will come from the textbook, power points, labs, and handouts given to students on Eagle Online. 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 failing grade for the course.**

**Any student failing an exam will be given an Early Alert Form by their Professor. The student is responsible for making an appointment to see the Program Director regarding the failed exam. Students who do not see the Program Director will not be allowed to take the following exam.**

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. The evaluation will consist of an assessment of student's psychomotor skills and written case studies and chapter information. Assessments are 30% of the course grade. Each lab assessment must be passed with a grade of 75% or better. If the assessment is given in parts (written and hands-on); both parts must be passed with 75%. If a student fails a lab assessment, 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 failing grade for the course.**

The final exam is comprehensive or cumulative and counts for 30% 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 and will fail the course.**

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. They will consist of material covered the previous class and material to be covered during the current class period.

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. Students who do not complete the BOC study questions will be given an "I" until all are completed with 100% accuracy.

### **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](http://www.hccs.askonline.net). This is a great program for help in your academic classes.

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>

### **Title IX Statement**

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross

Director EEO/Compliance

Office of Institutional Equity & Diversity

3100 Main

(713) 718-8271

Houston, TX 77266-7517 or Houston, TX 77266-7517 or [Institutional.Equity@hccs.edu](mailto:Institutional.Equity@hccs.edu)

Title IX of the Education Amendments of 1972 requires that institutions have policies and procedures that protect students' rights with regard to sex/gender discrimination. Information regarding these rights are on the HCC website under Students-Anti-discrimination. Students who are pregnant and require accommodations should contact any of the ADA Counselors for assistance.

It is important that every student understands and conforms to respectful behavior while at HCC. Sexual misconduct is not condoned and will be addressed promptly. Know your rights and how to avoid these difficult situations.

Log in to [www.edurisksolutions.org](http://www.edurisksolutions.org). Sign in using your HCC student email account, then go to the button at the top right that says Login and enter your student number.

**THIS SYLLABUS IS SUBJECT TO CHANGE WITHOUT PRIOR NOTIFICATION.**