

**McLennan**  
C O M M U N I T Y  
**C O L L E G E**

WACO, TEXAS

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**COURSE SYLLABUS**  
**AND**  
**INSTRUCTOR PLAN**

**Immunohematology**

**MLAB 2431.01**

**Dr. Samantha Dove, Ed.D. MT (AAB)**

**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 on any changes to these guidelines.

## Immunohematology

MLAB 2431.01

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### **Course Description:**

MLAB 2431 Immunohematology is a study of blood antigens and antibodies and the performance of routine blood banking procedures, including blood group and Rh typing, antibody screens, antibody identification, cross matching, elution, and absorption techniques. The class utilizes a student laboratory for experiences in fundamental immunohematology.

### **Prerequisites and/or Corequisites:**

Prerequisite: Admission to the medical laboratory technician program, and approval by the program director. Semester hours: 4 (2 lec/ 4 lab)

### **Course Notes and Instructor Recommendations:**

Have your textbook by the first day of class. Estimated study time outside of class: 12–14 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. If the computer you are using does not have a copy of Microsoft Office for Word, Power Point, Excel Spreadsheets, etc. you will need to either purchase Microsoft Office (MCC Bookstore has student version/price) or download Open Office. Students should also download Adobe Reader to open any PDF files in the course (free download).

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/>

### **Instructor Information:**

Instructor Name: Dr. Samantha Dove

MCC E-mail: [sdove@mclennan.edu](mailto:sdove@mclennan.edu)

Office Phone Number: 254-299-8119

Office Location: S321

Office/Teacher Conference Hours: Located outside office door

Other Instruction Information:

**Required Text & Materials:**

Title: Clinical Laboratory Blood Banking and Transfusion Medicine Principles and Practice

Author: Johns, Gockel-Blessing, Zundel, and Denesiuk

Edition: 1<sup>st</sup>

Publisher: Pearson

ISBN: 978-0-13-083331-0

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

**Methods of Teaching and Learning:**

Students will be taught using various learning methods and activities including lectures, demonstrations, practice sessions, case studies, projects, laboratory exercises, clinical experiences, worksheets, Internet exercises, quizzes, exams, streaming video, and recordings. Course materials will be available on Brightspace for student access during the course.

Resources are also available in the student laboratory, campus library, and hospital libraries, as well as at the clinical sites.

**Course Objectives and/or Competencies:**

MLAB 2431 investigates the theory and techniques connected with ABO blood grouping, the Rh system and other major blood antigen systems. It explores methods for blood processing, handling, and storage, and examines cross matching and antibody identification procedures. The course is designed to prepare students to function in an entry-level position in a routine immunohematology laboratory. Emphasis will be placed on routine blood banking procedures, including blood donation, type and crossmatches, antibody screens and identification, and component preparation. Immunohematology testing will also be studied in relationship to disease states.

After completion of MLAB 2431 Immunohematology, the student should be able to meet the following general course objectives:

1. Collect, process, and analyze immunohematology specimens. (F01, F02, F03, C01, C02, C03, C04, C05)
2. Recognize factors that affect methods and test results and take appropriate actions within established guidelines. (F01, F02, F03, C01, C02, C03, C04, C05)

3. Perform and monitor routine departmental quality control. (F01, F02, F03, C01, C02, C03, C04, C05)
4. Perform preventive and corrective maintenance of equipment and instruments. (F01, F02, F03, C01, C02, C03, C04, C05)
5. Apply principles of laboratory safety, including Standard Precautions. (F01, F02, F03, C01, C02, C03, C04, C05)
6. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public. (F01, F02, F03, C01, C02, C03, C04, C05)
7. Apply basic scientific principles in learning new techniques and procedures. (F01, F02, F03, C01, C02, C03, C04, C05)
8. Relate laboratory test results to common disease processes. (F01, F02, F03, C01, C02, C03, C04, C05)
9. Establish and maintain continuing education as a function of growth and maintenance of personal and professional competence. (F01, F02, F03, C01, C02, C03, C04, C05)

### **Rationale**

Medical laboratory technician students must demonstrate entry-level proficiency in the practice of Immunohematology testing as a fundamental part of the MLT training. This course is designed to aid students academically, mentally and emotionally for the experiences they will encounter in the clinical or workplace setting.

### **Learning Outcomes**

Learning outcomes, or specific course objectives, for the cognitive, affective, and psychomotor domains are listed for each unit and will be available to students on the first day of class via Brightspace.

### **Course Outline or Schedule:**

1. The Immune Process: The Origin and Interaction Between Antigens and Antibodies
2. Immunogenetics: The Origin of Antigens
3. Blood Bank Applications of Antigen-Antibody Reactions
4. ABO and Hh Blood Group Systems
5. Rh, RhAg, and LW Blood Group Systems
6. Other Blood Group Systems

7. Pretransfusion and Compatibility Testing
8. Identification of Unexpected Antibodies
9. Donor Selection, Phlebotomy, and Required Testing
10. Blood Products: Preparation, Storage, and Shipment of Blood Components
11. Component Therapy and Massive Transfusion
12. Adverse Reactions to Transfusion
13. Transfusion-Transmitted Infections
14. Perinatal and Neonatal Transfusion Issues
15. Autoimmune and Drug-Induced Immune Hemolytic Anemias
16. Platelet Refractory Patients
17. Transfusion Support of Selected Patient Populations
18. Human Histocompatibility
19. Methods in Parentage Testing
20. Transfusion Safety and Regulatory Issues
21. Quality Assurance

**Course Grading Information:**

<b>Grade</b>	<b>Percentage Points</b>
<b>A</b>	<b>90-100%</b>
<b>B</b>	<b>80-89%</b>
<b>C</b>	<b>75-79%</b>
<b>D</b>	<b>70-74%</b>
<b>F</b>	<b>69% and below</b>

I round final grades. For example, if you achieve a final score of 79.5%, you will receive a B in the course. If you achieve a 79.4%, you will receive a C. Any student earning a grade of less than 75% on an assignment is required to schedule a conference time with the Program Director.

	<b><u>Breakdown</u></b>
Assignments	20%
Lab Exercises	20%
Examinations	45%
Final Exam	15%
<b>Total Course Percentage</b>	<b>100%</b>

### **Assignments**

Your assignment grade may include work such as quizzes, projects, worksheets, and/or homework. All assignments must be turned in Sunday by midnight or the student will receive a zero for the assignment.

### **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. All labs must be turned in Sunday by midnight or the student will receive a zero for the lab.

### **Examinations**

There are five major examinations which may be comprehensive. Make-up examinations will be scheduled during dead week (the week before finals begin at the end of the semester - please see the attendance policy). Students may only make-up an exam with a doctor's note or proof of a death in the immediate family. No student will be allowed to make up more than one examination. ALL tests will be proctored.

### **Final Exam**

The Final Exam will be a 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.

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 and make up missed exam or Lab competency within one week following the Exam date or Lab Competency date. If a student fails to follow these instructions for making up an exam or Lab competency, the student will receive a zero (0%) for that exam or **UNSATISFACTORY** for the Lab competency.

**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 Absences on Religious Holy Days

McLennan Community College shall excuse a student from attending classes or other required activities including examinations for the observance of a religious holy day, including travel for that purpose. Students are required to file a written request with each instructor for an excused absence. A student whose absence is excused for this observance may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. Religious holy day means a holy day observed by a religion whose places of worship are exempt from property taxation under the Texas Tax Code. McLennan Community College may not excuse absences for religious holy days which may interfere with patient care.

**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.

**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. Students are NOT to receive or place telephone calls or text messages during class, labs, or clinical hours. Cellular telephones and other electronic devices are to be turned off before entering the classroom, student laboratory, or the clinical site. Messages for students may be left with the Health Professions Executive Secretary (254-299-8568). Messages during an emergency will be delivered immediately to the student. Inappropriate use of any electronic device may result in disciplinary action.

**[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. Your instructor may have additional guidelines specific to this course.



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## ACADEMIC RESOURCES/POLICIES

### **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/>

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 a Success Coach by calling (254) 299-8226 or emailing [SuccessCoach@mclennan.edu](mailto:SuccessCoach@mclennan.edu). Students may visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a Success Coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and 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](https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf).

### **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.

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

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty%20and%20Staff%20Commons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

**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.

**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](mailto:Helpdesk@mclennan.edu) for help.

**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.

**MCC Academic Integrity Statement:**

Go to [www.mclennan.edu/academic-integrity](http://www.mclennan.edu/academic-integrity) for information about academic integrity, dishonesty, and cheating.

**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](http://www.mclennan.edu/disability).

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

[disabilities@mclennan.edu](mailto: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 Title IX Coordinator at [titleix@mclennan.edu](mailto:titleix@mclennan.edu) or by calling Dr. Drew Canham (Chief of Staff for Diversity, Equity & Inclusion/Title IX) at (254) 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC 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/](http://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.

**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.