

## Course Information

**Course Prefix No.:** MLT 120  
**Course Title:** Immunoematology  
**Lecture hrs/wk:** 6.0  
**Lab hrs/wk:** 3.0  
**Credit hrs/sem:** 4.0

### DL Attendance/VA Statement

### Textbook Information

**Entry Level Skills:** Students should have a basic knowledge of the metric system, scientific notation, centrifuges, the microscope, pipetting, and the guidelines for laboratory safety.

**Prerequisite:** None \*

**Co-requisite:** None \*

\*Note: MLT classes must be taken in accordance with the curriculum display as outlined in the college catalog and MLT program handbook.

**Course Description:** This course introduces the theory and practice of blood banking, including the ABO, Rh, and other blood group systems, compatibility testing, and HDN.

In addition, attention is given to the understanding of basic immunology and genetics; blood donation and component therapy; anti-human globulin testing; detection and identification of antibodies; and quality control.

### Course Competencies:

Upon completion of this course the student will be able to:

1. List and characterize the classes of immunoglobulins and the types of lymphocytes.
2. Perform ABO forward typing and reverse grouping.
3. Perform Rh typing.
4. Illustrate the inheritance of ABO blood types.
5. Set up tests for the detection and identification of antibodies.
6. Crossmatch patient samples with compatible blood donors.
7. Describe the process of Hemolytic Disease of the Newborn.
8. Perform a cord blood work up.
9. State the criteria for the selection and screening of donors.
10. Outline the preparation, storage requirements, and use of blood components.
11. Perform and interpret QC testing on reagents and anti-sera.
12. Promote professionalism through dress, conduct, and attitude.

### **Performance Objectives:**

1. Given appropriate drawings, the student will illustrate each immunoglobulin class, label a basic Ig structural unit, and describe the types of lymphocytes and their functions.
2. Using either the anti-sera and reverse grouping cells provided or gel technology, the student will determine the ABO group of five patients with 100% accuracy.
3. Using either the anti-sera provided or gel technology, the student will determine the Rh type of five patients with 100% accuracy.
4. Drawing Punnett squares, the student will conclude the possible offspring from various phenotype and genotype matings.
5. Given either antibody screening cells and panel cells or gel technology, the student will identify all antibodies in three patient samples with 100% accuracy.
6. Given outdated units of blood from the hospital blood bank, the student will select appropriate ABO and Rh types and perform compatible crossmatches on three patients.
7. Using drawings and transparencies, the student will reconstruct the developmental process of HDN.
8. Using cord blood samples from the hospital and reagent cells and anti-sera, the student will perform two cord blood work-ups with 100% accuracy.
9. Utilizing information in the AABB Technical Manual or text, the student will memorize the criteria for the selection and screening of donors.
10. Using information obtained from publication of the American Red Cross or text, the student will outline the preparation, storage, and use of blood components.
11. Given a Blood Bank Quality Assurance Reagent Testing kit, the student will perform and interpret results of QC on his/her rack of reagents with 100% accuracy.
12. Utilizing information obtained in MLT 101 on professionalism, the student will display appropriate dress, conduct, and attitude at all times.

**Note:** For further objectives, refer to learning objectives at the beginning of each chapter of the text.

### **Course Requirements:**

1. Attend lecture/lab consistently. The maximum number of allowable absences is **10%.(9 hrs)**
2. Students will adhere to the student code of conduct as described in the York Technical College Catalog and Handbook. Students will conduct themselves with dignity and maintain high standards of responsible citizenship. Any student caught cheating or involved in any other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action.

### **Evaluation Strategies/ Grading:**

1. Perform all laboratory exercises at a satisfactory level according to guidelines set by the instructor.
2. Report on a topic pertinent to blood banking.
3. Take and pass 3 written tests and a final comprehensive exam.
4. Perform at a satisfactory level, a lab practical at the end of the semester.
5. Take and pass unannounced quizzes.

The course grade is an average of your lab grade, your report, the three test grades, the final exam, pop quizzes, and the lab practical. The average **must** be 70 or greater to continue in the MLT program of study. Professionalism as outlined in MLT 101, and attendance **must** be satisfactory for the final grade to be given.

**Grading Scale:** 90 – 100 = A  
80 – 89 = B  
70 – 79 = C  
<70 = F