

**Course Description****MLS4552 | Clinical Immunohematology | 3.00 credits**

The study of concepts related to the blood group systems, blood antigens and antibodies. The student will analyze the principles, procedures and clinical significance of testing in genetics, pre-transfusion testing, adverse effects of transfusions, donor selection and components, and hemolytic disease of the newborn.

**Course Competencies:**

**Competency 1:** The student will examine the essential concepts of Immunohematology by:

1. Outlining the general steps for proper blood collection, processing and transportation
2. Explaining the Fundamentals of Immunology
3. Explaining Basic Genetics
4. Explaining the Blood Bank Record-Keeping System and the importance of the Blood Bank Forms and Data
5. Explaining the retention time of the Blood Bank documents

**Competency 2:** The student will demonstrate knowledge of Blood Groups and Serological Testing by:

1. Analyzing and evaluating the Antiglobulin Test
2. Analyzing and evaluating the ABO Blood Group System
3. Analyzing and evaluating the Rh Blood Group System
4. Analyzing and evaluating Blood Group Terminology & Common Blood Groups
5. Analyzing and evaluating Uncommon blood groups
6. Describing Detection and Identification of Antibodies
7. Understanding Pre-transfusion Testing
8. Analyzing and evaluating Blood Bank Testing
9. Technologies and Automation

**Competency 3:** The student will examine transfusion practices by:

1. Illustrating donor selection
2. Explaining Transfusion-Transmitted Diseases
3. Explaining Component Preparation
4. Explaining Transfusion Therapy
5. Detecting Adverse Effects of Blood Transfusion
6. Explaining Apheresis
7. Explaining Hemolytic Disease of the Fetus and Newborn
8. Explaining Autoimmune Hemolytic Anemias
9. Evaluating Tissue Banking

**Competency 4:** The student will demonstrate knowledge of Leukocyte Antigens and Relationship Testing by:

1. Identifying the Human Leukocyte Antigens (HLA)
2. Analyzing and evaluating the HLA System
3. Analyzing and evaluating relationship testing

**Competency 5:** The student will be analyzing Quality Management and Compliance by:

1. Examining Quality Management in the Blood Bank
2. Analyzing and evaluating Patient Blood Management
3. Analyzing and evaluating Transfusion Safety and Federal Regulatory Requirements
4. Analyzing Laboratory Information Systems in the Blood Bank
5. Explaining Medicolegal and Ethical Aspects of
6. Providing Blood Collection and Transfusion Services

**Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning