

Minnesota State College Southeast

MEDL 2115: Immunohematology

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 2

Lab Hours/Week: 4

OJT Hours/Week: *.*

Prerequisites:

This course requires both of these prerequisite categories

1. MEDL 1116 - Immunology

And

2. MEDL 2105 - Hematology 2

Corequisites: None

MnTC Goals: None

This course introduces the principles of genetics and immunology to the discipline of blood banking. A focus on blood bank concepts and procedures, including blood typing, blood group systems, antibody screening and identification, compatibility testing, blood donation, transfusion therapy, transfusion reactions and hemolytic diseases of the fetus and newborn (HDFN). Students will perform basic blood banking procedures, including blood typing and compatibility testing and gain experience in a simulated clinical Blood Bank laboratory. (Prerequisite: MEDL1116, MEDL2105. Must be a Medical Laboratory Technician accepted student) (4 credits: 2 lecture/2 lab)

B. COURSE EFFECTIVE DATES: 05/07/2012 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Describe the basic principles of immunohematology
2. Categorize pretransfusion testing and transfusion practices
3. Demonstrate comprehension of the technical and procedural aspects of immunohematological testing
4. Correlate complications found in immunohematology
5. Exhibit an awareness of regulatory requirements, safety regulations, ethical standards and practices in the immunohematology laboratory
6. Utilize effective oral and written communication skills

D. LEARNING OUTCOMES (General)

1. Outline the genetic principles and characteristics associated with antigen-antibody reactions in red blood cells, HLA antigens in white blood cells, and platelet immunology
2. Contrast the ABO, Rh, and other major blood group systems and their associated antigen-antibody reactions
3. Describe and perform ABO, Rh, antigen typing, indirect and direct antibody testing methodology, and fetal screen
4. Organize and perform pretransfusion testing including antibody and compatibility testing and discuss automation in the blood bank laboratory including the gel blood banking system
5. Identify adverse complications of transfusions including transfusion reactions, hemolytic disease of the fetus and newborn, TRALI, TACO, and sepsis
6. Differentiate between acute and delayed hemolytic transfusion reactions
7. Compare immune and non-immune causes of transfusion reactions
8. List the criteria for donor selection, donor testing, screening of products, component preparation and transfusion therapy
9. Outline quality assurance and safety issues in the immunohematology
10. Choose the appropriate reagents and methods for the testing to be completed
11. Conclude from basic testing which blood products are compatible with the patient
12. Analyze and evaluate an antibody identification panel to determine the potential antibody present, distinguish alloantibody or autoantibody, and confirm the panel meets the "rule of three"
13. Adopt proper policies and procedures provided to complete immunohematological testing in the laboratory setting
14. Demonstrate the skills and abilities needed to independently perform immunohematological laboratory procedures
15. Participate in assimilation laboratory experience

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted