

BARTON COMMUNITY COLLEGE

COURSE SYLLABUS

I. GENERAL COURSE INFORMATION

Course Number: MLTC 1508

Course Title: MLT Immunohematology

Credit Hours: 6

Prerequisites: Fundamentals of General Chemistry and General Microbiology and Anatomy & Physiology or equivalents, passed with a minimum of a C or instructor permission.

Division/Discipline: Workforce Training and Community Education Division, Medical Laboratory Technology Program.

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Course Description: A study of the immunology of blood, including those principles and practices that are known collectively as blood banking. An overview of blood component collection and component preparation is presented. Basic concepts of genetics, immunology, and antiglobulin testing are included as a foundation for the understanding of the blood group systems and antibody detection and identification. Current transfusion practices are discussed. The student will gain experience in performance of techniques in immunohematology to include blood typing, cross-matching, direct and indirect coombs testing and antibody identification. Hands on laboratory time is required.

II. INSTRUCTOR INFORMATION

III. COLLEGE POLICIES

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage.)

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu

IV. COURSE AS VIEWED IN THE TOTAL CURRICULUM

This is one of a series of technical courses for the Medical Laboratory Technology Program. This course is designed to develop the knowledge and competencies related to immunohematology and to develop useful job-oriented skills and safety practices for the medical laboratory professional and includes information, at a minimum, from the current Body of Knowledge for Medical Laboratory Technicians

Students planning to transfer credit for a baccalaureate degree will be granted transfer credit only as determined by the four year institution.

The transferability of all college courses will vary among institutions, and perhaps even among departments, colleges, or programs within an institution. Institutional requirements may also change without prior notification. Students are responsible to obtain relevant information from intended transfer institutions to ensure that the courses the student enrolls in are the most appropriate set of courses for the transfer program

V. ASSESSMENT OF STUDENT LEARNING/COURSE OUTCOMES

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies

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

- A. Relate the proper specimen collection and handling, type of quality control used, reference ranges, principle of analysis currently available, and sources of analytical errors for each of the analytes discussed or approached in the course.
 1. Quality Control and Quality Assurance in Blood Banking
 2. Performance of all aspects of Quality Control as it relates to Blood Banking
 3. Explain the procedures involved and the need for Quality Assurance in Blood Banking
- B. Perform all procedures with regard to prescribed safety protocol and confidentiality.
- C. Correlate abnormal results with the most likely disease process by determining the clinical significance of the findings.
- D. Describe the theory and principles of immunogenetics and immunohematology.
 1. Describe Blood Group inheritance patterns
 - a. Interpret the inheritance pattern of a trait or gene

- b. Explain the inheritance of human blood groups
 2. Describe the role of the immune system in Blood Banking
 - a. Describe the characteristics and function of cells in the immune response
 - b. Describe the structure and explain the significance of immunoglobulins in relation to blood banking.
 3. Name the immunoglobulin types associated with blood banking antibodies.
 - a. Name the three immunoglobulin types associated with blood banking
 - b. List and describe the properties associated with each of the three immunoglobulins.
 4. Distinguish between in “vivo” and “vitro” antigen-antibody interaction.
 5. Identify the factors that influence antigen-antibody reactions
- E. List the major blood group systems and the major antigens and associated antibodies of each system.
 1. ABO systems
 2. Rh systems
 3. Lewis, I, P, MNSs, Kell, Duffy, Kidd and Lutheran systems
- F. Describe the theory and principles of routine blood banking procedures.
 1. Basic techniques
 2. ABO Rh typing
 3. Antiglobulin Testing
 4. Antibody Detection
 5. Compatibility Testing
- G. Perform routine blood banking procedures with competency (as judged with the use of control materials)
 1. Pre-transfusion Testing
 - a. ABO Rh Type
 - b. IAT & DAT Testing
 - c. Antibody Detection and Identification
 - d. Compatibility Testing
 - e. Hemolytic Disease of the Newborn
 2. Post-transfusion Testing
 - a. Transfusion Reaction Workup
 - b. Emergency Use of Blood and Blood Products
- H. Demonstrate the proper use and care of selected associated laboratory equipment.
 1. Immunofuges
 2. Dry incubators
 3. Macroviewer
 4. Refrigerators and freezers
- I. Illustrate the basic concepts of donor selection and the therapeutic use of blood components.
 1. Blood products, processing and storage

2. Donor requirements
3. Collection and storage of blood and components

VI. INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS

VII. TEXTBOOKS

VIII. REFERENCES

IX. METHODS OF INSTRUCTION AND EVALUATION:

X. ATTENDANCE REQUIREMENTS

05/12/2015cal