Clinical Immunogy BIMS 4430
Department of Life Sciences
Clinical Laboratory Sciences Program
Fall 2015

A. COURSE INFORMATION

Course number/section: BIMS 4430.001
Class meeting time: MW 3:30-4:20; Lab W 9:30-12:20; W 5:00-7:50
Class location: EN 107; Lab CS231
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Larry Burk, MT(ASCP) SBB
Office location: By appointment
Office hours: By appointment
Telephone: 361-813-3675 (mobile), 361-881-3923 (work)
e-mail: larry.burk@christushealth.org
Appointments: Contact me at the above numbers or after class.

C. COURSE DESCRIPTION

Catalog Course Description
Theoretical aspects of the immune response and its relationship to the diagnosis of disease and clinical immunohematology. Lecture and laboratory stress the detection, identification and characterization of antibodies, blood grouping and typing, compatibility testing, blood component therapy, HLA testing and diagnosis of pathological conditions.

Extended Course Description
This course studies the theoretical aspects of the immune response and its relationship to the diagnosis of disease and immunohematology. Lecture and laboratory stress the detection, identification and characterization of antibodies, problems solving in blood grouping and typing, compatibility testing, and hemolytic disease of the newborn. Lectures will cover common transfusion service practices and regulations, quality assurance, and blood component therapy.

D. PREREQUISITES AND COREQUISITES

Prerequisites
Prerequisite: BIMS 4406 or BIOL 4406.

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)

Optional Textbook(s) or Other References
None

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
By the end of this course, students should be able to:
1. Describe the techniques, principles and instruments used for immunohematology and serology in the clinical laboratory.
2. Describe serological procedures used in diagnosis of diseases and immunohematological problems.
3. Explain internal and external regulation of the laboratory.
4. Explain the current theory of the immune response and immunological procedures.
5. Evaluate laboratory and clinical results to determine normal and abnormal results.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
Powerpoint lectures, case studies and laboratory assignments

H. MAJOR COURSE REQUIREMENTS AND GRADING
Lecture exams will be given throughout the semester along with a final comprehensive exam. Laboratory assignments will be graded and must be successfully completed in order to pass the lab portion.

Exam I 15%
Exam 2 15%
Exam 3 15%
Attendance 5%
Laboratory 25%
Final 25%

All tests will be multiple choice and possibly some short answer, and identifications. All examination questions are keyed to the lecture and laboratory objectives. Careful study of these objectives is required for each examination. Examinations may be taken only during the scheduled time.
### I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Reading</th>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 26</td>
<td>Introduction to Clinical Immunohematology</td>
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<td>No Lab</td>
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<tr>
<td>August 31</td>
<td>Immunology: Antibody, Antigen, Ab-Ag Reactions</td>
<td>Ch. 3</td>
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<tr>
<td>September 2</td>
<td>ABO-H System, Lewis System, Secretor Status</td>
<td>Ch. 6, 8</td>
<td>LAB 1: Laboratory Safety and Introduction</td>
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<td>September 7</td>
<td>Labor Day Holiday</td>
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<tr>
<td>September 9</td>
<td>ABO Problems</td>
<td>Ch. 6</td>
<td>Lab 2: Quality Control</td>
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<tr>
<td>September 14</td>
<td>Antiglobulin Test &amp; Complement Activation</td>
<td>Ch. 5</td>
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<tr>
<td>September 16</td>
<td>Rh System I</td>
<td>Ch. 7</td>
<td>Lab 3: ABO and Rh Typing</td>
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<tr>
<td>September 21</td>
<td>Rh System II</td>
<td>Ch. 7</td>
<td></td>
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<tr>
<td>September 23</td>
<td>EXAM 1</td>
<td></td>
<td>Lab: 4: ABO and Rh Typing</td>
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<tr>
<td>September 28</td>
<td>Other Blood Group Systems I</td>
<td>Ch. 8</td>
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<tr>
<td>September 30</td>
<td>Other Blood Group Systems II</td>
<td>Ch. 8</td>
<td>Lab 5: Unknown ABO/Rh Typing</td>
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<td>October 5</td>
<td>Antibody Testing &amp; Antibody Identification</td>
<td>Ch. 9</td>
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<tr>
<td>October 7</td>
<td>Antibody Detection Method Comparisons</td>
<td>Ch. 9</td>
<td>LAB 6: Indirect Coombs Testing</td>
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<td>October 12</td>
<td>Mid term review</td>
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<tr>
<td>October 14</td>
<td>Identification of Multiple Antibodies</td>
<td>Ch. 9</td>
<td>LAB 7: Cord Blood and DAT</td>
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<td>October 19</td>
<td>Hemolytic Disease of the Fetus &amp; Newborn</td>
<td>Ch. 19</td>
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<tr>
<td>October 21</td>
<td>Elution Methods</td>
<td>Ch. 9</td>
<td>LAB 8: Antibody Identification</td>
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<td>October 26</td>
<td>EXAM 2</td>
<td></td>
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<tr>
<td>October 28</td>
<td>Compatibility Testing</td>
<td>Ch. 10</td>
<td>LAB 9: Antibody Identification</td>
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<tr>
<td>November 2</td>
<td>Resolving Autoantibodies</td>
<td>Ch. 20</td>
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<tr>
<td>November 4</td>
<td>Blood Donation &amp; Component Preparation</td>
<td>Ch. 13, 14</td>
<td>LAB 10: Unknown Antibody Identification</td>
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<td>November 9</td>
<td>Transfusion Therapy</td>
<td>Ch. 15, 17</td>
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<tr>
<td>November 11</td>
<td>Transfusion Complications</td>
<td>Ch. 16</td>
<td>LAB 11: Compatibility Testing</td>
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<td>November 16</td>
<td>Blood Bank Regulations</td>
<td>Ch. 13, 23, 25</td>
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<td>November 18</td>
<td>Blood Bank Automation</td>
<td>Ch. 12</td>
<td>LAB 12: Serology I</td>
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<tr>
<td>November 23</td>
<td>Blood Group Genetics</td>
<td>Ch. 2</td>
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<td>November 25</td>
<td>Current Research Trends</td>
<td></td>
<td>LAB 13: Serology II</td>
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<tr>
<td>November 30</td>
<td>EXAM 3</td>
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<tr>
<td>December 2</td>
<td>Reading Day</td>
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<tr>
<td>December 9</td>
<td>Final Exam - Comprehensive</td>
<td>1:45-4:15 PM</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. **COURSEPOLICIES**

**Attendance/Tardiness**
Your attendance is expected in both lecture and laboratory.

**Late Work and Make-up Exams**
Late work is not accepted and examinations may be taken only during the scheduled time.

**Extra Credit**
None

**Cell Phone Use**
Cell phones will be turned off during class and laboratory.

**Laptop Use**
Laptops are not required but can be used in both lecture and laboratory for notes.

**Food in Class**
No eating in the classroom or laboratory.

**Missed Exam**
Examinations may be taken only during the scheduled time or a different exam may be administered to the student at a scheduled time after speaking with the instructor.

**Participation**
Participation is expected in the classroom and required in the laboratory.

**Others**
Students are expected to act professionally in the lecture and laboratories while in the program as these courses are preparing the students for professional careers once completed.

K. **COLLEGE AND UNIVERSITY POLICIES**

- **Academic Integrity (University)**
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in
personal behavior. 
See Full University Policy at http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity

- Classroom/Professional Behavior

- Deadline for Dropping a Course with a Grade of W (University)
The grade of W will be assigned to any student officially dropping a course by Friday, November 6, 2015. No student is eligible to receive a W without completing the official drop process by this deadline. Visit the Office of the University Registrar for the Course Drop Form that must submitted. After November 6, 2015 a student will not be allowed to drop a course.

- Grade Appeals (College of Science and Engineering)
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- Disability Services
Disability Services (DS) is the hub for coordinating services and accommodations to ensure accessibility and utilization of all programs for all Texas A&M University-Corpus Christi students with disabilities. Our services are designed to meet the unique educational needs of enrolled students with documented permanent or temporary disabilities. DS provides intake and consultation services to students seeking to register with our office. DS reviews an individual’s documentation of disability and assesses eligibility for services and the determination of reasonable accommodations. For more information visit the Disability Services Office at 116 Corpus Christi Hall or go to http://disabilityservices.tamucc.edu/

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course
policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.