HEMATOLOGY BIMS 4420
Department of Life Sciences
Clinical Laboratory Sciences Program
Fall 2015

A. COURSE INFORMATION

Course number/section: BIMS 4420.001
Class meeting time: MW 8:00-9:20
Class location: EN 107
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Jean Sparks, PhD, MLS(ASCP)
Office location: CS 130G
Office hours: TR 2:00-4:00 PM and F 9-10 AM and by appointment
Telephone: 825-2359 (office
 e-mail: jean.sparks@tamucc.edu
Appointments: TBA

C. COURSE DESCRIPTION

Catalog Course Description
Studies of the formation, function and identifying characteristics of the cellular elements of human blood and other body fluids in health and diseased states and laboratory studies on blood coagulation. Lecture and laboratory emphasize the enumeration, morphology and staining characteristics of normal and abnormal cells and hemostasis. Prerequisite: BIOL 2416, CHEM 4401. Safety training given during a laboratory meeting early in the semester is required for continued participation in this course.

Extended Course Description
This course studies the formation, function and identifying characteristics of the cellular elements of human blood in healthy and diseased states and the evaluation of hemostasis. Lecture and laboratory emphasize the enumeration, morphology and staining characteristics of normal and abnormal blood cells, hematological pathologies and laboratory procedures used in differential diagnosis.

D. PREREQUISITES AND COREQUISITES

Prerequisites
Requires Instructor Approval and registration in Lab; BIOL 2416, CHEM 4401

Corequisites
SMTE 0092
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook
McKenzie and Williams, Clinical Laboratory Hematology, 3rd edition, 2014, Pearson

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Discuss basic techniques, principles and instruments used in the diagnosis of hematological disorders.
2. Identify the cellular elements of the peripheral blood and bone marrow and the abnormalities of these cells and normal numbers and percentages of cells and changes expected in disease states.
3. State the current theory of coagulation and testing procedures used to evaluate normal coagulation.
4. Evaluate anemias, white blood cell abnormalities and coagulation disorders based on clinical and laboratory information.
5. Evaluate laboratory test results and correlate with clinical history.
6. Select appropriate laboratory procedures useful in the diagnosis and the confirmation of hematological disorders.

The specific laboratory objectives are contained in the lab manual and specific lecture objectives are provided. All examination questions are keyed to those objectives.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Lectures, case studies, and laboratories will be utilized together for concept learning.

H. MAJOR COURSE REQUIREMENTS AND GRADING

The final grade will be based on the points scored on a comprehensive final examination, four term examinations, and graded laboratory and class evaluations.

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

Laboratory and class evaluations should be turned into the instructor at the beginning of class or lab the week following an assignment. Work will not be accepted late and a zero will be given for the assignment. Unscheduled quizzes may be given during lecture and lab sessions and a zero will be given for a missed quiz.

All tests will be multiple choice with some short answer and identifications. The final may require a scantron card for an answer sheet. 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.

The following scale will be used to report grades:
A - 90 - 100
B - 80 - 89
C - 70 - 79
D - 60 - 69
F - below 60

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 - Hematopoiesis</td>
<td>Ch. 1, 3, 4</td>
<td></td>
</tr>
<tr>
<td>August 31</td>
<td>Erythrocytes and Hemoglobin</td>
<td>Ch. 5, 6</td>
<td></td>
</tr>
<tr>
<td>September 2</td>
<td>Introduction to Anemia</td>
<td>Ch. 8</td>
<td>Lab 1: Intro/Safety/Microscopes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WBC Normals – Differential</td>
</tr>
<tr>
<td>September 7</td>
<td>Labor Day Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September 9</td>
<td>Anemias of Iron Metabolism</td>
<td>Ch. 9</td>
<td>Lab 2: RBC Indices</td>
</tr>
<tr>
<td>September 14</td>
<td>Hemoglobinopathies</td>
<td>Ch. 10</td>
<td>RBC Morphology</td>
</tr>
<tr>
<td>September 16</td>
<td>Thalassemias</td>
<td>Ch. 11</td>
<td></td>
</tr>
<tr>
<td>September 21</td>
<td>Macrocytic Anemias</td>
<td>Ch. 12</td>
<td>Lab 3: RBC Morphology/SS Prep</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peripheral Smear/Staining</td>
</tr>
<tr>
<td>September 23</td>
<td>Hypoproliferative Anemias</td>
<td>Ch. 13</td>
<td></td>
</tr>
<tr>
<td>September 28</td>
<td>Hemolytic Anemias</td>
<td>Ch. 15,16</td>
<td>Lab 4: RBC Morphology/ESR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reticulocyte Counts</td>
</tr>
<tr>
<td>September 30</td>
<td>Hemolytic Anemias</td>
<td>Ch. 17, 18</td>
<td></td>
</tr>
<tr>
<td>October 5</td>
<td>EXAM 1</td>
<td></td>
<td>Lab 5: Practical - Identification</td>
</tr>
</tbody>
</table>

3
<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Chapter</th>
<th>Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 7</td>
<td>Leukocytes</td>
<td>Ch. 7</td>
<td>Practical - Written</td>
</tr>
<tr>
<td>October 12</td>
<td>Nonmalignant Granulocyte and</td>
<td>Ch. 19</td>
<td>Lab 6: WBC Maturation and Abnormal</td>
</tr>
<tr>
<td></td>
<td>Monocyte Disorders</td>
<td></td>
<td>Differentials</td>
</tr>
<tr>
<td>October 14</td>
<td>Nonmalignant Lymphoid Disorders</td>
<td>Ch. 20</td>
<td></td>
</tr>
<tr>
<td>October 19</td>
<td>Leukemias</td>
<td>Ch. 24</td>
<td>Lab 7: Lymph Disorders/Abnormal Differentials</td>
</tr>
<tr>
<td>October 21</td>
<td>Leukemias</td>
<td>Ch. 25</td>
<td></td>
</tr>
<tr>
<td>October 26</td>
<td>Leukemias</td>
<td>Ch. 25</td>
<td>Lab 8: Leukemias/Corrected WBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Abnormal Differentials</td>
</tr>
<tr>
<td>October 28</td>
<td>Lymphoid Malignancies</td>
<td>Ch. 26</td>
<td></td>
</tr>
<tr>
<td>November 2</td>
<td>Myeloproliferative Disorders</td>
<td>Ch. 22</td>
<td>Lab 9: Abnormal Diffs</td>
</tr>
<tr>
<td>November 4</td>
<td>Myelodysplastic Syndromes</td>
<td>Ch. 23</td>
<td></td>
</tr>
<tr>
<td>November 9</td>
<td>EXAM 2</td>
<td></td>
<td>Lab 10: Differential Exam</td>
</tr>
<tr>
<td>November 11</td>
<td>Primary Hemostasis</td>
<td>Ch. 29</td>
<td></td>
</tr>
<tr>
<td>November 16</td>
<td>Secondary Hemostasis and</td>
<td>Ch. 30</td>
<td>Lab 11: Hemacytometer</td>
</tr>
<tr>
<td></td>
<td>Fibrinolysis</td>
<td></td>
<td>Platelet Counts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D-dimers/FDPs</td>
</tr>
<tr>
<td>November 18</td>
<td>Disorders of Primary Hemostasis</td>
<td>Ch. 31</td>
<td></td>
</tr>
<tr>
<td>November 23</td>
<td>Disorders of Secondary</td>
<td>Ch. 32</td>
<td>Lab 12: Automation and QC</td>
</tr>
<tr>
<td></td>
<td>Hemostasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 25</td>
<td>Thrombophilia</td>
<td>Ch. 33</td>
<td></td>
</tr>
<tr>
<td>November 30</td>
<td>EXAM 3</td>
<td></td>
<td>Lab 13: Body Fluids in Hematology</td>
</tr>
<tr>
<td>December 4</td>
<td>Final Exam - Comprehensive</td>
<td></td>
<td>8:00-10:30 AM</td>
</tr>
</tbody>
</table>

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. COURSE POLICIES

**Attendance/Tardiness**
Daily attendance is expected and required.

**Late Work and Make-up Exams**
Make up exams must be scheduled with the instructor.

**Extra Credit**
None

**Cell Phone Use**
None
Laptop Use
Not required.

Food in Class
When necessary

Missed Exam
See make up exams.

Participation
When necessary

Others
None

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](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 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 be 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/

**L. OTHER INFORMATION**

Professionalism is necessary for Clinical Laboratory Science students and is required when students enter their clinical training in preparation for their profession.

**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.