

Biology 2102 Lab, (AP2 Lab) Course Syllabus

J. James 2015

Course Description

Weekly laboratory activities are designed to complement and/or coincide with Biology 2302 lecture topics. Therefore it is **highly recommended** that you take lecture and lab concurrently in the same semester. Some topics covered in lab are 'stand-alone' with no corresponding counterpart in lecture. Laboratory activities will include the use of various organ system models, group activities, and dissections of preserved or fresh specimens. No live animal experiments are used. The students will be guided through a study of the anatomy of the cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

Prerequisites

None

Instructor

Jerry James

Office: HS225e 979-230-3353 jerry.james@brazosport.edu

Mobile: 979-418-0643 but no later than 9 p.m. please.

Learning Outcomes (Course Goals)

1. Students will demonstrate knowledge of heart anatomy and the flow of blood through the heart.
2. Students will demonstrate knowledge of arteries and veins and the principles of blood pressure and blood flow.
3. Students will demonstrate knowledge of intrinsic conduction system of the heart.
4. Students will demonstrate knowledge of blood glucose regulation and measurement.
5. Students will demonstrate knowledge of the ABO and Rh blood groups.
6. Students will demonstrate knowledge of the anatomy and functions of the respiratory system.
7. Students will demonstrate knowledge of the anatomy and functions of the gastro-intestinal tract.
8. Students will demonstrate knowledge of the anatomy and functions of the urinary system including detailed functions of each segment of the nephron.
9. Students will demonstrate knowledge of the principles of pH, acids and bases, as well as the three methods (chemical buffers, respiratory adjustments, & renal adjustments) by which the body tries to maintain proper pH of ECF.
10. Students will demonstrate knowledge of the anatomy and functions of male and female reproductive organs.

	<p style="text-align: center;">LAB TOPICS</p> <p style="text-align: center;">Also always check for helpful videos, etc. on the Web of Life and your instructor's web page.</p>
Lab 1	<p>Blood Composition</p> <p style="padding-left: 40px;">Components: Plasma vs. Formed Elements</p> <p style="padding-left: 40px;">Hematocrit</p> <p>Formed Elements</p> <p style="padding-left: 40px;">Identification & Functions</p> <p>Anatomy of the Human Heart</p> <p style="padding-left: 40px;">Chambers, Septa, Valves, Vessels, Heart wall layers</p> <p style="padding-left: 40px;">Sequence of blood flow through the heart</p>
Lab 2	<p>Quiz # 1 _____</p> <p>Intrinsic Cardiac Conduction System</p> <p style="padding-left: 40px;">EKG Components</p> <p style="padding-left: 40px;">Ectopic Foci</p> <p>Video: Pacemaker Implantation, Fibrillation, and Defibrillation</p> <p>Cardiac Output</p> <p style="padding-left: 40px;">CO measurement</p>
Lab 3	<p>Quiz #2_____</p> <p>Heart Sounds & Heart Valve Irregularities</p> <p>Blood Supply to the Myocardium: Identify major coronary arteries</p> <p>Atherosclerosis vs. Arteriosclerosis</p> <p>Angioplasty</p> <p>Dissection of the Heart</p>
Lab 4	<p>Quiz #3 _____</p> <p>Anatomy of Arteries, Veins, and Capillaries</p> <p>Identification of major blood vessels</p> <p>The Lymphatic System</p> <p>Hemodynamics: Blood Flow & Blood Pressure</p> <p style="padding-left: 40px;">BP Measurement</p>
Lab 5	<p>Quiz #4 _____</p> <p>The Hepatic Portal System - Location and function</p> <p>Liver Functions OYO</p> <p>Blood Glucose: Discussion and Measurement</p> <p>Blood Groups/Types: ABO & Rh</p> <p>Insulin Shock and Diabetic Ketoacidosis</p>
Lab 6	<p>Comprehensive mid-term over labs 1-5</p> <p>Lymphatic System</p>
Lab 7	<p>Quiz #5 _____</p> <p>Respiratory System and Dissection of lungs</p>

Lab 8	Quiz #6 _____ Urinary System Filtrate and Urine Production in the Nephron (segment by segment) Discussion of Kidney Dialysis
Lab 9	Quiz #7 _____ Intro to Urinalyses and Fundamentals of pH Intro to Acid/Base Balance
Lab 10	Quiz #8 _____ Regulation of Acid/Base Balance: 1. Chemical Buffers 2. Respiratory Adjustments 3. Renal Mechanisms
Lab 11	Quiz #9 _____ Reproductive Systems, male and female - Anatomy and functions of each.
Lab 12	Quiz #10 _____ Pregnancy and Childbirth Hormonal changes and controls associated with each.
Lab 13	Comprehensive Final over labs 7-12

Learning Resources

Textbook: Marieb & Hoehn. Human Anatomy and Physiology, 10th edition, Pearson Publishing, 2016, ISBN- 978-0-321-92704-0. The 9th or even 8th edition of the same text is equally good. Just expect page #s and Figure #s to be slightly different. 99% of the information is the same.

Supplemental Instructors (SI) - SIs are ‘A’ students from previous semesters who learning sessions showing you how to become an ‘A’ student yourself. Students who attend SI sessions typically score one letter grade higher than those who don’t.

Web of Life – our departmental web site with all kinds of useful links to handouts, YouTube videos, etc. for labs and for lectures.

<http://www.brazosport.edu/sites/CurrentStudents/Programs/AllCourses/weboflife/default.aspx>

** From the Web of Life you will need to print and bring to lab with you each week Lab Activity Sheets that will serve as a study guide along with instructor notes and other activities.

CD Rom – Interactive Physiology. This CD comes with your text and is full of great tutorial animation clips, explanations, and practice quizzes. Computers are available for your use in both A&P labs as well as the Learning Services Center.

Web of Life – our departmental web site with all kinds of useful links to handouts, YouTube videos, etc. for labs and for lectures.

<http://www.brazosport.edu/sites/CurrentStudents/Programs/AllCourses/weboflife/default.aspx>

** From the Web of Life you will need to print and bring to lab with you each week Lab Activity Sheets that will serve as a study guide along with instructor notes and other activities.

CD Rom – Interactive Physiology. This CD comes with your text (if brand new) and is full of great tutorial animation clips, explanations, and practice quizzes. It is not required but you may find it helpful. Computers are available for your use in both A&P labs as well as the Learning Services Center.

Students with Disabilities

Brazosport College is committed to providing equal education opportunities to every student. BC offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact Phil Robertson, Special Populations Counselor, 979-230-3236 for further information.

Student Responsibilities

Students are expected to fully participate in labs. You are responsible for your own success or failure. Good time management, punctuality, initiative, and teamwork are keys to success. Participation may or may not be factored in to grading by your instructor.

Academic Honesty

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at <http://www.brazosport.edu>.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and may, at a minimum, result in anything from zero for the assignment to an F in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.

Attendance and Withdrawal Policies

Regular attendance is critical for the comprehension of material and successful completion of the course. Every student is responsible for everything covered in lab whether you were present that day or not. . Students may be withdrawn from the course by their instructor for excessive absences. Contact your instructor for his/her policy concerning excessive absences.

If a student decides to no longer participate in the course, for any reason, **it is the student's responsibility to officially withdraw from the course.** To officially withdraw from the course, students must complete and sign a withdrawal form, available in the Registrar's Office. **Failure to do so will result in the student remaining enrolled and receiving a grade – most likely an 'F'.**

Testing & Grading

Lab quizzes are given weekly at the beginning of lab over the previous lab's information. Come early.

There are 9 weekly lab quizzes. (100 points each)

Two comprehensive lab quizzes will be included.

Comprehensive Mid-Term for Labs 1-6 (150 points)

Comprehensive Lab Final for Labs 7-11 (150 points)

Additional Assignments or Opportunities may be included at your instructor's discretion.

A point basis will be used to calculate your score grade. Based on the 9 weekly quizzes and 2 comprehensives it is possible to earn a total of 1200 points. However 1100 is considered a "perfect" score. In other words, you could miss one weekly quiz and still earn 1100 points and have a perfect 100 average. It's very similar to "dropping one weekly quiz."

At the end of the semester your **total points earned** is divided by 1100.

For course grades the scale is:

90% and above = A

80% and above = B

70% and above = C

60% and above = D

Below 60% = F

Make-up policy

There are no makeup lab quizzes although your instructor may allow you to take your quiz with an alternate lab. Inquire with your instructor.

Other Student Services Information

Writing Center: Located within the Student Success Center (second floor of the main building above the counseling and registration office) is the Brazosport College Writing Center. The Writing Center provides drop-in tutoring Monday – Thursday 9 am – 8 pm and Friday 9 am – noon. Online tutoring and other times are available by appointment. The Writing Center can assist with brainstorming, organizing and developing paragraphs, understanding professors' directions, learning about MLA or other styles, learning how to avoid plagiarism, improving mechanics, using Microsoft Word, becoming an even stronger writer, and much, much more. Check out our growing collection on handouts, videos, and other online resources, too.

Math Center: Located within the Student Success Center (second floor of the main building above the counseling and registration office) is the Brazosport College Math Center. The Math Center provides drop-in tutoring Monday – Thursday 9 am – 8 pm and Friday 9 am – noon. The Math Center can assist with transitional math, college algebra, trigonometry, accounting, statistics, calculus, and every other math course offered at the college. Check out our growing collection on handouts, videos, and other online resources, too.

Library:

Information about the **Library** is available at <http://www.brazosport.edu/~lib/Information.htm> or by calling 979-230-3310.