

# Syllabus for Biology 2402, AP2, Spring 2012

## Jerry James

### Course Description

Human Anatomy and Physiology II is a study of various organ systems of the human body including: cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems. Emphasis is on understanding the physiology of negative and positive feedback mechanisms associated with these organ systems.

Weekly laboratory activities are designed to complement and/or coincide with lecture topics. Laboratory activities will include use of various organ system models, group activities, and dissections of preserved or fresh specimens of hearts, lungs, etc. No live animal experiments are used. The students will be guided through a study of the structural anatomy of the organs as well as the physiological processes involved in each organ system.

### Prerequisites

Students must have successfully completed BIOL 2401(3-3) [2607065124] at an accredited college. Certain EMS or medical work experiences may be substituted to fulfill this requirement. See your instructor today if you have not successfully completed BIOL 2401 (A&P I).

### Instructor

Jerry James, Office: HS225e 979- 230-3353 jerry.james@brazosport.edu  
Hm: 979-265-1640 but no later than 9 p.m.

### Learning Outcomes (Course Goals)

1. Students will demonstrate knowledge of the properties of cardiac muscle fibers as well as how the intrinsic conduction system coordinates contractions of the myocardium.
2. Students will demonstrate knowledge of the path of blood flow through the chambers, valves, and vessels of the heart.
3. Students will demonstrate knowledge of how the autonomic nervous system influences heart rate and contractility to adjust cardiac output to meet the needs of the body.
4. Students will demonstrate knowledge of the short-term and long-term mechanisms for adjusting and maintaining blood pressure via changes in peripheral resistance, blood volume, and blood viscosity.
5. Students will demonstrate knowledge of the principles of tissue perfusion and capillary exchange.
6. Students will demonstrate knowledge of the roles of various cells and chemical substances involved in our nonspecific and specific defense responses.
7. Students will demonstrate knowledge of the anatomy and functions of the components of the respiratory system.
8. Students will demonstrate knowledge of the principles involved in the mechanics of pulmonary ventilation.
9. Students will demonstrate knowledge of the principles associated with external and internal respiration as well as the transport of oxygen and carbon dioxide in the blood.
10. Students will demonstrate knowledge of the various factors influencing the respiratory control centers resulting in compensatory and noncompensatory hyperventilation and hypoventilation.
11. Students will demonstrate knowledge of the anatomy and functions of the gastro-intestinal tract.
12. Students will demonstrate knowledge of how the hypothalamus serves as a thermostat controlling heat gain and heat loss to regulate body temperature.
13. Students will demonstrate knowledge of the anatomy and functions of the urinary system including detailed functions of each segment of the nephron.

14. Students will demonstrate knowledge of the principles involved in net filtration pressure, glomerular filtration rate, as well as the intrinsic and extrinsic regulations thereof.
15. Students will demonstrate knowledge of how the kidneys regulate the volume and concentration of extracellular fluids via the formation of concentrated or dilute urine.
16. 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.
17. Students will demonstrate knowledge of the causes and consequences of respiratory acidosis, respiratory alkalosis, metabolic acidosis, and metabolic alkalosis.
18. Students will demonstrate knowledge of how ABGs (arterial blood gas values) are interpreted to determine the cause of acidosis and alkalosis.
19. Students will demonstrate knowledge of how fluids and electrolytes are distributed among the "fluid compartments" as well as the causes of fluid and/or electrolyte shifts between compartments.
20. Students will demonstrate knowledge of the negative feedback mechanisms regulating potassium, calcium, and sodium concentrations in the ECF as well as the effects of electrolyte imbalances upon neuromuscular irritability.
21. Students will demonstrate knowledge of the anatomy and functions of male/female reproductive organs.
22. Students will demonstrate knowledge of the hormonal controls of the ovarian and menstrual cycles.
23. Students will demonstrate knowledge of the hormonal controls associated with pregnancy and childbirth.

### Textbook and Other Resources

**Required Text:** Human Anatomy & Physiology, 7<sup>th</sup>, 8<sup>th</sup>, or 9<sup>th</sup> Ed., by Elaine Marieb. This may be in hard bound, 3 hole punched, or e-book version. The international version is also acceptable. This is the #1 most popular A&P text in the USA. You will need it for both lecture and lab for both AP1 & AP2. Detailed **Study Guides** will be provided by your instructor to help you identify the most important topics in the text.

**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 the Learning Services Center and **laptops** may be checked out from the IT department (230-3266) for 24 hrs at a time on a 1<sup>st</sup> come-1<sup>st</sup> served basis.

**Mastering A and P** This is an online resource provided by the publisher to help you master the concepts of A&P and excel on your exams. There are tutorials, exercises, and quizzes to help prepare you for exams. If you have the 8<sup>th</sup> edition or newer text it most likely came with an access code. If your book did not come with an access code it may be purchased online for \$50 at [www.MasteringA&P.com](http://www.MasteringA&P.com). Once activated it is good for 24 months. Participation in Mastering A&P is optional.

**Lectures Available Online in Streaming Video:** Recordings of lectures are available online as streaming video files. You will need a high speed internet connection for satisfactory results. You can see and hear the lecture presentation just as if you were in the classroom. You just won't see the speaker nor any demos. You may pause, replay, fast forward, etc. Links to my lecture videos can be found on my website

<http://www.brazosport.edu/sites/CurrentStudents/Faculty/JerryJames/Pages/default.aspx>

**Favorite Websites** for A&P, health, and medicine questions:

<http://mayoclinic.com/>

<http://www.medicinenet.com/script/main/hp.asp>

<http://www.rxlist.com/>

<http://www.emedicinehealth.com/script/main/hp.asp>

## Lab Requirements

This course has a weekly 3 hour laboratory. The required textbook for the course will be used in the laboratory. You will receive a handout at the beginning of each laboratory to be used as a study guide along with instructor notes and other activities to provide an opportunity to learn the anatomy and basic function related to various organ systems.

## Students with Disabilities

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

## Student Responsibilities

Students are expected to fully participate in lectures and labs. You are responsible for your own success or failure. Good time management, punctuality, initiative, and teamwork are keys to success.

### **The most successful students are usually the ones who:**

- have a Let's Go For It!!" attitude and participate eagerly in both lecture and lab as well as in study groups outside of class
- participate in SI (supplemental instruction) activities
- arrive early and prepared for lectures and labs
- read related text sections and view related video clips and search for answers on websites
- ask the SI or instructor for assistance before falling behind

## Academic Honesty

Collaboration (group study) with other students while learning, preparing, reviewing, etc. is strongly encouraged. It's a great way to learn. Collaboration with another student or obtaining information by any means other than your own memory recall while taking a quiz or exam or completing an assignment intended to be completed by you alone is dishonest and considered cheating. All electronic devices (cell phones, smart phones, etc.) must be OFF and completely out of sight during the taking of quizzes, exams, or assignments to be graded. Any electronic device visible near you will be considered cheating.

Academic dishonesty includes, but is not limited to: cheating, plagiarism, and collusion and will result in devastating consequences. College policy calls for the student to receive an F in the course and possibly be expelled from the college. Additional information on academic honesty/dishonesty may be found at <http://www.brazosport.edu> and in your Student Guide.

## Attendance and Withdrawal Policies

Regular attendance in both lecture and lab is critical for the comprehension of material and successful completion of the course. Every student is responsible for everything covered in both lecture and lab whether you were present that day or not. Attendance records are kept to fulfill college requirements but are not directly factored into grading.

1. If a student has 4 or more absences (cumulative from both lecture and lab) the instructor may at his or her discretion withdraw the student from the course.
2. If the student decides to withdraw for whatever 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'.**

## Course Requirements and Grading Policy

Standard procedure is for students to demonstrate evidence of what they have learned by a combination of lecture exams and lab quizzes. There are typically 5 lecture exams and 12 lab quizzes and a comprehensive final exam. In general, lecture exams test your knowledge of the topics covered in lecture while lab quizzes test your knowledge of topics covered in lab. Grades for the course are based 60% on lecture exams and 40% on lab quizzes. You must take lecture exams and lab quizzes during your scheduled lecture and lab times.

**\*\*This semester you will also have the option of participating in a study testing the benefits of Mastering A&P assignments. If you participate all of your Mastering A&P assignments will collectively be counted as the equivalent of one lecture exam and factored into your grade. You must declare your intentions before the first exam and you must continue to participate the entire semester.**

## Testing & Grading

Lab quizzes are given weekly at the beginning of lab over the previous lab's information. Come early. Questions are not repeated for late arrivals. Lab quizzes are usually given in oral format with the student writing his or her responses. Other formats may be used when deemed appropriate by the instructor.

Spelling counts. Only your 10 best quiz scores are used to calculate your lab average.

Lecture exams typically consist of 1-3 essays and 75-100 MC questions. They may also include matching, fill-in-the-blank, labeling, and even oral essays when the instructor deems these appropriate.

Mastering A&P Activities/Quizzes. You must have an access code to these online tutorials, exercises, and practice quizzes. You must complete these **before** the corresponding lecture exam.

If you take all lecture exams at their scheduled times and you are content with your grades, you are not required to take the comprehensive final exam. If not content with your grades, you have the option of taking the comprehensive final exam to replace a lower exam score.

If you miss one of the five lecture exams you must take the comprehensive final exam during finals week to replace the missing score.

If you miss more than one lecture exam only one zero can be replaced by the comprehensive final. The other(s) will remain as zeros.

For course grades the grading 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 or lecture exams. See above.

## 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.

**Useful Contacts:**

<b>Life Sciences Department</b>	979-230-3225.
<b>Counseling and Advising</b>	979-230-3040
<b>Financial Aid</b>	979-230-3294
<b>Student Activities</b>	979-230-3355.

**Internet, Email, Computers:**

For assistance related to the wireless network on campus, computers on campus, email, or other technical assistance call the Help Desk at the Information Technology Department at 979-230-3266.