

**BRAZOSPORT COLLEGE
LAKE JACKSON, TX**

**SYLLABUS for BIOLOGY 2301 LECTURE
HUMAN ANATOMY AND PHYSIOLOGY I
by Jerry James, Fall 2015**

Course Description:

This 3-credit course is the first half of a two-semester series in human anatomy and physiology - a study of the cells, organs, and organ systems of the human body. Emphasis is on understanding the physiological mechanisms maintaining homeostasis. The dynamics of cell membranes as well as the components and functions of the integumentary, skeletal, muscular, nervous, and endocrine systems will be studied. [2607075103]

Textbook:

Marieb & Hoehn. Human Anatomy and Physiology, 10th edition, Pearson Publishing, 2016, ISBN- 978-0-321-92704-0. The 9th or 8th edition of the same text is equally good. Page numbers and figure numbers will vary slightly but info content is 99% the same.

Required course materials are available at the Brazosport College bookstore, on campus or online at <http://www.brazosport.edu/bookstore>. A student of this institution is not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer.

*Students may choose to use an alternate text or even a variety of online resources. However this course has been designed on the assumption the student has access to the aforementioned text.

I. GENERAL COURSE DESCRIPTION

This course uses a body systems approach to convey the interrelationships between function and structure at both the microscopic and gross levels of organization of the human body. It is intended to prepare pre-health care professionals for entry into a health-related field. The course will guide students in their study of anatomical terminology and physiological principles of the human body. Students are expected to have college level reading skills and use critical thinking skills to draw conclusions and predict physiological responses from presented information.

II. LEARNING OUTCOMES

Outcome	Assessment Tool
Students will demonstrate knowledge of negative feedback mechanisms and how they maintain homeostasis.	Exam 1
Students will demonstrate knowledge of chemical synapses and how they relate to resting membrane potentials, action potentials, and local potentials.	Exam 2
Students will demonstrate knowledge of the sequence of events of skeletal muscle contraction involving ATP as well the aerobic and anaerobic production of ATP.	Exam 3
Students will demonstrate knowledge of the major neurotransmitters, their various roles, and how their actions can be altered by drugs and medications.	Exam 4
Students will demonstrate knowledge of various endocrine glands and their hormones and how they are involved in the control of variables such as blood pressure, blood sugar, electrolytes, osmolality of the blood, etc.	Exam 5

III. LECTURE TOPICS (Approximate)

1. Homeostasis, Negative and Positive Feedback Mechanisms, Plasma Membranes
2. Membrane Proteins: Channel, Receptor, Carrier, Marker
3. Membrane Transport Processes, Passive and Active
4. Local Inflammatory Response, Body Membranes, Integumentary System-Functions, Cell Types, Skin Coloration, Skin Cancer
5. Bone Composition, Remodeling
6. Calcium Homeostasis, Osteoporosis
7. Membrane Potentials: Resting, Action, Graded
8. Neuromuscular Junctions (Chemical Synapses :) EPSP, IPSP, Summation
9. Nervous System Organization, Cell Types, Nerve Regeneration; Dermatome Maps
10. Neurotransmitters
11. Memory, Plexuses, TIA vs. CVA, Autonomic Nervous System
12. Neurotransmitters of the ANS, Depression, Addiction
13. Skeletal Muscle, Motor Units, Muscle contraction
14. Sources of Energy for Contraction, Aerobic and Anaerobic production of ATP
15. Endocrine System, Hormones, Metabolism of Hormones
16. Variables Controlled by Hormones: Calcium, Glucose, Blood Pressure, Metabolism, Potassium, Osmolality, Metabolism, Stress responses, Sleep/Wake Cycles

IV. EXAMS and GRADING

- There will be five regular exams plus a comprehensive final exam.
- If you foresee a conflict you may make arrangements to take the exam earlier than scheduled.
There are no makeups “after the fact” for exams missed. *However your score on the comprehensive final may be used to replace one lower exam score. In this case the final exam score is effectively counted twice.
- Regular exams typically consist of terminology definitions, MC, and essay questions. Exam questions will focus on topics listed in the Study Guides provided by the instructor. The majority of these topics are covered efficiently by your instructor in class.
- The final exam is MC only.
- Regular exams and the final exam are weighted equally. Each has the same value.
- Your instructor may require or offer additional assignments at his discretion on a per semester basis.
- A straight grading scale will be used so that:
 - 90% and above - A
 - 80% and above – B
 - 70% and above – C
 - 60% and above – D
 - Below 60% - F

V. COURSE POLICIES

A. ADDITIONAL HELP

Supplemental Instruction

Supplemental Instructors (SIs) are former students who have done well in the course. They host weekly learning/review/study sessions to help you master the terminology and concepts and do well in the course. Students who participate regularly in SI sessions typically score 10% higher on lab quizzes and 10% higher on lecture exams. All SI services are at no cost to you.

B. 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.

C. WITHDRAWAL POLICY

The Brazosport College Biology Department believes attendance in both lecture and lab is critical for the comprehension of material. Therefore, if student absences exceed requirements set by the instructor, he may be withdrawn from the course.

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'.

D. 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.

E. CELL PHONES

As a courtesy to the class, all pagers and cellular telephones should be turned **OFF** and out of sight during lecture.