BIOL 2020, Anatomy & Physiology II

Catalog Course Description:
A continuation of BIOL 2010 with emphasis on endocrine, cardiovascular (including hemodynamics), lymphatic, respiratory, digestive, urinary (including water and electrolyte balance), and reproductive systems, growth and development, and genetics. Three hours lecture and three hours of laboratory.

Prerequisites:
Biology 2010 Anatomy & Physiology I

Co-requisites:
None

Instructor and contact information:
Jennifer Reaves; phone: 731-925-5722; v/m: 731-424-3520 ext. 50773; jreaves3@jscc.edu

Office location and hours:
SAV 131, posted by office door and on eLearn

Textbook/Materials:
Pearson's Mastering A&P digital access which includes Amerman etext (optional for this section)

Required Student Learning Outcomes:

Institutional Learning Objectives (ISLO)
1. Communicate orally and in written form with a vocabulary conducive to the natural and physical sciences as related to the specific course objectives.
2. Perform appropriate mathematical operations as they relate to the natural and physical sciences.
3. Demonstrate an understanding of the principles and concept of the sciences specifically related to the program.
4. Demonstrate knowledge of the scientific method, its strengths, limits, and interrelationship with society.
5. Gather, analyze, organize and interpret data in mathematical, written and/or verbal form.

Course Student Learning Outcomes (CSLO)
Upon successful completion of the course, students should be able to demonstrate knowledge of, but not limited to, the following:
1. Understand hormones, the endocrine system, with emphasis on feedback mechanisms.
2. Comprehend the characteristics, components, and functions of blood.
3. Understand hematopoiesis and hemostasis.
4. Understand the structure and functions of the components of the cardiovascular system.
5. Define and distinguish between the pulmonary and systemic circuits.
6. Trace the flow of blood through major vessels to and from various organs of the body.
7. Comprehend the syncytial behavior of the myocardium.
8. Comprehend the regulation and monitoring of blood pressure.
9. Understand the structures and functions of the lymphatic system.
10. Understand inflammatory response mechanisms.
11. Comprehend specific immunity; contrast cellular and humoral immunity, active and passive immunity, and natural and artificial immunity.
12. Distinguish between chemical and mechanical digestive processes; describe the various chemical processes and substrate molecules and their degradation.
13. Understand the structural and functional features of the different regions of the digestive tract.
14. Describe the types of movement in the gut.
15. Define nutrient and list the six major categories of nutrients; state the function of each class of macronutrients and the major dietary sources of each.
16. Name the major lipoproteins, vitamins, and minerals required by the body and the general functions of each.
17. Describe and explain the major steps of glucose, lipid, and protein catabolism; contrast anaerobic versus aerobic metabolic processes.
18. Explain the major processes involved in ATP formation in cells.
19. Understand the structure and functions of the respiratory system.
20. Trace the flow of air from the nose to the pulmonary alveoli.
21. Explain the roles of muscle contraction and control by the nervous system in breathing.
22. Understand the structure and function of the urinary system.
23. Describe the gross and fine structure of the kidney and explain the various processes underlying the formation of urine via nephrons.
24. Describe the major fluid compartments in the body and discuss water movement between them; list the body’s sources of water and routes of water loss.
25. Understand the body’s homeostatic mechanisms relative to maintenance of water balance.
26. Describe the physiological roles of electrolytes found in the body, and the mechanisms involved in their regulation.
27. Define buffer substances and write out chemical equations for the major buffer systems of the body.
28. Describe the various metabolic and physiological factors that affect the body’s pH balance; discuss the homeostatic regulation of pH and its significance for normal body function.
29. Describe the major components and functions of the reproductive systems of males and females.
30. Describe the role of sex hormones in the development, maintenance, and regulation of the reproductive systems and functions of males and females.
31. Explain meiosis and its role in gamete production and enhancement of genetic variation through recombination of the genetic material (DNA).
32. Explain the major stages in human development.
33. Describe the formation and functions of the placenta.
34. Explain the various kinds of aneuploidies and other genetic anomalies that can affect an individual’s phenotype.

**Learning Indicators:**
The student’s ability to demonstrate the following will be indicators of their success in achieving the program and course level student learning outcomes.

**Required Assessment:**

**Assessment Names and Descriptions:**

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Text Chapter and Topics</th>
<th>CSLO</th>
</tr>
</thead>
</table>
| Exam 1      | Chapter 16. Endocrine System  
| Exam 2      | Chapter 17. Cardiovascular System  
Chapter 18. Vessels  
Chapter 20. Lymphatic System & Immunity                       | CSLO 4-11 |
| Exam 3      | Chapter 22. Digestive System  
Chapter 23. Metabolism                                        | CSLO 12-18|
| Exam 4a     | Chapter 21. Respiratory System                               | CSLO 19-21|
| Exam 4b     | Chapter 24. Urinary System  
Chapter 25. Fluid Balance                                     | CSLO 22-28|
| Exam 5      | Chapter 26. Male and Female Reproductive Systems  
Chapter 27. Pregnancy, Growth and Development                 | CSLO 29-34|

**Grade Distribution**
Exams 50%, Written Assignments 20%, Lab 30%

**JSCC POLICY:** YOU MUST PASS LAB TO PASS THE COURSE.

**Grading Scale or Policy**
A=90 and above, B=80-89, C=70-79, D=60-69, F=<60

**Instructor Policies**

**Attendance:**
You are expected to attend class regularly. Attendance will be taken and reported for financial aid purposes. Please sign up for JSCC text alerts. They will alert you about inclement weather and campus closings.

**Class Decorum:**
You are expected to be in class on time. Please enter the class quietly and respectfully if you are late. Take notes. Do not cheat. Cheating includes using any technology, notes, and/or assistance that has not been previously approved by the instructor during a quiz, exam, or graded assignment. Cheating also includes turning in and/or claiming someone else’s work as your own, and/or plagiarism. Cheating will result in a zero for the assignment, quiz, or exam. Continued cheating will result in further action as outlined by the JSCC Student Handbook.
Cell phones or other technology may not be used as a distraction in class. Please be respectful of other students and their right to learn. Students hindering the learning of others will be asked to leave.

Be sure to keep up in class and lab. You can get behind very quickly. Attendance is expected at all class and laboratory meetings…role will be taken. It may be possible to attend other sections of the same class to make up missed classes. If you know that you will miss a class in which an exam is scheduled, discuss the situation with me prior to the exam.

**Term Paper:**

1. 20% of the total grade will be based on written assignments, including a term paper of approximately 2000 words. I am leaving the topic of the paper up to you but it must be relevant to the general subject of human physiology. If you have any questions, please clear the topic with me before you invest much effort in your research.
2. The paper should be 6 pages typed (single-sided, double-spaced), not including a works cited page. Sources must be cited. The best papers will bring information in from sources other than the text and the lectures, though these are to be considered as valuable material resources.
3. A one-page typed summary of your proposed essay topic is due by midsemester (date to be announced). If you fail to hand this in on that date, a penalty will be assessed against your term paper grade.
4. Remember to be careful about plagiarism. A plagiarized paper will automatically receive a '0' for the grade with no opportunity for rewrite. According to JSCC policy, plagiarism includes copying or paraphrasing from another student’s work and/or copying or paraphrasing from anything published without citing the source.

**Inclimate weather:**

College closings are announced on local TV and radio and are also posted on the JSCC web site [www.jscc.edu]. Tests scheduled on days when classes are cancelled will be given the next class.

**Illness:**

If you are sick, please stay at home and attempt to make up the class/assignments at a later date. Lecture recordings may be available for you to view and keep up with the lecture schedule.

**College Policy Statements:**

This class is governed by the policies and procedures stated in the current JSCC Catalog & Student Handbook.

Academic dishonesty includes, but is not limited to the following:

1. Cheating on an examination or quiz, taking information or allowing information to be taken from your test or assignments.
2. Receiving help from others in work to be submitted; if contrary to the rules of the course.
3. Plagiarizing the ideas, writings, or work of another (including but not limited to your textbook and the Internet) without citing the source.
4. Stealing or illegally using examinations or course material from current or past semesters or classes. Giving or selling answers to test questions and informing another student of specific questions that appears or has appeared on course examinations.
5. Misrepresentation is an act of omission with intent to deceive the instructor or University employee. It includes but is not limited to, lying about family circumstances, employment conflicts, or other personal problems in order to gain academic advantage for oneself or others; changing answers on graded materials; having another person complete an assignment or take an examination in one's place.

6. DO NOT GIVE ANYONE YOUR WORK in WRITTEN OR ELECTRONIC FORM – Assistance with writing and biological concepts are available from the instructor and from professional tutors through Academic Services located on the first floor of the Parker Building or online through Academic Services.

7. Assisting anyone to do any of the above.

Academic honesty is required and expected. In the event that you are suspected of classroom cheating, plagiarism, or otherwise misrepresenting your work, you will be subject to University-level disciplinary action, and you may fail the course.

Disabilities:
Students with diagnosed disabilities will be provided reasonable and necessary academic accommodations if they are determined eligible by the college's Disability Resource Center (DRC) staff. The instructor must receive a “Special Accommodations Agreement Form” signed by the DRC staff before granting disability related accommodations in this course. It is the student’s responsibility to initiate contact with the DRC and follow established procedures to be allowed accommodations by the instructor. All information about a student’s actual disability(ies) is kept confidential by the DRC.

The DRC is located in the Counseling and Career Services Office in the Student Union Building. Please contact the Dean of Students, Linda Nickell, at 731-424-3520 x50354 or at lnickell@jscc.edu. Information also is available on the JSCC website at: http://www.jscc.edu/about-jackson-state/student-services/disabled-student-services.html.

Suicide Prevention Statement:
Jackson State Community College is committed to and cares about all students. Support services are available for any person at Jackson State who is experiencing feelings of being overwhelmed, hopelessness, depression, thinking about dying by suicide, or is otherwise in need of assistance. For immediate help, contact the National Suicide Lifeline Number 1-800-273-TALK (8255) or Text “TN” to 741741 or the Trevor Lifeline at 1-866-488-7386. Veterans may also wish to contact the Veterans Crisis Line at 1-800-273-8255 (press 1) or Text 838255.
NOTE: The instructor reserves the right to change in writing, any part of the syllabus as necessary.