Division of Natural and Computational Sciences
Department of Biology
BIOL 2472 HUMAN ANATOMY AND PHYSIOLOGY II
College Mission

College is a Historically Black College founded in 1894, by the Colored Methodist Episcopal Church, now the Christian Methodist Episcopal Church (CME). Our mission continues to embody the principles of the Christian Methodist Episcopal Church. The College shall prepare students with competencies in critical and creative thinking related to the knowledge, skills, and abilities as defined in areas of study. Additionally, the College shall provide an environment to inspire intellectual, spiritual, ethical, moral, and social development, which empowers graduates to engage in life-long learning, leadership, and service.

Textbook:
VanPutte,C., Regan, J., Russo, A., and Seeley, R. (2020). 11th Edition ***Seeley's Essentials of Anatomy and Physiology***, New York, New York: McGraw-Hill Publishers. 9781264398676

Required Viewing/Resources on the Cardiovascular System:

- https://www.youtube.com/watch?v=28CYhgjrBLA Overview of the Cardiovascular System. .
- https://www.youtube.com/watch?v=aDXABSb0_p8 Blood Flow through the Heart.
- https://www.youtube.com/watch?v=RYZ4daFwMa8 Cardiac Conduction System.

Other Requirements:
Access to Computer or Laptop. The School can loan Laptops through the Business Office.

Course Description:
This course is designed to serve as Part II for an introductory course to Human Anatomy & Physiology for Biology majors. It emphasizes the importance of the Cardiovascular System, the structure and function of the Blood, Heart, and Blood Vessels, and also the structure and function of various organ systems including the Digestive System and the Respiratory System and how the organ systems interact. Understanding of the diseases of these Organ Systems is also an important part of the class.

Course Prerequisites: General Biology I (BIOL 1471) and General Biology II (BIOL 1472) and Human Anatomy and Physiology (Part I-BIOL 2471).

TEXAS COLLEGE OUTCOMES

1. Critical Thinking Skills
2. Communication Skills
3. Empirical and Quantitative Skills
4. Teamwork

5. Social Responsibility
6. Personal Responsibility

Furthermore, this course ensures the following institutional objectives:
1. Enhance communicative skills (oral and written)
2. Enhance critical thinking and technology skills.
3. Enhance leadership abilities and spiritual awareness.
4. Create opportunities for professional and pos-graduate pathways.

All learning objectives reflect the Texas College Core Values.

Academic Excellence: Developing a culture of curiosity and creativity that will challenge the frontiers of teaching/learning; stimulate research; raise the level of analytical reasoning and inquiry; and enable students to acquire leadership, human relations, communication, and technology skills.

Integrity: Instilling the pursuit of character, honesty, and sincerity of purpose as the moral rubrics upon which the behaviors of our graduates and College family are anchored.

Perseverance: Implanting diligence, enterprise, and pride in the application of skills, knowledge and abilities developed during the course of study at Texas College.

Social Responsibility: Promoting in the College community a conscious awareness that we are all stewards of the resources entrusted to our care.

Tolerance: Emphasizing openness to divergent points of view, applying an eclectic approach to rational and analytical thinking.

Community Service: Encouraging self-extension in service to others as the heart and soul of our educational enterprise.

STUDENT LEARNING OBJECTIVES & OUTCOMES

When you have completed your study in this course you should be proficient in meeting the following: objectives as described in the chart below. Note: **The Class begins on time at 9:00 AM.** Tests will be announced in class and taken virtually.

TENTATIVE WEEKLY COURSE SCHEDULE

Week/Chapter 1/	Unit 1: Syllabus, Introduction, Course Requirements including School Policies.	*Emphasis on Course Requirements as needed*	Total hours –4	SLO 1; TC 1 & 2
2/11	PreTest-Online Syllabus Quiz-Online Unit 1: The Cardiovascular System-Blood	Lecture Blood; Video; Homework assignment; Lab	Total hours--4	SLO 1; TC 1 & 2
3/11	Unit 1: The Cardiovascular System-Blood	Lecture Blood; Video; Homework assignment; Lab	Total hours - 4	SLO 1; TC 1 & 2
4/11	Unit 1: The Cardiovascular System-Blood	Lecture Blood; Video; Lab	Total hours - 4	SLO 2; TC 1 & 2
4/12	Unit 1: The Cardiovascular System-Heart	Lecture Heart; Video; Homework assignment; Lab	Total hours - 4	SLO 2; TC 1 & 2
5/12	Unit 1: The Cardiovascular System-Heart	Lecture Heart; Video; Homework assignment; Lab	Total hours - 4	SLO 2; TC 1 & 2
6/13	Unit 1: The Cardiovascular System-Blood Vessels and Circulation	Lecture Blood Vessels; Video; Homework assignment; Lab	Total hours - 4	SLO 3; TC 1, & 2
7/13	Unit 1: The Cardiovascular System-Blood Vessels and Circulation	Lecture Blood Vessels; Video; Lab	Total hours - 4	SLO 3; TC 1, & 2
8/15	Unit 2: The Respiratory System	Lecture Respiratory System; Video; Homework assignment; Lab	Total hours - 4	SLO 4; TC 1, & 2
9/15	Unit 2: The Respiratory System	Review: Cardiovascular System	Total hours - 4	SLO 4; TC 1, & 2
10/15	Unit 2: The Respiratory System	Lecture Respiratory System; Video; Lab	Total hours - 4	SLO 5; TC 1, & 2
11/16	Unit 3: The Digestive System	Lecture Digestive System Video; Homework assignment;	Total hours - 4	SLO 5; TC 1, & 2

		Lab		
12/16	Unit 3: The Digestive System	Lecture Digestive System; Video; Homework assignment; Lab	Total hours - 4	SLO 6; TC 1 & 2
13/16	Unit 3: The Digestive System	Lecture Digestive System; Video; Homework assignment; Lab	Total hours - 4	SLO 6; TC 1 & 2
Week 14	Review			TC 1, 2, 3, 4
IMPORTANT DATES FOR THE SEMESTER Add or Drop a Course January 11 and 12 (without a fee charged) Midterm Exams: March 4-8 Final Exam for Prospective Graduating Seniors: April 15-19 TO BE TAKEN AS ASSIGNED Last Day to apply for May 2024Graduation: February 29 Final Exam for Non-Graduates: April 29-May 3 TO BE TAKEN ON THE DATE ASSIGNED ON THE SCHOOL'S FINAL SCHEDULE Baccalaureate: May 3 Commencement: May 4 HOLIDAYS HolidaySpring Break: March 11-15 Holiday MLKJr: Remembrance January 15 Holiday: Study Day: April 26 (This is the Friday before the beginning of Final Exams) IMPORTANT INFORMATION FOR SUCCESS IN THE COURSE • Not missing class. • Assignments are in Coursework-Keep up with new assignments and the Due Date. • Keeping up with your School Email.				
Weeks 1-14	**Total reading hours—60 (4 credit hour course)**	**Total participation hours—120 (4 credit hour course)**	**Total Student Contact Hours TOTAL—180 (4 credit- hour course)**	

After completion of this <u>beginning course in anatomy and physiology</u>, students will be able to do the following:

The Cardiovascular System: Blood

After learning the anatomy, histology, and physiology of the Cardiovascular System, specifically the Blood, the student will be able to do the following with 80% accuracy.

a. Predict the possibility of a mother delivering a baby with Hemolytic Disease of the Newborn.

b. From compatibility tests, the student will be able to determine the blood types acceptable for transfusion.

c. Explain the reasons that would lead to iron deficiency in a person's blood.
d. Support the reason why parents freeze the umbilical cord blood of their newborn children.
e. Predict the rejection of transplanted organs with a human body.

The Cardiovasculary System: Heart

After learning the anatomy, histology, and physiology of the Circulatory System, specifically the Heart, the student will be able to do the following with 80% accuracy.

a. To trace the flow of blood through the heart and lungs.
b. Predict interruptions to the heart when its electrical or hormonal activity is interrupted.
c. Identify Major Cardiac Arrhythmias by analyzing ECG data.
d. Use knowledge of cardiac muscle to help mitigate age-related changes that occur in the heart.
e. Defend the use of Β-adrenergic-blocking agents to the heart rate.

The Cardiovascular System: Blood Vessels and Circulation

After learning the anatomy, histology, and physiology of the Circulatory System, specifically Blood Vessels, the student will be able to do the following with 80% accuracy.

a. Conclude the cause of a person who shows signs of nausea, headache, unconsciousness (or death) along with cherry-red coloring of the skin.
b. Predict mean arterial blood pressure by analyzing short-term and long-term mechanisms.
c. Analyze the human internal buffering system and determine whether the system tends toward acidic or basic in nature.
d. Explain two of the major consequences of Aging of the Arteries.

Respiratory System

After learning the anatomy, histology, and physiology of the Respiratory System, the student will be able to do the following with 80% accuracy.

a. Predict the outcome of dysfunction of the muscles of respiration and the actions halted by this dysfunction.
b. Determine airflow into and out of the lungs, and alveoli using the three physical principles that determine airflow.
c. Combine knowledge of the blood, and the Respiratory System to explain the movement of CO_2 and O_2.
d. Predict the effects of maintenance of physical activity with respect to age-related changes in the Respiratory System.
e. Defend the use of an abdominal thrust (Heimlich Maneuver), Intubation, Cricothyrotomy, or tracheostomy during an extreme emergency when the upper air passageway is blocked by a foreign object to the extent that the victim cannot breathe, to the extent that quick action must be taken to save the person's life.
f. Prepare a comparison, with slides, showing a non-smoker's lungs, with the lungs of a heavy smoker. Come to the conclusion as to the efficiency of air passage from the lungs of both the smoker and non-smoker. Is smoking (even Marijuana) worth it?

Digestive System

After learning the anatomy, histology, and physiology of the Digestive System, the student will be able to do the following with 80% accuracy.
a. Explain how a Hiatal Hernia is detrimental to the health of the individual.
b. Describe how an individual can swallow liquids when standing on their head, or floating in a zero-gravity environment of space.
c. Point out why it is not detrimental to the liver of the human to remove parts of it when removing a tumor.
d. When discussing the liver, describe the difference between hepatitis, and cirrhosis. Include the cause and effect of each.
e. Why is cancer of the pancreas almost always fatal?
f. Explain why most adults in the world are Lactose Intolerant, whereas infants are not Lactose Intolerant.

Instructional Strategies:

- Inclass Discussion
- Inclass and Virtual Presentations
- Relevant videos

Student Activities:

- Participation
- Essay Questions
- Internet researc
- Midterm and Final Exams
- Chapter Exams
- Laboratory Assignments

Method of Instruction:

- Web-based environment
- Class discussion to examine the topics on the course outline.
- Required readings and online activities.
- Use of online tools and resources to facilitate a deeper understanding of the readings and the class discussions.

Note: Designated time will be given to each student to discuss student progress. See your instructor for more information.

SOFTWARE AND SUPPLIES

Software and Programs:

1. Access to websites as referenced in class. *Students attempting to gain access through Mac books, or outdated equipment may experience difficulties with certain websites or videos. It is the student's responsibility to locate a computer lab with viable equipment.*

2. Access to JICS. *It is the student's responsibility to become familiar with* JICS.

3. Documents in this course will be in Word format. PowerPoints will also be used.

4. *Students should be prepared to back up files on their own Flash Drive. Work should be saved more than once, as it is not the instructor's responsibility if technology issues suddenly occur and information is lost*.

COURSE REQUIREMENTS

SUBMISSION OF ASSIGNMENTS

All assignments must be submitted on time **in JICS. Submitting assignments through email is discouraged.** If **extenuating circumstances** prevent you from turning in an assignment, please contact the Instructor **before** the due date. Late work will be accepted without penalties **only if** emergencies are documented or Texas College is experiencing difficulties. Students are required to have access to internet that is JICS compatible.

Students are expected to submit assignments on the due date. If you submit an assignment late, you will receive 70% of the earned grade for the assignment. No excuses will be accepted, including difficulties with technology.

ATTENDANCE POLICY

The student is responsible for attending all lectures and other required functions for each registered class. A student will be permitted one unexcused absence per credit hour of the course by the instructor. Any student whose unexcused absences exceed the number permitted may be vulnerable to failing the course. The administration endorses student participation in activities and exercises that represent the college to the external public. However, students are still responsible for the successful completion of coursework. Below is a list of the excused absences and acceptable documentation considered by administration.
Excused Absences and the required documentation can be found on page 37 of the College Catalog. The Catalog can be found on the Texas College Website under the Office of Academic Affairs.
The student is responsible for attending all lectures and other required functions for each registered class—beginning with the first day of the scheduled class—in order to verify registration with instructors and to complete all work assigned for the course. If a student does not attend class during the first week (first five instructional days) of the semester, or does not attend five consecutive class sessions, and does not give prior notification to the instructor of reasons for absences, and intent to attend the class, the student may be recommended to the Vice-President for Academic Affairs to be administratively withdrawn from the course. The instructor should read the rules governing class attendance and absences to each of the assigned classes at the beginning of each semester.

These attendance regulations will be strictly enforced.

The student will be held accountable for adhering to the College Attendance Policy. Instructors are not obligated to allow students to submit late assignments because of their absence unless the absences have been officially approved. An officially approved absence, however, gives the individual who missed the class an opportunity to turn in the assignment late but in no way excuses the student from the work required. Students should understand that absences may jeopardize their grades. A student will be permitted one unexcused absence per credit hour of the course in which he/she is

enrolled. Any student whose unexcused absences exceed the number permitted may, at the discretion of the instructor, be assigned a grade of "F" or be dismissed from the class.

Absences will count from the first official date of classes and not from the first day the student attends. It is the responsibility of the instructor to keep an accurate attendance record of all students enrolled. Students receiving veterans' benefits are required to attend classes according to the regulations of the Veterans Administration in addition to those regulations set by the College for all students.

EXCUSED ABSENCES AND ACCEPTABLE DOCUMENTATION: From page 37 of the College Catalog:

- Personal illness or illness of immediate family member-Physician's statement.
- Death in immediate family-Funeral program.
- Patriotic duty (military or jury duty; court appearance)-Copy of notice or summons.
- Performance of co- or extra-curricular obligations to the College (travel with athletic teams, class field trips, conferences, seminars, fine arts performances -Written statement from sponsor or notice from either the Office of Academic Affairs or Student Affairs.

ACADEMIC HONESTY

Academic Integrity Policy:

Texas College believes that strength of character is as important as academic achievement, therefore, the College expects everyone in the academic community to maintain personal integrity in academic matters and not to contribute to, or condone the dishonesty of others. Scholastic dishonesty (which includes any form of plagiarism, cheating, falsification of records, and collusion with others to defraud) is improper and will not be tolerated. Texas College reserves the right to apply disciplinary actions to a student who has committed scholastic dishonesty. For further information, see the ***Texas College Catalog found on the Texas College website (www.texascollege.edu) page 35, Item: Academic Integrity Policy.***

INSTRUCTIONAL METHOD

Texas College observes **remote non-synchronous instruction** defined as a two-way, real-time/live instruction between instructors and students.

Attendance depends on the **active participation of students, through in class (non-synchronous) face-to-face instruction**.

PROGRAM FOR WHICH THE COURSE IS REQUIRED

Human Anatomy and Physiology II is a requirement for Biology Majors which leads to a Bachelor of Science (BS) Degree in Biology.

METHOD OF STUDENT EVALUATION

Tests are typically composed of multiple choice, fill in the blank, short answer, and true/false questions aimed at using critical thinking. Examinations are 100 points each, except for the final examination which is 200 points.

Evaluation Components	**% of Grade**
Lecture	**75**
Classroom Assignments	
QEP Assignment 1 – Writing Assignment	
QEP Assignment 2 – Writing Assignment	
Chapter Examinations	
Midterm Examination	
Final Examination	
Laboratory	**25**
Total:	

QEP Assignments due the Thursday before the Monday of Final Exams. The format for these papers will be discussed in class.

Grading Rubric:

A = 90-100	Transformative (and submitted on time)
B = 80-89	Proficient
C = 70-79	Developing
D = 60-69	Beginning
Below 60	Not Submitted on time

***Grade of C or above is required to pass the course. The course must be repeated for Biology Majors if grade is a D or below.**

Course Assignments-Lecture and Laboratory: (Assignments and their Due Dates on Posted on JICS Coursework).

Each student is expected to complete the assignments as specified. There will be No exceptions.

ASSESSMENT

Performance based standards for each learning opportunity will be explained prior to each assignment. Students will work toward successful attainment of all standards. The assessment is designed to require use of high-level thinking skills and to provide authentic opportunities for students to demonstrate an understanding of effective classroom management. Assessment of the course objectives may include but is not limited to methods such as simulation, debate, and research.

Quick-writes/Reflections: Each class may begin with a writing assignment related to required reading. At the end of each class, students may also write reflections based on what was learned.

Missed assignments cannot be made up. This is a measure of your attendance, and participation, as well as thinking skills.

SPECIAL NEEDS LEARNING

If a student has a disability for which they are requesting an accommodation, they are encouraged to contact both the instructor and the Office of the Vice President for Academic Affairs at (903) 593-8311 x. 2335 for accommodations as early as possible in the term.

DIVERSITY STATEMENT

Texas College is committed to creating a community that affirms and welcomes persons from diverse backgrounds and experiences and supports the realization of their human potential. It is recognize that there are differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, and geographical area. All persons will respect the individual differences of others.

Caveat:

In the event of extenuating circumstances, the schedule and requirements for this course may be modified.

TECHNOLOGICAL STATEMENT

This course is infused with technology in order to:

- Participate in the Course Non-synchronously
- To provide access for course information
- Use the Internet and electronic databases to conduct searches for research projects
- Create multimedia presentations to present class projects to teachers and peers
- Provide PowerPoint Presentations

WRITING ACROSS THE CURRICULUM

Strong communication skills are critical for professionals. In an effort to maintain a commitment to developing effective writing skills for all students, all writing assignments will be evaluated for overall communicative competence. The following will be considered when grading written assignments:

- Word-processed (12 font), double-spaced, one inch left, right, top and bottom margins
- Content
- Clarity and Organization
- Source(s)
- Depth of thought/Originality
- Technology and Delivery
- Grammar and mechanics

RESOURCES

Unit 1 Cardiovascular System (Blood), (Heart), (Blood Vessels)	
Blood Blood Components	1. https://www.youtube.com/watch?v=j2-BGTmuZjU 2. https://www.youtube.com/watch?v=qrE6Y0Se8bw

Blood Blood Types	3. https://www.youtube.com/watch?v=ZnEprHobSAA
Heart Blood Flow through the Heart	4. https://www.youtube.com/watch?v=jBt5jZSWhMI 5. https://www.youtube.com/watch?v=7XaftdE_h60
Heart Blood Pressure	6. https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/multimedia/what-is-blood-pressure/vid-20084747 7. https://www.webmd.com/hypertension-high-blood-pressure/video/high-blood-pressure-diagnosis
Blood Vessels Form and Function of Blood Vessels	8. https://www.youtube.com/watch?v=v43ej5lCeBo 9. https://www.youtube.com/watch?v=86Z3Gt6-BIU 10. https://www.youtube.com/watch?v=51rPV3xvYM4
Blood Vessels Blood and Blood Vessels	11. https://www.youtube.com/watch?v=LG6AO9P_REk
Unit 2 Respiratory System	
Respiratory System	12. https://www.youtube.com/watch?v=kacMYexDgHg
Respiratory System Physiology of the Respiratory System	13. https://www.youtube.com/watch/UTR1IsX55dc 14. https://www.youtube.com/watch?v=8NUxvJS-_0k 15. https://www.khanacademy.org/science/high-school-biology/hs-human-body-systems/hs-the-circulatory-and-respiratory-systems/v/meet-the-lungs
Unit 3 Digestive System	
Digestive System Physiology of the Digestive System	16. https://www.youtube.com/watch?v=Og5xAdC8EUI 17. https://www.youtube.com/watch?v=X3TAROotFfM
Digestive System Anatomy of the Digestive System	18. https://www.youtube.com/watch?v=meKRua8UJSo
Digestive System Stomach	19. https://www.youtube.com/watch?v=MLd4K5hKosw
Digestive System Acid Reflux	20. https://www.youtube.com/watch?v=IZlwDdckbIk

BIOLOGY PROFESSIONAL ORGANIZATIONS/ASSOCIATIONS

Professional Associations are a great source of information about internships, career pathways, conferences, scholarships, opportunities to meet people in your field, and a whole host of career-related topics. Usually associations will provide a discounted membership rate for students enrolled in college. A few of these organizations include:

- American Academy of Forensic Sciences
- American Association for the Advancement of Science
- American Institute of Biological Sciences
- The American Physiological Society
- American Society for Biochemistry and Molecular Biology
- American Society of Crime Laboratory Directors
- American Society for Human Genetics
- American Society for Microbiology
- Association for Women in Science
- The International Association for Science, Technology and Society
- National Academy of Science

https://www.purdue.edu/science/careers/build_professional_profile/professional_orgs/bio_orgs.html

- American Association of Black Physicians

For Students who plan to graduate from Teacher Education:

Science 4-8

Domain I: Scientific Inquiry and Processes

Competency 001: The teacher understands how to manage learning activities to ensure the safety of all students.

Competency 002: The teacher understands the correct use of tools, materials, equipment, and technologies.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.

Domain III: Life Science

Competency 011: The teacher understands the structure and function of living things.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.

Science 7-12

Domain I: **Scientific Inquiry and Processes**

Competency 001: The teacher understands how to select and manage learning activities to ensure the safety of all students and the correct use and care of organisms, natural resources, materials, equipment and technologies.
Competency 003: The teacher understands the history of science, how science impacts the daily lives of students and how science interacts with and influences personal and social decisions.
Domain VI: Diversity of Life
Competency 030: The teacher understands that, at all levels of nature, living systems are found within other living systems with its own boundaries and limits.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.
Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.

THE RULES

1. The class starts on time with no exceptions. Students who are late will not be allowed to enter the class and will be counted absent.
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2. Late Assignments will receive 70% of the earned grade.
3. Assignments written by another organization, person, plagiarized, or deemed dishonest will receive no credit for the assignment.
4. Labs will start at the beginning of the assigned class and will last for 50 minutes. Labs will close and not be reopened at the end of the 50 minute time period. The Biology Department does not offer Makeup Labs.
5. Five points will be deducted from your grade each time you are on your phone.
6. Should you leave the class to answer the phone, you will not be able to reenter
   the class and will be counted absent.
7. All grade documentation will be available in the instructors office.