



INSTRUCTIONAL PACKAGE

Bio 210
Anatomy and Physiology I

Effective Term
Fall 2024/Spring 2025/Summer 2025

INSTRUCTIONAL PACKAGE

Part I: Course Information

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: BIO 210

COURSE TITLE: Anatomy and Physiology I

CONTACT HOURS: 3-3

CREDIT HOURS: 4

RATIONALE FOR THE COURSE:

BIO 210 is the first of a two-course series that provides students with a detailed study in anatomy and physiology and prepares students for Allied Health programs, such as Nursing, Radiology and Dental Hygiene. After completion of this course, students will possess an increased awareness of the various structures and functions of the human body and will have a better understanding of how this relates to future allied health careers. Through guided classroom and laboratory experiences, students will identify body parts and relate organ systems for a comprehensive understanding of body function.

COURSE DESCRIPTION:

This is the first in a sequence of courses, including an intensive coverage of the body as an integrated whole. All body systems are studied. This course is transferable to public senior institutions as part of the South Carolina Commission on Higher Education Statewide Articulation Agreement.

PREREQUISITES/CO-REQUISITES:

Credit level [ENG 101](#) Minimum Grade of C or Credit level [ENG 101](#) Minimum Grade of TC or Credit level [ENG 102](#) Minimum Grade of C or Credit level [ENG 102](#) Minimum Grade of TC

***Online/Hybrid** courses require students to complete the [Distance Learning Orientation Video](#) prior to enrolling in an online course.

REQUIRED MATERIALS:

Please visit the [BOOKSTORE](#) online site for most current textbook information.

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

ADDITIONAL REQUIREMENTS:

A Connect access code from McGraw Hill is a required component of this course.

For Hybrid/Online Students Only: Each student will be required to view an orientation PowerPoint presentation during the first week of class. This presentation can be found on the course homepage in D2L under News. After viewing the presentation, all online students must complete the orientation quiz, which can be found under the dropdown assignment menu. A student will not be considered officially

enrolled in the course until the presentation has been viewed and the quiz completed with a 100% score. Any submitted work from the student including discussion posts, assignments, etc. will not be given a grade until the presentation has been viewed and the quiz has been submitted. Failure to view the presentation and take the quiz before midnight on the last day to add/drop classes will result in the student being automatically dropped from the course.

TECHNICAL REQUIREMENTS:

Access to Desire2Learn (D2L), HGTC's learning management system (LMS) used for course materials.
Access to myHGTC portal for student self-services.
College email access – this is the college's primary official form of communication.

STUDENT IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

CLASSROOM ETIQUETTE:

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

NETIQUETTE: is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

ACADEMIC DISHONESTY:

All forms of academic dishonesty, as outlined in the Student Code in the HGTC catalog, will NOT be tolerated and will result in disciplinary action. Anyone caught cheating (Defined in the code as: "a. Copying from another student's test or answer sheet. b. Using materials or equipment during a test not authorized by the person giving the test. c. Collaborating with any other person during a test without permission. d. Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of a test prior to its administration. e. Bribing or coercing any other person to obtain tests or information about tests. f. Substituting for another student or permitting any other person to substitute for oneself. g. Cooperating or aiding in any of the above.") or committing plagiarism (Defined in the code as: "(1) the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work or (2) submitting content for academic purposes that are created by artificial intelligence, technology platforms, or writing services and representing that such content is the person's own work product.") will be given a grade of a zero for that assignment and reported to the Senior VP of Academic Affairs, in accordance with the student handbook. A second offense will result in the student being withdrawn from the course with a W or WF at the professor's discretion and charges being filed with the Chief Student Services Officer.

Part II: Student Learning Outcomes

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

CHAPTER 1: INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY

Defining anatomy and physiology and explaining how they are related.

Listing the levels of organization in the human body and the characteristics of each.

Outlining the major characteristics of life.

Defining metabolism.

Outlining the major requirements of organisms.

Explaining the importance of homeostasis to survival and outlining the parts of a homeostatic mechanism, including positive and negative feedback systems.

Identifying major body cavities, serous membranes, and associated organs.

Naming the major organ systems and listing the main functions of each.

Utilizing correct anatomical terminology for relative positions, body sections, and body regions.

CHAPTER 2: CHEMICAL BASIS OF LIFE

Defining chemistry and relating this to anatomy and physiology.

Relating matter, atoms, and compounds.

Explaining how atomic structure predicts how atoms interact.

Utilizing molecular and structural formulas to symbolize the composition of compounds.

Identifying three types of chemical reactions.

Explaining pH, including the role of buffers, and contrasting acids and bases.

Listing the major groups of inorganic chemicals and explaining the function(s) of each.

Explaining the general functions and structures of the main classes of organic molecules in cells.

CHAPTER 3: CELLS

Outlining the structures of a composite cell including the cell membrane, organelles, and nucleus.

Explaining how substances move into and out of cells.

Organizing the cell cycle and explaining how a cell divides.

Explaining how stem cells and progenitor cells make possible growth and repair of tissues.

Discussing apoptosis.

CHAPTER 4: CELLULAR METABOLISM

Comparing and contrasting anabolism and catabolism.

Explaining how metabolic pathways are regulated and the role of enzymes in metabolic reactions.

Discussing how ATP stores chemical energy and makes it available to a cell.

Outlining the reactions of cellular respiration.

Discussing the process of protein synthesis and the roles of DNA and RNA.

CHAPTER 5: TISSUES (Lab Only)

Identifying the types of intercellular junctions in tissues.

Listing the four major tissue types in the body, including general characteristics and functions.

Identifying the types of epithelium, including location and function.

Explaining how glands are classified.

Identifying the types of connective tissue, including location and function.

Determining each of the four types of membranes.
Distinguishing among the three types of muscle tissue.
Discussing the general characteristics and functions of nervous tissue.

CHAPTER 6: INTEGUMENTARY SYSTEM (Lab Only)

Discussing the layers of the skin, including location, tissue type, and functions.
Discussing various cells of the skin and their locations and functions.
Summarizing the factors that determine skin color.
Discussing the accessory structures associated with the skin and their functions.
Listing various skin functions and explaining how the skin helps regulate body temperature.
Discussing wound healing and types of burns.

CHAPTER 7: SKELETAL SYSTEM

Classifying bones according to their shapes, and naming examples from each group.
Identifying the macroscopic and microscopic structures of a long bone and listing the functions of these parts.
Distinguishing between intramembranous and endochondral bones, and explaining how such bones develop and grow.
Discussing the effects of sunlight, nutrition, hormonal secretions, and exercise on bone development and growth.
Describe the negative feedback mechanisms affecting bone deposition and reabsorption by identifying the relevant glands, hormones, target tissues, and hormone functions.
Outlining the major functions of bones.
Distinguishing between the axial and appendicular skeletons.
Identifying bones and major anatomical markings in the skeleton.

CHAPTER 8: JOINTS OF THE SKELETAL SYSTEM

Explaining how joints can be classified structurally and functionally.
Classifying fibrous, cartilaginous and synovial joints and locating examples in the body.
Discussing the general structure of a synovial joint.
Explaining how skeletal muscles produce movements at joints, and identifying several types of joint movements.
Discussing the shoulder, elbow, hip and knee joints in detail, including major ligaments.

CHAPTER 9: MUSCULAR SYSTEM

Identifying the major parts of a skeletal muscle fiber and discussing the functions of each.
Summarizing the neuromuscular junction.
Explaining the major events of skeletal muscle fiber contraction and relaxation.
Listing the energy sources for skeletal muscle fiber contraction and discussing oxygen debt and fatigue.
Discussing how muscle contractions are recorded and explaining summation/recruitment.
Distinguishing between fast and slow twitch muscle fibers.
Comparing and contrasting skeletal, smooth and cardiac muscle.
Defining origin and insertion and explaining the interaction of skeletal muscles to allow movement.
Identifying skeletal muscles of each body region.

CHAPTER 10: NERVOUS SYSTEM I

Listing the general functions of the nervous system.
 Identifying the two types of cells that comprise nervous tissue and dividing the nervous system organs into two groups.
 Identifying the parts of a neuron and explaining their functions.
 Classifying neurons based on structure and function.
 Identifying the types of neuroglia and their functions.
 Explaining how information passes from a presynaptic neuron to a postsynaptic cell.
 Discussing cell membrane potential and the events leading to the generation of an action potential.
 Explaining how action potentials move down an axon and the role of myelin.
 Identifying the changes in membrane potential associated with excitatory and inhibitory neurotransmitters.
 Explaining the basic ways in which the nervous system processes information.

CHAPTER 11: NERVOUS SYSTEM II

Summarizing the types of meninges and their functions.
 Discussing the formation and function of cerebrospinal fluid.
 Discussing the structure and functions of the major parts of the brain, brainstem, and spinal cord.
 Explaining hemisphere dominance.
 Explaining the stages in memory storage.
 Outlining a reflex arc and reflex behavior.
 Outlining ascending and descending spinal cord tracts.
 Distinguishing between the major parts of the peripheral nervous system and discussing the structure of a peripheral nerve.
 Identifying the cranial and spinal nerves and listing their major functions.
 Comparing and contrasting the sympathetic and the parasympathetic divisions of the autonomic nervous system, including actions and neurotransmitters.

CHAPTER 12: NERVOUS SYSTEM III

Distinguishing between general senses and special senses.
 Naming the five types of receptors and listing the function of each.
 Explaining sensation, perception, and sensory adaptation.
 Discussing the different types of general senses and how they function.
 Explaining how the sensations of smell and taste are produced and interpreted.
 Labeling the parts of the ear and explaining the function of each part.
 Outlining the auditory pathway.
 Distinguishing between static and dynamic equilibrium.
 Labeling the parts of the eye and explaining the function of each part.
 Outlining the visual pathway.
 Comparing and contrasting rods and cones.

Lab Specific Outcomes

Learning outcomes for the lab portion of this course are included in the Lab Student Handouts, a document that will be provided to you by your lab Instructor. They are detailed for each lab topic covered in the course and include items like identification of structures on lab models, diagrams, devices, and dissected materials. Learning outcomes include utilization of microscopes to view and

identify cells and tissues. Accurate spelling is a learning outcome and graded component of this course.

****Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*:

Students’ performance will be assessed and the weight associated with the various measures/artifacts are listed below.

EVALUATION*

Lecture	75%
Lab	25%
	100%

****Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

GRADING SYSTEM:

Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

For online and hybrid courses, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

Science Department Attendance Policies:

For a 15-week course (fall and spring) or a 10-week course (summer), the allowed number of absences for a MW or TR class is as follows: 4 absences are allowed for lecture and 2 are allowed for lab, regardless of reason. For a lecture class that meets once a week, the allowed number of absences is 2.

For a 7-week fast-paced course (fall and spring) or a 5-week fast-paced course (summer), the allowed number of absences is as follows: 1 absence is allowed for lecture and 1 for lab, regardless of reason.

Online/Hybrid Attendance:

Students enrolled in distance learning courses (hybrid and online) are required to maintain contact with the instructor on a regular basis to be counted as "in attendance" for the course. All distance learning students must participate weekly in an Attendance activity in order to demonstrate course participation. Students showing no activity in the course for two weeks (these weeks do not need to be consecutive) will be withdrawn due to lack of attendance.

Lab Attendance for Hybrid Courses:

Students in hybrid classes in which labs only meet 5 or 6 times during the semester, must attend all lab sessions for its entirety. Failure to attend one lab will result in immediate withdrawal. Students in hybrid classes where labs meet every week, you are allowed two lab absences. When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF.

Lab Attendance for Hybrid Courses:

Students in hybrid classes in which labs meet weekly, are allowed two (2) lab absences. Students in hybrid labs that only meet 5 or 6 times during the semester, must attend all lab sessions for its entirety. When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF.

Part V: Student Resources



The Student Success and Tutoring Center (SSTC):

The SSTC offers to all students the following **free** resources:

1. **Academic tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring, contact the SSTC at ssc@hgtc.edu or self-schedule in the Penji iOS/Android app or at www.penjiapp.com. Email ssc@hgtc.edu or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



STUDENT INFORMATION CENTER: TECH Central

TECH Central offers to all students the following free resources:

1. **Getting around HGTC:** General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.

Visit the [Tech Central](#) website for more information. Live Chat and Center locations are posted on the website. Or please call (843) 349 – TECH (8324), Option #1.



HGTC Library:

Each campus location has a library where HGTC students, faculty, and staff may check out materials with their HGTC ID. All three HGTC campus libraries are equipped with computers to support academic research and related school work; printing is available as well. Visit the [Library](#) website for more information or call (843) 349-5268.

Student Testing:

Testing in an **online/hybrid** course and in make-up situations may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms (which may have a fee associated with the usage).

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

DISABILITY SERVICES:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability Services staff will review documentation of the student's disability and, in a confidential setting with the student, engage in an interactive process to develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided. Students will need to reach out to the Accessibility and Disability Services staff each semester to renew their accommodations.

COUNSELING SERVICES:

HGTC Counseling Services strives to optimize student success through managing personal and academic concerns that may interfere with achieving educational goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to counseling@hgtc.edu or visit the website the [Counseling Services webpage](#).

STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation, in the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, tamatha.sells@hgtc.edu or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: OCR@ed.gov).

Other employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & the College's Affirmative Action/Equal

Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, jacquelyne.snyder@hgtc.edu.

Other student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, melissa.batten@hgtc.edu.

TITLE IX REQUIREMENTS:

Title IX of the Education Amendments of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement*.

*Faculty and Staff are required to report these incidents to the Title IX Coordinator when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, tamatha.sells@hgtc.edu.

PREGNANCY ACCOMMODATIONS

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the [**Pregnancy Intake Form**](#).