

HGTC

Horry-Georgetown
Technical College

COURSE INSTRUCTIONAL PACKAGE

BIO 110

General Anatomy and Physiology

Effective Term

Fall 2026/Spring 2027/Summer 2027

Part I: Course Information

Effective Term: Fall 2026/Spring 2027/Summer 2027

COURSE PREFIX: BIO 110

COURSE TITLE: General Anatomy and Physiology

CONTACT HOURS: 3

CREDIT HOURS: 3

RATIONALE FOR THE COURSE:

BIO 110 provides students with a general introduction to anatomy and physiology that prepares the students for more advanced coursework in their respective allied health program. This course will serve students in the medical coding and billing, phlebotomy, and patient care programs. After completing this course students will have a general understanding of the complex and interrelated nature of the human body and its various systems.

COURSE DESCRIPTION:

This course is a general introduction to the anatomy and physiology of the human body. Emphasis is on the organ systems of the human and their interrelationships.

PREREQUISITES/CO-REQUISITES:

((ACT English 14 or SAT Critical Reading 380 or Multiple Measures English 1 or Writing Sample ENG101 1 or WS ENG101 with Lab 1 or Writing Sample ENG155 1 or Credit level [ENG 101](#) Minimum Grade of C or Credit level [ENG 101](#) Minimum Grade of TC or Credit level [ENG 155](#) Minimum Grade of C or Credit level [ENG 155](#) Minimum Grade of TC))

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.

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.

ATTENDANCE VERIFICATION:

The Add/Drop Period is the first 7 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format classes. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all 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

IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to complete identity verification. Please refer to your Instructor's Course Information Sheet for information regarding this requirement.

STUDENT COURSE EVALUATIONS:

Each semester, students are provided with an opportunity to participate in course evaluation surveys. These evaluations offer crucial feedback to instructors and the College, leading to enhancement of educational quality. By completing these surveys, you play a key role in the ongoing improvement of teaching methods and course content, ensuring future students enjoy a better learning experience.

Students are encouraged to complete these surveys as your active participation in this process reflects your dedication to your education and drives positive change.

CLASSROOM ETIQUETTE AND STUDENT RIGHTS AND RESPONSIBILITIES:

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 an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

To ensure a positive College experience, guidelines exist in numerous areas of campus life. The Student Code for The South Carolina Technical College System "The Student Code" (3-2-106.1) applies to all HGTC students. The Student Code sets forth rights and responsibilities of the individual student, identifies behaviors that are not consistent with the values of college communities, and describes the procedures that will be followed to adjudicate cases of alleged misconduct. Students are expected to conduct themselves in a civil manner, that is respectful of the rights of others, and that is compatible with the college's educational mission. Students are expected to comply with all of the college's duly established rules and regulations regarding student behavior while on campus; while participating in off-campus college sponsored activities; and while participating in off-campus clinical, field, internship, or in-service experiences. Students are expected to comply with all course requirements as specified by instructors in course syllabi and to meet the standards of acceptable classroom behavior set by instructors. For more information, login to your myHGTC account under "Student Rights and Responsibilities" card then select "Student Code of Conduct" or the "Student Catalog and Handbook."

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. If a zero is awarded due to academic misconduct and the lowest exam grade is dropped, that zero will NOT be eligible to be the dropped grade, it will count within the final average. A second offense will result in the student being withdrawn from the course with a W and charges being filed with the Chief Student Services Officer. Alternatively, at the professor's discretion, a student can be assigned a failing grade for the course.

Part II: Student Learning Outcomes

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

Lecture Student Learning Outcomes:

Introduction

Define anatomy and physiology.

Define the levels of organization of multicellular organisms.

Describe the location of structures in the human body using anatomical terms of direction, regions, planes, positions, and cavities.

Describe the functions of the 11 organ systems and their basic role in maintaining homeostasis.

Describe the location, structure, and function of serous membranes.

Define homeostasis and explain why it is so important in human physiology.
Define negative feedback and positive feedback and explain their importance to homeostasis.
Define disease and describe the relationship between disease and homeostasis.
List the 5 basic needs for life.
Define metabolism, catabolism, and anabolism.

Chemicals of life

Describe the structure of the atom and subatomic particles
Compare and contrast ionic bonds and covalent bonds
Compare synthesis and decomposition reactions.
Differentiate between organic and inorganic substances.
Name the 4 most common elements in the human body.
Compare solutions based on tonicity.
Describe the four types of major organic molecules in the body, their building blocks, an example of each, the location of each example in the body, and the function of each example.

The Cell

Describe cell organelles and structures and explain their functions.
Describe mitosis stages.
Describe passive and active transport and give examples of each type.
Compare the effects of tonicity on body cells.

Tissues and Membranes

Define tissue
Describe the 4 main tissue types, their structure, function, and location in the body.
Give examples of each tissue type.
Differentiate between connective tissue membranes and epithelial tissue membranes.

Integumentary system

Use medical terminology related to the integumentary system.
Describe the histology of the epidermis, dermis, and hypodermis.
Describe the cells of the epidermis and their function.
Describe the structures of the dermis and their functions.

Compare and contrast the glands of the skin in terms of their structure, products, and functions.

Describe the anatomy and function of hair and nails.

Compare and contrast three degrees of burns in terms of symptoms, layers of the skin affected, and method used by the body for healing.

Describe forms of skin cancer in terms of the body area most affected, appearance, and ability to metastasize.

The Skeletal System

Use medical terminology related to the skeletal system

List functions of the skeletal system.

Distinguish between the axial skeleton and the appendicular skeleton.

Describe five types of bones classified by shape.

Identify bones of the axial skeleton and appendicular skeletons.

Describe the cells, fibers, and matrix of bone tissue.

Compare and contrast the histology of compact and cancellous bone.

Describe the anatomy of a long bone.

Compare and contrast endochondral and intramembranous ossification.

Compare and contrast endochondral and appositional bone growth.

Classify fractures using descriptive terms.

Contrast the 3 types of joints and give examples of each.

Describe disorders of the skeletal system and joints.

The Muscular System

Use medical terminology related to the muscular system.

Demonstrate actions caused by muscles.

Describe the structural components of a muscle.

Compare and contrast skeletal, cardiac, and smooth muscle tissue in terms of appearance, structure and location.

Summarize the functions of the muscular system and give an example or explanation of each.

The Nervous System

Use medical terminology related to the nervous system.

Describe the organization of the nervous system in regard to structure and function.

Describe the anatomy of a neuron.

Describe neuroglia and state their function.

Describe the meninges covering the brain and spinal cord.

Describe the major landmarks and subdivisions of the brain and state their functions.

Describe the anatomy of the spinal cord.

Compare the parasympathetic and sympathetic divisions of the autonomic nervous system in terms of anatomy and function.

Describe nervous system disorders and relate abnormal function to the pathology.

The Senses

Use medical terminology related to the senses.

Describe the purpose of and types of sensory receptors.

Describe the sensory receptors for the general senses in the skin.

Describe the sensory receptors for taste.

Describe the sensory receptors for smell.

Describe the anatomy of the ear.

Describe the anatomy of the eye.

Describe disorders of the senses and relate abnormal function to the pathology.

The Endocrine System

Use medical terminology related to the endocrine system.

Define hormone, gland, and target organ.

Contrast endocrine glands and exocrine glands

Compare and contrast the endocrine and nervous systems in terms of type, specificity, speed, and duration of communication.

List the major hormones-along with their target tissues and functions- of each of the endocrine system glands.

Locate and identify endocrine system glands.

Explain the function of specific hormones.

Describe endocrine system disorders and relate abnormal function to pathology.

Blood

Identify the components of blood.

List the constituents of plasma and their functions.

Identify the formed elements and list their functions.

Describe the body's mechanisms for controlling bleeding.

Describe pathways for blood clotting.

Explain what determines ABO and Rh blood types.

Explain how a blood type relates to transfusion compatibility.

Determine from a blood type the antigens and antibodies present and the transfusion compatibility.

Predict the compatibility between mother and fetus given Rh blood types for both and describe the possible effects.

Summarize the functions of blood by giving an example or explanation of each.

Describe common diagnostic blood tests and explain what can be learned from them.

Describe blood disorders.

The Heart and Vessels

Use medical terminology related to the cardiovascular system.

Identify the chambers, valves, and features of the heart.

Trace blood flow through the heart.

Describe the heart's electrical conduction system.

Describe the events that produce the heart's cycle of contraction and relaxation.

Interpret a normal EKG, explaining what is happening electrically in the heart.

Locate and identify the major arteries and veins of the body.

Compare the anatomy of the three types of blood vessels.

Describe coronary and systemic circulatory routes.

Explain how blood in veins is returned to the heart.

Describe how blood pressure is expressed and how mean arterial pressure and pulse pressure are calculated.

Describe heart and vessel disorders and relate abnormal function to pathology.

The Lymphatic System

Use medical terminology related to the lymphatic system.

Explain the origin and composition of lymph.

Describe lymph vessels.

Explain the route of lymph from the blood and back again.

Identify lymphoid tissues and organs and explain their functions.

Explain the functions of the lymphatic system.

Describe lymphatic system disorders and relate abnormal function to pathology.

The Respiratory System

Use medical terminology related to the respiratory system.

Trace the flow of air from the nose to the pulmonary alveoli and relate the function of each part of the respiratory tract to its gross and microscopic anatomy.

Explain the mechanics of breathing in terms of anatomy and pressure gradients.

Describe the mechanisms for transporting O₂ and CO₂ in the blood.

Explain the functions of the respiratory system.

Describe respiratory system disorders and relate abnormal function to pathology.

The Digestive System

Use medical terminology related to the digestive system.

Differentiate between mechanical digestion and chemical digestion.

Describe the digestive anatomy of the oral cavity.

Explain the physiology of mechanical and chemical digestion in the mouth.

Describe the digestive anatomy from the mouth to the stomach.

Explain how materials move from the mouth to the stomach.

Describe the digestive anatomy of the stomach.

Explain the physiology of mechanical and chemical digestion in the stomach.

Describe the anatomy of the digestive accessory organs connected to the duodenum by ducts.

Describe the digestive anatomy and function of the small intestine.

Describe the anatomy and function of the large intestine.

Summarize the functions of digestion.

Describe digestive system disorders and relate abnormal function to pathology.

The Excretory/Urinary System

Use medical terminology related to the excretory system.

Identify the organs in the urinary system

List the functions of the kidneys in addition to urine production.

Describe the external and internal anatomy of the kidneys.

Describe the anatomy of a nephron.

Describe the anatomy of the ureters, urinary bladder, and male and female urethras.

Summarize the functions of the excretory system.

Describe excretory system disorders and relate abnormal function to pathology.

The Male/Female Reproductive System

Use medical terminology related to the reproductive system.

Explain hormones involved in the reproductive system

Describe the anatomy and function of male and female reproductive organs

Describe male and female reproductive system disorders and relate abnormal function to pathology.

****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*

Unit Tests	60%
Connect	20%
<u>Discussions</u>	<u>20%</u>
	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, and Is also negatively impact academic progression and financial aid status.

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 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, refer to your Instructor's Course Information Sheet for any required on-site meeting times. In online courses, attendance is fulfilled through the submission of academic work. Please be aware that instructors may require exams to be proctored either online or at an approved testing site. If you choose to use a testing center other than those provided by HGTC, that center may charge a fee for its services.

Tardiness:

Students are expected to arrive on time and remain for the entire class session. Repetitive tardiness that results in a significant loss of instructional time may be counted as an absence at the instructor's discretion. Students are encouraged to communicate with their instructor in advance if they anticipate being late or need to leave early due to extenuating circumstances.

Part V: Student Resources

THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

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

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



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

STUDENT INFORMATION CENTER – TECH Central:



TECH Central offers all students the following free resources:

1. Getting around HGTC: General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. In-person and remote assistance are available for Desire2Learn, Student Portal, Degree Works, and Office 365.
3. 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. You may also call (843) 349-5199.

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 have librarians and staff who can aid with research, computers to support academic research and related school-work, and individual/group study rooms. Printing is available as well at each location. Visit the [Library](#) website for more information or call (843) 349-5268.

STUDENT TESTING:

Testing in HGTC courses may occur during regularly scheduled class time or online, with or without proctoring. Tests may be delivered in the following formats:

- Digitally through D2L
- In writing on paper
- Through a publisher platform (note: some publisher platforms carry an associated fee)

Tests may include time limits and may require proctoring depending on the course.

When proctoring is required and is not provided by the course instructor in the classroom, students may complete their test face-to-face at an [HGTC Testing Center](#) or another approved testing site, or online using HGTC's online proctoring provider. For more information about available proctoring options, visit the [Online Testing](#) section of the HGTC Testing Center webpage.

Students testing at an HGTC Testing Center should note the following:

- **Appointments must be scheduled at least 24 hours in advance.**
- **A physical, government-issued photo ID is required to test.**

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. Students seeking accommodations are encouraged to visit HGTC's [Accessibility and Disability Service webpage](#) for detailed information.

It is the student's responsibility to self-identify as needing accommodations and to provide appropriate documentation. Once documentation is submitted, the student will participate in an interactive process with Accessibility and Disability Services staff to determine reasonable accommodations. Students may begin the accommodations process at any time; however, accommodations are **not retroactive** and will only be applied from the point at which they are approved. Students must contact the office **each semester** to renew their accommodations.

For assistance, please contact the Accessibility and Disability Services team at disabilityservices@hgtc.edu or 843-796-8818 (call or text).

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:

Our sincere commitment to both effective business management and equitable treatment of our employees requires that we present this Policy Statement as an embodiment of that commitment to the fullest.

Discrimination is conduct that includes unjust or prejudicial treatment based upon an individual's age, race, color, sex, religion, national origin, disability, and genetic information or any other protected classes deemed unlawful under State or Federal law that excludes an individual from participation in, denies the individual the benefits of, treats the individual differently, or otherwise adversely affects a term or condition of a person's working or learning environment. This includes failing to provide reasonable accommodation, consistent with state and federal law, to persons with disabilities.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Jen Riddei, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 HWY 501 E, PO Box 261966, 843-349-5218, Jenifer.Riddei@hgtc.edu.

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, and Section 504 & Title II Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 HWY 501 E, PO Box 261966-6066, 843-349-5228, Melissa.Batten@hgtc.edu.

Employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Synder, Vice President, Human Resources and Employee Relations and 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.

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 sexual harassment, 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).

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Jen Riddei, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 HWY 501 E, PO Box 261966, 843-349-5218, Jenifer.Riddei@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* that can be found [here](#).