

**ATHENS TECHNICAL COLLEGE  
LIFE SCIENCE DIVISION  
AHS 1011  
COURSE SYLLABUS**

**TITLE:** Anatomy and Physiology

**PREREQUISITE:** ENG 097 with a grade of C\* or better and RDG 097 with a grade of C\* or better or placement by diagnostic testing

**Quarter Offered** Quarterly

**Class Hours:** 5

**Lab Hours:** 0

**Credit Hours:** 5

**INSTRUCTOR:** Please refer to course addendum

**INSTRUCTOR AVAILABILITY:** Please refer to course addendum

**ASSIGNMENT:** Please refer to course addendum

**MANDATORY SUPPLEMENTARY MATERIALS:**

Course Syllabus

Course Addendum

Pen

#2 pencils (necessary for exams), if applicable

Scantron sheets corresponding with number of tests scheduled for the course, if applicable.

Textbook, current edition

**COURSE DESCRIPTION**

This course focuses on the basic, normal structure and function of the human body. Instructors provide an overview of each body system, how the systems coordinate activities to maintain a balanced state, and how these systems recognize deviations from the normal. Topics include general plan and function of the human body, integumentary system, skeletal system, muscular system, nervous and sensory systems, endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, urinary system, and reproductive system.

### STUDENT LEARNING OUTCOMES:

Competency	After completing this section, the student will be able to:	Hours		
		Class	D.Lab	P.Lab/ O.B.I.
<b>GENERAL PLAN AND FUNCTION OF THE HUMAN BODY</b>		<b>5</b>	<b>0</b>	<b>0</b>
General plan and structure of the human body	Define anatomy and physiology.			
	Describe anatomical position.			
	Define and use the principle directional terms in human anatomy.			
	Identify on diagram, sagittal, transverse, and frontal sections of the body.			
	Define and locate the principle regions and cavities of the human body.			
	Identify the structure of a cell tissue, organ, and system, and explain the relationship among these structures as they constitute an organism.			
Chemical elements and the human body	Define the term homeostasis and metabolism, and cellular respiration.			
	Differentiate between inorganic and organic compounds and give examples of each.			
	Describe the properties of water that make it essential for body functions.			
	Contrast acids and bases and use pH scale in describing acidity and alkalinity of a solution.			
	Identify the biologically significant elements from a given list by their chemical symbols and summarize the main functions of each in the body.			
Cells	Describe the structure of a typical cell.			
	List organelles and discuss the functions of each.			
	Describe active and passive transport mechanisms.			
	Define mitosis and meiosis.			
Tissues	Define the term tissue and list the four major types.			
	List and describe major types of epithelial, connective, and muscle tissues.			
	Locate and describe different categories of membranes in the body.			
Integumentary System	Identify the main and accessory structures of the integumentary system and their functions.			
	Discuss function of the skin in homeostasis of body temperature.			

Competency	After completing this section, the student will be able to:	Hours		
		Class	D.Lab	P.Lab/ O.B.I.
Skeletal System	Describe functions of the skeletal system.			
	Identify major bones of the axial and appendicular skeletons.			
	Explain relationships of the endocrine system to the skeletal system.			
	Describe development of the skeletal system.			
	Define articulation and identify types of joints.			
	Explain physiology of a muscle contraction.			
	Describe actions of muscles.			
<b>INTEGUMENTARY SYSTEM</b>		<b>2</b>	<b>0</b>	<b>0</b>
	Identify the main and accessory structures of the integumentary system and their functions.			
	Discuss function of the skin in homeostasis of body temperature.			
<b>SKELETAL SYSTEMS</b>		<b>5</b>	<b>0</b>	<b>0</b>
	Describe functions of the skeletal system.			
	Identify major bones of the axial and appendicular skeletons.			
	Explain relationships of the endocrine system to the skeletal system.			
	Describe development of the skeletal system.			
	Define articulation and identify types of joints.			
	Describe functions of the skeletal system.			
<b>MUSCULAR SYSTEM</b>		<b>5</b>	<b>0</b>	<b>0</b>
	Explain functions of skeletal muscular system.			
	Identify major skeletal muscles and functions.			
	Explain physiology of a muscle contraction.			
	Describe actions of muscles.			
	Explain functions of skeletal muscular system.			
<b>NERVOUS AND SENSORY SYSTEMS</b>		<b>6</b>	<b>0</b>	<b>0</b>
Nervous System	Identify the general functions of the nervous system.			
	Explain the anatomical and functional classification of the nervous system.			
	Identify types of neurons and describe their functions.			
	Identify parts of a neuron.			
	Describe the physiology nerve impulse transmission.			
	Describe spinal cord and spinal reflexes.			

Competency	After completing this section, the student will be able to:	Hours		
		Class	D.Lab	P.Lab/ O.B.I.
	Describe and give the functions of the layers of the meninges and cerebral spinal fluid.			
	Identify spinal nerves and define plexus.			
	Identify cranial nerves and give functions of each.			
	Compare and contrast the sympathetic with the parasympathetic nervous system.			
	Name the principle areas and functions associated with the lobes of the cerebrum.			
	Identify and describe the functions of the major regions of the brain.			
Senses	Describe the structure and functions of the three major parts of the ear.			
	Describe the structure and functions of the eye.			
	Describe the physiology of vision.			
	Trace sound waves through the ear.			
	Differentiate special and general senses.			
	Describe tactile sensation and proprioception.			
<b>CARDIOVASCULAR SYSTEM</b>		<b>5</b>	<b>0</b>	<b>0</b>
	Describe the functions of the cardiovascular system.			
	Describe the major components of the cardiovascular system.			
	Describe the components of plasma and the functions of each.			
	Describe and give the function of each type of formed element.			
	Explain the ABO and Rh blood grouping systems.			
	Describe the location of the heart in relation to other organs of the thoracic cavity and the associated serous membranes.			
	Label a heart identifying chambers, valves, and associated vessels of the heart.			
	Trace flow of blood through the heart, and distinguish between the pulmonary and systemic circulation.			
	Describe location of the parts of the conduction system of the heart, and trace the pathway of impulses initiation and conduction.			
	Identify major blood vessels.			

Competency	After completing this section, the student will be able to:	Hours		
		Class	D.Lab	P.Lab/ O.B.I.
	Describe the structure and function of the different kinds of blood vessels.			
	Define blood pressure and contrast the clinical significance of systolic, diastolic, and pulse pressure.			
<b>LYMPHATIC SYSTEM</b>		<b>1</b>	<b>0</b>	<b>0</b>
	Describe the structures of the lymphatic system and their functions.			
	Explain adaptive and innate resistance to disease.			
<b>RESPIRATORY SYSTEM</b>		<b>4</b>	<b>0</b>	<b>0</b>
	Describe parts of the upper and lower respiratory tract.			
	Trace the pathway of air into and out of the respiratory tract.			
	Explain the physiology of breathing.			
	Differentiate external and internal respirations.			
	Explain how oxygen and carbon dioxide are carried by the blood.			
<b>DIGESTIVE SYSTEM</b>		<b>4</b>	<b>0</b>	<b>0</b>
	Differentiate chemical and mechanical digestion.			
	Identify the parts of the digestive system, their locations, and explain the function of each.			
	Trace the pathway of food through the gastrointestinal system.			
	Identify the major digestive secretions and their functions.			
	Describe the process of absorption.			
<b>URINARY SYSTEM</b>		<b>5</b>	<b>0</b>	<b>0</b>
	Locate the parts of the urinary system on a diagram.			
	Explain general functions of the urinary system.			
	Explain the relationships of the urinary system to the endocrine and circulatory system.			
	Describe the structure and function of the nephron.			
	Compare the urinary system of the female with that of the male.			
	Identify the constituents of urine.			
	Differentiate the processes of secretion, filtration, and reabsorption and where they occur in the nephron.			

Competency	After completing this section, the student will be able to:	Hours		
		Class	D.Lab	P.Lab/ O.B.I.
<b>REPRODUCTIVE SYSTEM</b>		<b>3</b>	<b>0</b>	<b>0</b>
	Describe the anatomy and physiology of the female reproductive system.			
	Explain the relationship of the endocrine system to the menstrual cycle and the function of the female reproductive system.			
	Describe the physiology of the male and female gonads and the production of gametes.			
	Describe the anatomy and physiology of the male reproductive system.			
	Relate the urinary system to the reproductive system of the male.			
	Explain the relationship of the endocrine system to the function of the male reproductive system.			
		<b>Class</b>	<b>D.Lab</b>	<b>P.Lab/ O.B.I.</b>
<b>ENDOCRINE SYSTEM</b>		<b>5</b>	<b>0</b>	<b>0</b>
	Define the endocrine gland and hormone, and describe how the endocrine system works to maintain homeostasis.			
	Locate the principle endocrine glands, and identify the principle hormones, functions, and target tissues.			
	Describe the mechanism by which the hypothalamus links the nervous and endocrine systems.			
	Describe feedback mechanisms.			
	Describe location of the parts of the conduction system of the heart, and trace the pathway of impulses initiation and conduction.			
	Identify major blood vessels.			
	Describe the structure and function of the different kinds of blood vessels.			
	Define blood pressure and contrast the clinical significance of systolic, diastolic, and pulse pressure.			

**INSTRUCTIONAL DELIVERY METHODS:**

Any or all of the following methods may be utilized to facilitate learning: lecture, discussion, audiovisual aids, independent reading and outlines, handouts, and examinations / pop quizzes. Although every attempt will be made by the instructor to cover assigned material in class, **THE STUDENT IS RESPONSIBLE FOR ALL MATERIALS OR COMPETENCIES LISTED IN THE SYLLABUS.**

You are responsible for the information contained in each chapter for testing purposes whether or not the entire chapter is covered fully in class. It is the student’s responsibility to read each chapter and study the information and come prepared for testing on the materials included within those chapters. Exams may be a combination of multiple choice, matching, true/false, and fill in the blank

The final exam will be a comprehensive exam which will cover all materials covered over the 10 weeks of the quarter. The student should not merely memorize the material for each exam, but, incorporate the new knowledge into his / her long-term memory.

**ATTENDANCE:**

Regular class attendance is important and expected. The college considers both tardiness and early departure from class as forms of absenteeism. Students absent from class for any reason are still responsible for all work missed. Instructors have the right to determine whether work missed can be made up and have the liberty to set reasonable expectations for attendance based on frequency of class meetings and on the instructional delivery method, subject, type, and level of the class. Class attendance policies will be clearly stated for students by their respective instructors on separate documents or appendices to the master syllabus.

**COMMUNICATION:** In concordance with the communication policies of ATC, any and all electronic communication shall be conducted via the students’ ATC email accounts. It is the student’s responsibility to ensure ATC sponsored email accounts are working properly. Please go to <http://www.athenstech.edu/studentssupport.cfm> if problems arise. Course instructors communicate information to class participants on a regular basis, is the student’s responsibility to check ATC email accounts and ANGEL accounts a **minimum of every other day.**

**EVALUATION PROCEDURE:** Please refer to course addendum

Grades will be issued at the end of the quarter using the following Athens Technical College grading system. Refer to the *ATC Catalog and Student Handbook* pp. 41-43for further details.

A	(90 – 100)	Excellent	GPA 4.0
B	(80 – 89)	Good	GPA 3.0
C	(70 – 79)	Satisfactory	GPA 2.0
D	(60 – 69)	Poor	GPA 1.0
F	(below 60)	Failing	GPA 0.0

Specified courses in diploma programs of study require a grade of ‘C’ or higher as stated in the program description of the ATC catalog.

**MAKE-UP OF EXAMS:** Please refer to course addendum

**ATTENDANCE:**

Regular class attendance is important and expected. The college considers both tardiness and early departure from class as forms of absenteeism. Students absent from class for any reason are still responsible for all work missed. Instructors have the right to determine whether work missed can be made up and have the liberty to set reasonable expectations for attendance based on frequency of class meetings and on the instructional delivery method, subject, type, and level of the class. Class attendance policies will be clearly stated for students by their respective instructors on separate documents or appendices to the master syllabus.

**ACADEMIC HONESTY:**

Academic honesty is expected at all times. Any student found to have engaged in academic misconduct such as cheating, plagiarism, or collusion is subject to disciplinary sanctions as outlined in the Student Code of Conduct details in the *ATC Catalog and Student Handbook*. The term “plagiarism” includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. The term “collusion” includes, but is not limited to, the unauthorized collaboration with any other person in preparing work offered for academic credit. Students are advised that faculty routinely use **turnitin.com** both to prevent plagiarism and to assist in verifying when/if it has occurred.

**WORK ETHICS:** A work ethics grade will be given each quarter for each course completed here at Athens Technical College. Work ethic grades will not affect the academic grade point average (GPA) of a student; that is, work ethic grades remain separate from academic grades. Work ethic grades will be printed on quarterly Student Grade Reports and Transcripts. The work ethic grade is designed to evaluate and encourage good work habits. The areas being evaluated are: attendance, character, teamwork, appearance, attitude, productivity, organization, communication, and respect. The rating scale is:

- 3 – Exceeds Expectations
- 2 – Meets Expectations
- 1 – Needs Improvement
- 0 – Unacceptable

2008-2010. Athens Technical College; pp.42-43.

**COURSE WITHDRAWAL:**

Students may withdraw from a course without academic penalty until the midpoint of the quarter (as stated by the Academic Calendar published in the *ATC Catalog and Student Handbook*). By withdrawing before the midpoint of the quarter, the student is automatically assigned a grade of W, which does not affect quarterly or cumulative grade point average. Grades of W will affect satisfactory academic progress for financial aid purposes. **Students who stop attending class(es) without formally withdrawing risk earning a final grade of F, which will appear on the academic transcript.** Refer to the *ATC Catalog and Student Handbook* for further details.

**ACADEMIC SUPPORT CENTER:**

The Academic Support Centers of Athens Technical College (ATC) provide free tutoring for enrolled students. Both instructors and peer tutors provide tutoring in almost all subjects offered by the college. Information about the Center is accessible via the ATC website at [www.athenstech.edu](http://www.athenstech.edu). To find out the specific services available on the Athens, Greene, and Walton Campuses, please call (706) 583-2839. To contact the Academic Support Center on the Elbert County Campus, please call (706) 213-2129.

**AMERICANS WITH DISABILITIES ACTS:**

Any student who believes he/she is eligible for accommodations in the classroom and/or during testing due to a documented disability is encouraged to contact the Director of Student Support Services at (706) 355-5081, or the Coordinator of Disability Services at (706) 355-5006, to apply for assistance. It is our goal at Athens Technical College to provide equal access to education for all students.

**CELL PHONES AND ELECTRONIC DEVICES:**

Students are strictly prohibited from using cell phones and personal electronic devices within college-owned/operated facilities without the explicit permission of a faculty or staff member.

**FOOD/DRINKS IN CLASSROOM:**

Food and beverages (other than water) are not allowed in classrooms/lab.

**WARRANTY OF GRADUATES:**

The Department of Technical and Adult Education warrants every graduate of technical programs in which students may earn technical certificates of credit, diplomas, or associate degrees. The warranty guarantees that graduates demonstrate the knowledge and skills and can perform each competency as identified in the industry-validated standards established for every program of study. If one of our graduates educated under a standard program or his/her employer finds that the graduate is deficient in one or more competencies as defined in the course/program standards, Athens Technical College will retrain the employee at no instructional cost to the employee or the employer. The guarantee is in effect for two years after graduation.

**TEACH Act:**

According to the TEACH act of 2002, Athens Technical College is obligated to advise you that instructional material included in this course may be subject to copyright protection. As such, you must not share, duplicate, transmit, or store the material of this course beyond the purpose and time frame explicitly stated in the syllabus of your course. If you are not certain whether a particular piece of material is covered by copyright protection, you should contact your instructor and obtain his/her written clarification. Failing to observe copyright protection is a violation of law.

December 2009

ATHENS TECHNICAL COLLEGE  
AHS 1011  
ACKNOWLEDGEMENT STATEMENT

I, \_\_\_\_\_ have received a copy of the course syllabus, course outline,

**Student's Name (Printed)**

course addendum, and course calendar for AHS 1011. I understand it is my responsibility to obtain any information for those days that I am absent from class and making up any missed assignments. By not signing this form, does not exclude the student from following the policies and procedures outlined in this document or the catalog for Athens Technical College.

\_\_\_\_\_

Student's Signature

\_\_\_\_\_

Date