

**Health Science Career Cluster  
Essentials of Healthcare  
Course Number: 25.44000**

**Course Description:**

Anatomy and Physiology is a vital part of most healthcare post-secondary education programs. The Essentials of Healthcare is a medical-focused anatomy course addressing the physiology of each body system, along with the investigation of common diseases, disorders and emerging diseases. The prevention of disease and the diagnosis and treatment that might be utilized are addressed, along with medical terminology related to each system. This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders. The pre-requisite for this course is Introduction to Healthcare.

**Course Standard 1**

**HS-EHS-1**

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

**Standard: Demonstrate employability skills required by business and industry.**

The following elements should be integrated throughout the content of this course.

**1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.**

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé

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Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

### 1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

### 1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

### 1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers

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Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

### 1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

### 1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

### Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

## Course Standard 2

### HS-EHS-2

**Classify the basic structural and functional organization of the human body and identify body planes, cavities, regions, directional terms, tissues, organs and parts of the cell.**

- 2.1 Define anatomy, physiology, homeostasis, metabolism and cellular respiration.
- 2.2 Identify body planes, cavities, abdominal regions and directional terms. (These will be utilized later in the various anatomy systems).
- 2.3 Describe and demonstrate anatomical position utilizing directional terms.
- 2.4 Classify the basic structural and functional organization of the human body beginning at the cellular level to also include tissues, organs and systems.
- 2.5 Identify the structural components of a cell, and describe the function and relationship of each component.
- 2.6 Explain the process of mitosis and meiosis.
- 2.7 Identify the major types of tissue, and provide examples of each type.
- 2.8 Demonstrate recognition of subjective and objective observations. Document signs and symptoms in the simulated electronic medical record.

## Course Standard 3

### HS-EHS-3

**Analyze the anatomy, physiology and basic pathophysiology of the integumentary system, and evaluate and monitor body temperature.**

- 3.1 Analyze the basic structures and functions of the integumentary system.
- 3.2 Identify and explain medical terms related to the integumentary system, and utilize appropriately when documenting in a simulated electronic medical record.
- 3.3 Research common diseases, disorders and emerging diseases of the integumentary system including the pathophysiology, prevention, diagnosis and treatment that might be utilized in each.
- 3.4 Make observations of the skin to include: color, temperature to touch, scarring, bruising, abrasions, lacerations, or other abnormalities.
- 3.5 Discuss the role of the integumentary system in homeostasis regarding body temperature.
- 3.6 Demonstrate measuring and recording of temperature, and identify abnormal results.

## Course Standard 4

### HS-EHS-4

**Investigate the anatomy, physiology, and basic pathophysiology of the cardiovascular system, and evaluate and monitor blood pressure and pulse.**

- 4.1 Analyze the basic structures and functions of the cardiovascular system.
- 4.2 Identify and explain medical terms related to the cardiovascular system, and utilize when documenting in electronic medical record.
- 4.3 Research common diseases, disorders, and emerging diseases of the cardiovascular system including the pathophysiology, prevention, diagnosis and treatment (including biomedical therapies) that might be utilized in each.
- 4.4 Describe the components of blood, and the functions of each. Research when blood components are prescribed for a patient and why.
- 4.5 Identify and describe the functions of the chambers, valves and associated vessels of the heart.
- 4.6 Distinguish differences in anatomy and pathology of blood vessels to include arteries, arterioles, capillaries, venules, and veins.
- 4.7 Identify and trace the flow of blood through the heart, and provide distinction between the pulmonary and systemic circulation.

- 4.8 Name the parts of the conduction system of the heart, and trace the impulses during initiation and conduction.
- 4.9 Demonstrate measuring and recording blood pressure and pulse, and identify abnormal results.

## Course Standard 5

### HS-EHS-5

**Examine the anatomy, physiology and basic pathophysiology of the respiratory system, and evaluate and monitor respirations.**

- 5.1 Analyze the basic structures and functions of the respiratory system.
- 5.2 Identify and explain medical terms related to the respiratory system, and utilize when documenting in electronic medical record.
- 5.3 Research common diseases, disorders, and emerging diseases of the respiratory system including the pathophysiology, prevention, diagnosis and treatment (including biomedical therapies) that might be utilized in each.
- 5.4 Differentiate between the upper and lower respiratory tract while tracing the pathway of air into and out of the respiratory system.
- 5.5 Explain the physiology of breathing, to include the process of gas exchange.
- 5.6 Analyze the interdependence of the cardiovascular and respiratory systems as they relate to gas exchange, circulation, and the support of vital organs of the human body.
- 5.7 Demonstrate measuring and recording respirations, and identify abnormal results.

## Course Standard 6

### HS-EHS-6

**Evaluate the anatomy, physiology, and basic pathophysiology of the muscular and skeletal systems, and perform technical skills related to the systems.**

- 6.1 Analyze the basic structures and functions of the muscular system.
- 6.2 Analyze the basic structures and functions of the skeletal system, including locating and identifying the bones of the skeletal system and hemopoiesis.
- 6.3 Explain the relationship between the muscular and skeletal systems, and identify their interdependence as they relate to body structure, movement and posture.
- 6.4 Identify and explain medical terms related to the muscular and skeletal systems, and utilize when documenting in the electronic medical record.
- 6.5 Research common diseases, disorders, and emerging disorders of the muscular and skeletal systems including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 6.6 Differentiate between the axial and appendicular skeletons.
- 6.7 Describe the development of the skeletal system.
- 6.8 Locate and identify the types of joints in the skeletal system.
- 6.9 Locate and identify the types of muscles in the muscular system.
- 6.10 Perform range of motion (ROM) for joints such as the shoulder, wrist and ankle.
- 6.11 Differentiate between active and passive range of motion.
- 6.12 Demonstrate proper techniques for ambulation with assistive devices (crutches, cane, walker); and identify limitations and abnormalities.

## Course Standard 7

### HS-EHS-7

**Analyze the anatomy, physiology, and basic pathophysiology of the urinary system, and apply knowledge in performance of technical skills related to the system.**

- 7.1 Analyze the basic structures and functions of the urinary system.
- 7.2 Identify and explain the medical terms related to the urinary system, and utilize when documenting in the electronic medical record.
- 7.3 Describe the structure and function of the nephron, and explain the processes of secretion, filtration and reabsorption including where the processes occur.
- 7.4 Compare and contrast the urinary system of the female with the urinary system of a male.
- 7.5 Research common diseases, disorders, and emerging diseases of the urinary system including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 7.6 Demonstrate measuring intake and output, and identify abnormal results (collection of specimen) and document in an electronic medical record.

## Course Standard 8

### HS-EHS-8

**Analyze the anatomy, physiology, and basic pathophysiology of the reproductive system, and perform technical skills related to the system.**

- 8.1 Analyze the basic structures and functions of the reproductive system.
- 8.2 Identify and explain medical terms related to the reproductive system, and utilize when documenting in the electronic medical record.
- 8.3 Research common diseases, disorders, and emerging diseases of the reproductive system including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 8.4 Compare and contrast the reproductive system of the female with the reproductive system of the male.
- 8.5 Explain the relationship of the endocrine system to the function of the reproductive system.
- 8.6 Demonstrate appropriate technical skills related to the reproductive system for selected pathway.

## Course Standard 9

### HS-EHS-9

**Examine the anatomy, physiology, and basic pathophysiology of the nervous system and special senses, and perform technical skills related to these systems.**

- 9.1 Analyze the basic structures and functions of the nervous system.
- 9.2 Analyze the basic structures and functions of the special sense organs (eye, ear, nose, tongue).
- 9.3 Identify and explain medical terms related to the nervous system and special senses, and utilize when documenting in the electronic medical record.
- 9.4 Identify the components for each type of neuron, and describe the function of each.
- 9.5 Identify and label the cranial nerves, and explain the function of each nerve.
- 9.6 Compare and contrast the sympathetic nervous system with the parasympathetic nervous system.
- 9.7 Identify and label the lobes of the brain, and explain the functions associated with each lobe.
- 9.8 Trace sound waves through the ear.
- 9.9 Explain the physiology of vision.
- 9.10 Research common diseases, disorders, and emerging diseases of the nervous system and special senses including pathophysiology, prevention, diagnosis and treatment that might be utilized.

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- 9.11 Demonstrate technique for administering vision and hearing testing, and identify abnormal results.
- 9.12 Demonstrate technique for cranial nerve evaluation (reflexes), and identify abnormal responses.
- 9.13 Differentiate between pediatric and adult reflexes.

### Course Standard 10

#### HS-EHS-10

##### **Evaluate the anatomy, physiology, and basic pathophysiology of the endocrine system, and perform technical skills related to the system.**

- 10.1 Analyze the basic structures and functions of the endocrine system.
- 10.2 Identify the hormones secreted by each organ of the endocrine system, and describe the role of each hormone.
- 10.3 Identify and explain medical terms related to the endocrine system, and utilize when documenting in the electronic medical record.
- 10.4 Explain the role of the endocrine system in maintaining homeostasis.
- 10.5 Describe the role of the hypothalamus in linking the endocrine system and nervous system.
- 10.6 Research common diseases, disorders, and emerging diseases of the endocrine system including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 10.7 Demonstrate the roles and responsibilities of patient education related to endocrine system (i.e. Diabetic patient education).
- 10.8 Demonstrate technique for utilizing simulated equipment and medical devices related to the endocrine system (Ex. simulated blood glucose monitor).

### Course Standard 11

#### HS-EHS-11

##### **Investigate the anatomy, physiology, and basic pathophysiology of the digestive system, and perform technical skills related to the system.**

- 11.1 Analyze the basic structures and functions of the digestive system.
- 11.2 Identify and explain medical terms related to the digestive system, and utilize when documenting in the electronic medical record.
- 11.3 Compare and contrast chemical and mechanical digestion.
- 11.4 Trace the path of food throughout the digestive pathway.
- 11.5 Identify the gastric secretions and describe the function of each.
- 11.6 Explain the process of absorption.
- 11.7 Research common diseases, disorders, and emerging diseases of the digestive system including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 11.8 Demonstrate measuring height, weight, and Body Mass Index (BMI), and document in electronic medical record.

## Course Standard 12

### HS-EHS-12

**Analyze the anatomy, physiology, and pathophysiology of the lymphatic system, and perform technical skills related to the system.**

- 12.1 Analyze the basic structures and functions of the lymphatic system.
- 12.2 Identify and explain medical terms related to the lymphatic system, and utilize when documenting in the simulated electronic medical record.
- 12.3 Research common diseases, disorders, and emerging diseases of the lymphatic system including pathophysiology, prevention, diagnosis and treatment that might be utilized.
- 12.4 Compare and contrast types of immunity and identify the relationship of the WBC and the lymphatic system.
- 12.5 Explain the relationship between the lymphatic system and the circulatory system.
- 12.6 Trace the flow of lymphatic fluid through the human body.
- 12.7 Demonstrate technical skill related to the lymphatic system of selected pathway.