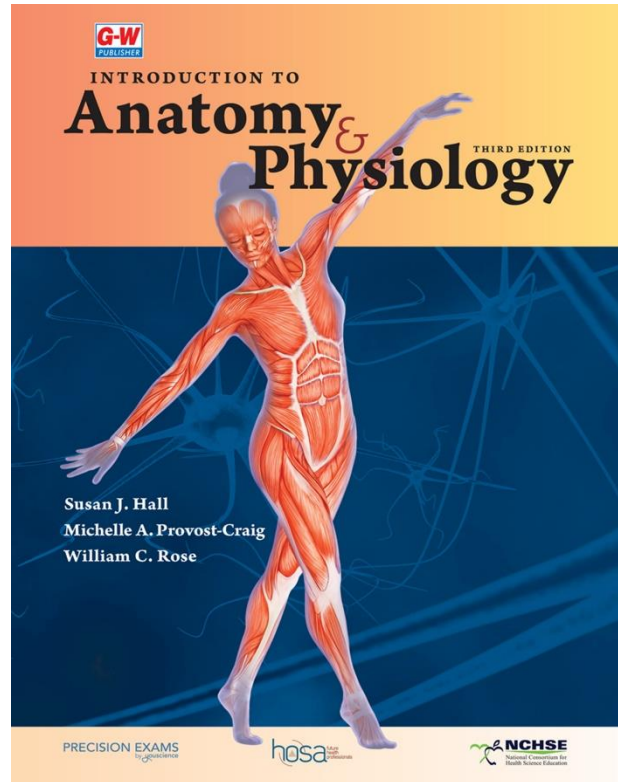




Correlation of
Introduction to Anatomy and Physiology
(Goodheart-Willcox Publisher ©2024)
 to
Alabama Human Anatomy and Physiology Standards (current in 2022)

Introduction to Anatomy and Physiology covers all body systems using a student-friendly writing style that makes complex subjects easier to understand. Written specifically for the high school market, the chapters in this textbook are divided into lessons, providing content in a manageable format for the student. To add realism, clinical case studies and real-world applications enhance student interest and involvement. An abundance of study aids, such as learning objectives, lesson summaries, and extensive assessment opportunities increase students' ability to succeed in this challenging course.



Standards / Objectives / Indicators	Textbook Pages
From Molecules to Organisms: Structures and Processes	
1. Develop and use models and appropriate terminology to identify regions, directions, planes, and cavities in the human body to locate organs and systems.	5-9, 11 (In the Lab #1)
2. Analyze characteristics of tissue types (e.g., epithelial tissue) and construct an explanation of how the chemical and structural organizations of the cells that form these tissues are specialized to conduct the function of that tissue (e.g., lining, protecting).	76-87, 95 (Thinking Critically #1)
3. Obtain and communicate information to explain the integumentary system's structure and function, including layers and accessories of skin and types of membranes.	96-129
a. Analyze the effects of pathological conditions (e.g., burns, skin cancer, bacterial and viral infections, chemical	110-123

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Standards / Objectives / Indicators	Textbook Pages
dermatitis) to determine the body’s attempt to maintain homeostasis.	
4. Use models to identify the structure and function of the skeletal system (e.g., classification of bones by shape, classification of joints and the appendicular and axial skeletons).	130-183; modeling: In the Lab activities on pages 151, 160, 164; Lab Investigations #2 on page 183
a. Obtain and communicate information to demonstrate understanding of the growth and development of the skeletal system (e.g., bone growth and remodeling).	137-138, 140, 141 (Analyze and Apply #2, 4, 5), 180 (Thinking Critically #2)
b. Obtain and communicate information to demonstrate understanding of the pathology of the skeletal system (e.g., types of bone fractures and their treatment, osteoporosis, rickets, other bone diseases).	165-175
5. Develop and use models to illustrate the anatomy of the muscular system, including muscle locations and groups, actions, origins and insertions.	186-188, 201-210; modeling: 191 (In the Lab #1)
a. Plan and conduct investigations to explain the physiology of the muscular system (e.g., muscle contraction/relaxation, muscle fatigue, muscle tone), including pathological conditions (e.g., muscular dystrophy).	188-190, 192-199, 212-220; investigations: 191 (In the Lab #5), 229 (Lab Investigations #4, 6)
6. Obtain, evaluate, and communicate information regarding how the central nervous system and peripheral nervous system interrelate, including how these systems affect all other body systems to maintain homeostasis.	232-233, 245-260
a. Use scientific evidence to evaluate the effects of pathology on the nervous system (e.g., Parkinson’s disease, Alzheimer’s disease, cerebral palsy, head trauma) and argue possible prevention and treatment options.	262-270, 271 (In the Lab #2, 3, 4)
b. Design a medication to treat a disorder associated with neurotransmission, including mode of entry into the body, form of medication, and desired effects.*	271 (In the Lab #1)
7. Use models to determine the relationship between the structures in and functions of the cardiovascular system (e.g., components of blood, blood circulation through the heart and systems of the body, ABO blood groups, anatomy of the heart, types of blood vessels).	394-481; modeling: 429 (Lab Investigations #1)
a. Engage in argument from evidence regarding possible prevention and treatment options related to the pathology of the cardiovascular system (e.g., myocardial infarction, mitral valve prolapse, varicose veins, arteriosclerosis, anemia, high blood pressure).	413-422, 423 (In the Lab #2), 462-472, 473 (In the Lab #2, 3), 481 (Communicating about Anatomy & Physiology #3)
b. Design and carry out an experiment to test various conditions that affect the heart (e.g., heart rate, blood pressure, electrocardiogram [ECG] output).	461 (In the Lab #1, 3, 4), 481 (Lab Investigations #3)
8. Communicate scientific information to explain the relationship between the structures and functions, both mechanical (e.g., chewing, churning in stomach) and chemical (e.g., enzymes, hydrochloric acid [HCl] in stomach), of the digestive system, including the accessory organs (e.g., salivary glands, pancreas).	537-556

Standards / Objectives / Indicators	Textbook Pages
a. Obtain and communicate information to demonstrate an understanding of the disorders of the digestive system (e.g., ulcers, Crohn’s disease, diverticulitis).	557-565
9. Develop and use a model to explain how the organs of the respiratory system function.	366-373; model: 365 (In the Lab #1), 374 (In the Lab #2)
a. Engage in argument from evidence describing how environmental (e.g., cigarette smoke, polluted air) and genetic factors may affect the respiratory system, possibly leading to pathological conditions (e.g., cystic fibrosis).	375-384, 385 (Analyze & Apply #1, 3, 5), 391 (Thinking Critically #5)
10. Obtain, evaluate, and communicate information to differentiate between the male and female reproductive systems, including pathological conditions that affect each.	618-632, 642-651
a. Use models to demonstrate what occurs in fetal development at each stage of pregnancy.	634-639; modeling: 641 (In the Lab #2)
11. Use models to differentiate the structures of the urinary system and to describe their functions.	574-591; modeling: 579 (In the Lab #1), 609 (Lab Investigations #1)
a. Analyze and interpret data related to the urinary system to show the relationship between homeostatic imbalances and disease (e.g., kidney stones, effects of pH imbalances).	593-603
12. Obtain and communicate information to explain the lymphatic organs and their structure and function.	484-493
a. Develop and use a model to explain the body’s lines of defense and immunity.	493 (In the Lab #1), 502 (In the Lab #1), 511 (In the Lab #2)
b. Obtain and communicate information to demonstrate an understanding of the disorders of the immune system (e.g., acquired immunodeficiency syndrome [AIDS], severe combined immunodeficiency [SCID]).	512-519
13. Obtain, evaluate, and communicating information to support the claim that the endocrine glands secrete hormones that help the body maintain homeostasis through feedback loops.	318-337
a. Analyze the effects of pathological conditions (e.g., pituitary dwarfism, Addison’s disease, diabetes mellitus) caused by imbalance of the hormones of the endocrine glands.	338-347