

Medical Terminology – 2 Anatomy and Physiology

The **College Tutor Medical Terminology – Anatomy and Physiology** course provides a solid foundation to understanding the working language of medicine as it pertains to human anatomy and physiology or, as termed in this course, human **Form and Function**.

Course Objectives

- Learn and identify structures of the major organs and organ systems of the human body.
- Learn and understand the relationships between the various levels of organization within each system.
- Apply specific knowledge about the relationship between the structure and function of human organ systems and how they function independently and together to maintain homeostasis.

Course Outline

Introduction to Human Form and Function

Body Structure

Body Organization

Circulatory System

Endocrine System

Gastrointestinal System

Integumentary System

Lymphatic/Immune System

Muscular System

Nervous System

Reproductive System

Respiratory System

Sensory System

Skeletal System

Urinary System

Topic Outlines

Topic 2

Body Structure

Anatomical position
Anatomical planes of the body
Body planes and positions
Body cavities
Divisions of the abdomen
Terms of relation or position
Terms of movement
Anatomy terms

Topic 3

Body Organization

Terms and definitions
Levels of organization
Cells
 Cytoplasm
 Nucleus
 Genetic material
 The gene
 Genetic makeup
Tissues
 Epithelial tissue
 Connective tissue
 Muscle tissue
 Nerve tissue
Organs
Organ systems
Organization and functions of organ systems
 Circulatory system
 Endocrine system
 Gastrointestinal system
 Integumentary system
 Lymphatic and immune systems
 Musculoskeletal system
 Nervous system
 Reproductive system
 Respiratory system
 Sensory system
 Urinary system

Topic 4

Circulatory System

Terms and definitions

The circulatory system

Parts of the cardiovascular system

The heart

Heart chambers

Cardiac muscle

Cardiac circulation

Cardiac cycle

Intrinsic conduction system

Blood vessels

Structure of vessels

The pulmonary and systemic circuits

Functions of the circulatory system

Blood pressure

Regulating the heart rate

Diffusion

Filtration

Osmosis

Capillary exchange in the lungs

Hepatic portal circulation

The lymphatic system

Topic 5

Endocrine System

Terms and definitions

The endocrine system

Glands

Hormones

Homeostatic feedback mechanisms

Parts of the endocrine system

The hypothalamus

Functions of the hypothalamus

The pituitary gland

Anterior lobe of the pituitary gland

Posterior lobe of the pituitary gland

The thyroid gland

The parathyroid glands

The thymus gland

The adrenal glands

Hormones of the adrenal cortex

Hormones of the adrenal medulla

The pineal gland

The gonads

The ovaries and testes

The pancreas

Topic 6

Gastrointestinal System

Terms and definitions

The gastrointestinal system

Parts of the gastrointestinal system

The alimentary canal

The oral cavity

Lips and cheeks

Palate

Tongue

Teeth

Salivary glands

The pharynx

The esophagus

The stomach

The small intestine

The large intestine

The pancreas

The liver

The gall bladder

Topic 7

Integumentary System

Terms and definitions

The integumentary system

Parts of the integumentary system

Skin

Epidermis

Dermis

Accessory structures

Hair

Nails

Sweat glands

Sebaceous glands

Functions of the integumentary system

Protection

Body temperature

Excretion and vitamin D formation

Sensory reception

Free nerve endings

Touch receptors

Temperature detection

Pain receptors

Topic 8

Lymphatic/Immune Systems

Terms and definitions

The lymphatic system

Fluid and protein balance

Digestion

Immunity and spread of infection

Lymphatic circulation

Parts of the lymphatic system

Lymph

Lymphocytes

Lymph vessels

Lymph organs

Lymph nodes

Tonsils

Spleen

Thymus

Functions of the lymphatic system

The immune system

Immune response

Natural immune system

Physical barriers (mucosal immunity)

Chemical defenses

Cellular defenses

Acquired immune system

Cell-mediated immunity

Antibody-mediated immunity

Topic 9

Muscular System

Terms and definitions

The muscular system

Parts of the muscular system

Structure of muscle cells

Tendons

Major muscles of the body

Muscle terminology

Muscles of the head and neck

Muscles of the trunk

Muscles of the shoulders and arms

Muscles of the hips and legs

Functions of the muscular system

Muscle fiber energy

Exercise and muscle fatigue

Movement and muscle arrangement

Muscle tone

Topic 10

Nervous System

Terms and definitions

The nervous system

Parts of the nervous system

Neurons

Types of neurons

Nerves

Central nervous system

The brain

Parts of the brain

The limbic nervous system

The spinal cord

Peripheral nervous system

Spinal nerves

Cranial nerves

Autonomic nervous system

Parasympathetic nervous system

Sympathetic nervous system

Functions of the nervous system

Transmission of nerve impulses

Neurotransmitters

Reflexes

Topic 11

Reproductive System

Terms and definitions

The reproductive system

Development of sex cells

Parts of the male reproductive system

The testes, epididymis, ductus deferens, ejaculatory duct

The urethra

Accessory glands and semen

Male genitalia

Parts of the female reproductive system

The ovaries

Fallopian tubes, uterus, vagina

Female genitalia

Mammary glands

Functions of the reproductive system

Hormones and the male reproductive system

Hormones and the female reproductive system

Fertilization

The development of a human fetus

Topic 12

Respiratory System

Terms and definitions

The respiratory system

Parts of the respiratory system

 The nose and nasal cavity

 The pharynx

 The larynx

 The trachea

 The bronchi

 The lungs

Functions of the respiratory system

 Breathing

 Respiration

 External respiration

 Internal respiration

 Moving air by other means

Topic 13

Sensory System

Terms and definitions

Parts of the sensory system

 Sense organs

Anatomy of the eye

 The sclera

 The choroid

 The lens

 The retina

 Cavities and fluids of the eye

 Accessory structures of the eye

Anatomy of the ear

 The outer ear

 The middle ear

 The inner ear

Anatomy of the senses of smell and taste

Functions of the sensory system

 Sight

 Hearing

 Balance

 Smell

 Taste

 Temperature senses

 Sense of pain

