HI-1014 – Anatomy and Physiology

- **Course Length:** 7 Days

**Course Overview**
In this course the student will learn about systems of the human body and the medical language that is used to describe them. This course will give the student a better understanding and working knowledge of medicine that is required in dictation and translation of medical records used for multiple purposes and job duties in the medical field.

**Course Outline**

- **Chapter 01 - Medical Terminology**
  - Medical Terminology
  - Word Analysis
  - History of Medical Terms
  - The Process
  - The Approach
  - Translating Medical Terms
  - Creating Medical Terms
  - The Root Word
  - Prefixes
  - Suffixes
  - Building the Word
  - Root Word Rules
  - Creating Plural Forms
  - Other Considerations
  - Pronunciation Help
  - Similarity with Terms
  - Abbreviations, Acronyms and Symbols
  - Eponym's
  - Purpose of Eponym's
  - Vocabulary Words & Pronunciation
  - Chapter 01 - Review

- **Chapter 02 - Organization of the Body**
  - Organization of the Body
  - Structural Organization
  - Anatomy of the Cell
  - Inside the Cell
  - The Cell
  - Functions of the Cell
  - Cell Differences
  - Tissue Types
  - Epithelial Tissue
  - Muscle Tissue
Connective Tissue
Nerve Tissue
Organs
Systems of the Body
Body Cavities, Regions and Quadrants
Cavities of the Body
Thoracic Cavity
Abdominal Cavity
Abdominopelvic Regions
The Nine Regions
Abdominopelvic Quadrants
Spinal Column
Anatomy of the Spine
Function of the Spine
Divisions of the Spine
Positional and Directional Terms
Positions & Directions
Directional Views
Planes of the Body
Vocabulary Words & Pronunciation
Chapter 02 - Review

Chapter 03 - Suffixes and Appendices
Suffixes and Appendices
Suffixes
Using Suffixes
Noun Suffixes
Adjective Suffixes
Appendices
Types of Hernias
Amniocentesis
Streptococcus
Staphylococcus
Diplococcus
Erythrocytes
Leukocytes
Granulocytes
Agranulocytes
Thrombocytes
Anemia
Ischemia
Tonsillitis
Acromegaly
Splenomegaly
Leukocytosis
Achondroplasia
Laparoscopy
Vascular System
Adenoids
Vocabulary Words & Pronunciation
Chapter 04 - Prefixes and Appendices
Prefixes and Appendices
The Prefixes
Using Prefixes
Prefixes
Appendices
Adrenal Glands
Antibiotics
Antigens and Antibodies
The Rh Factor
Autoimmune
Congenital Anomaly
Contralateral
Dialysis
Ectopic Pregnancy
Parathyroid Glands
Prolapse
Recombinant DNA
Syndrome
Symbiosis
Symphysis
TURP
Ultrasounds
Vocabulary Words & Pronunciation
Chapter 04 - Review

Chapter 05 - Digestive System
Digestive System
Digestive System Process
The Alimentary Canal
The Digestive Process
Absorption and Metabolism
Elimination Process
Mechanical Process
Chemical Process
The Oral Cavity
The Uvula
The Tonsils
The Tongue
Taste Buds
Anatomy of a Tooth
The Teeth
Surface of the Teeth
Salivary Glands
Pharynx, Esophagus and Stomach
The Pharynx
The Esophagus
The Stomach
Digestion in the Stomach
Small and Large Intestine
The Small Intestine
The Absorption Process
The Large Intestine
The Elimination Process
The Accessory Organs
The Liver
The Liver's Many Roles
Glucose Conversion
The Gallbladder
Bile's Importance
The Pancreas
The Digestive Process Chart
Vocabulary Words & Pronunciation
Chapter 05 - Review

**Chapter 06 - Pathology & Diagnostic Testing of the Digestive System**
Pathology & Diagnostic Testing of the Digestive System
Pathology of the Digestive System
Symptoms
Mouth
Upper GI
Lower GI
Accessory Organs
Laboratory, Clinical & Diagnostic Testing
Laboratory Tests
Clinical Procedures
Diagnostic Tests
Vocabulary Words & Pronunciation
Chapter 06 - Review

**Chapter 07 - Urinary System**
Urinary System
Urinary System Process
The System
Waste Product
The Kidney's Function
Electrolytes
Anatomy of the Urinary System
Kidneys
Parts of the Kidney
Ureters
Urinary Bladder
Urethra
Urine Production
The Vascular System Role
Inside the Kidney
Menstrual Cycle
Ovulation
Fertilization
The Placenta
The Trimesters
Labor
Delivery
Pathology of the Female System
Uterus (2)
Ovaries (2)
Fallopian Tubes (2)
Breast
Pregnancy
Neonatal
Neonatal Apgar Chart
Laboratory, Clinical Procedures & Diagnostic Testing
Laboratory Tests
Hysterectomy
Gynecological Procedures
Pregnancy Procedures
Radiology
Vocabulary Words & Pronunciation
Chapter 08 - Review

Chapter 09 - Male Reproductive System
Male Reproductive System
Anatomy of the Male System
Male Reproductive Anatomy
Male Anatomy
The Testes and Scrotum
The Tubules
Epididymis
Vas Deferens
Seminal Vesicles
Prostate Gland (1)
Cowper Gland
The Penis
Hormones
The Reproductive Process
The Sperm
The Sperms Journey
Sperm Passage Chart
Multiple Fertilization
Pathology of the Male System
Testes
Prostate Gland (2)
Penis
STD
Laboratory, Clinical Procedures & Diagnostic Testing
Laboratory Testing
Chapter 10 - Nervous System

Nervous System
Structure of the Nervous System
Nervous System
The Nervous System
Functions of the Nervous System
Nerve Receptors
Divisions of the Nervous System
Sensory vs. Motor
Cranial Nerves
Voluntary vs. Involuntary
Autonomic Nerves
Sympathetic & Parasympathetic
The Human Nervous System
Transmitting Signals
Anatomy of the Nerve Cell
The Axon
Neurons
At the Synapse
Neurotransmitters
Nerves
Glial Cells
Nerve Pathway
The Brain and Spinal Cord
Anatomy of the Brain
The Brain
Parts of the Brain
The Lobes
Functions of the Brain
Additional Structures
The Spinal Cord
The Meninges
What's with the Matter?
What is CSF?
Laboratory, Clinical Procedures & Diagnostic Testing
Laboratory Test
Diagnostic Testing
Vocabulary Words & Pronunciation
Chapter 10 - Review

Chapter 11 - Cardiovascular System

Cardiovascular System
The Blood Vessels
Arteries
Arterioles
Capillaries
Venules
Veins
Pulmonary Artery
Pulmonary Vein
Aorta
Anatomy of the Heart
The Normal Heart Anatomy
Characteristics of the Heart
Right Side of Heart
Left Side of Heart
Heart Valves
Heart Septum
Layers of the Heart
Systemic Circulation
Blood Circulation
Circulation Pattern
Flow Circulation
Pulse Points of the Body
Physiology of the Heart
Heart Facts
Heartbeat
Conduction System
Blood Pressure
Pathology of the Heart
Diseases of the Heart
Congenital Heart Disease
Diseases of the Vessels
Hypertension
What Causes Hypertension
Symptoms of Hypertension
High Risk for Hypertension
Labs, Clinical/Surgical Procedures & Diagnostic Testing
Lab tests
Clinical Procedures
Surgical Procedures
Diagnostic Treatments
Vocabulary Words & Pronunciation
Chapter 11 - Review

Chapter 12 - Respiratory System
Respiratory System
Anatomy of the Respiratory System
Nose and Sinuses
Pharynx
Larynx
Trachea
Bronchial Tubes
Chapter 12 - Review

Chapter 13 - Blood System

Blood System
Composition and Formation of Blood Cells
Function of Blood
Characteristics of Blood
Blood Cell Formation
Stages of Blood Development
Erythrocytes
Breakdown of RBC's
Hemoglobin Breakdown
Leukocytes
Polymorphonuclear Cells
Neutrophils
Eosinophils
Basophils
Mononuclear Lymphocytes
Monocytes
Thrombocytes
Plasma
Albumin
Globulins
Blood Types and Groups
Blood Types & Donors
Rh Factors
Blood Clotting
Pathology Conditions, Lab Testing & Clinical Procedures
Anemia
RBC Disorders
Chapter 14 - Lymphatic and Immune Systems

Lymphatic and Immune Systems
The Lymph System Process
The Lymphatic System
Lymph's Main Purpose
Anatomy of the Lymph System
Relationship to the Circulatory System
Life of the Lymphocyte
Lymphatic Vessels
Drainage Ducts
Lymph Nodes
Location of the Nodes
Structure of the Lymph Node
Spleen
Thymus
Understanding the Immune System
Immune System's Purpose
Immunity
Acquired Immunity
Immediate Immunity
Immune Responses
B Cells
T Cells
Immunology Cell Types
Dendritic Cells
Pathology, Labs, Clinical & Diagnostic Testing
Pathology Conditions
Malignant Pathology
Laboratory Tests
Vocabulary Words & Pronunciation
Chapter 14 - Review

Chapter 15 - Musculoskeletal System

Musculoskeletal System
Anatomy and Function of the Musculoskeletal System
Introduction (1)
Facts
Professionals
Main Functions
Bones
Muscles
Joints
Formation and Structure of the Bones
Formation
Development
Bone Growth
Structure
Anatomy of the Bone
Anatomy of a Long Bone
Inside the Bone
Processes
Depressions
Cranial Bones
Anatomy of the Skull Bones
Internal Cranial Bones
Facial Bones
Vertebral Column
Axial vs. Appendicular
Thoracic Bones
Upper Extremity Bones
Anatomy of the Arm Bones
Pelvic Bones
Pelvic Differences
Lower Extremity Bones
Anatomy of the Leg Bones
Types and Actions of Joints
Types of Joints
Joint Movements
Anatomy of a Joint
Joint Movement
Types of Joints Found
Types and Actions of Muscles
Introduction (2)
Striated Muscle
Smooth Muscle
Cardiac Muscle
Understanding Movement
Origin & Insertion
Type of Movements
Pathology of the Musculoskeletal System
Pathology of Bones
Osteoporosis
Bone Fractures
Typical Fractures
Pathology of Joints
Arthritis
Pathology of Muscles
Laboratory, Surgical Procedures & Diagnostic Studies
Laboratory Testing
Surgical Procedures
Diagnostic Studies
Chapter 16 - Integumentary System

Integumentary System
Function of the Integumentary System
Introduction
First
Second
Third
Fourth
Skin Facts
Anatomy of the Skin
The Layers
Epidermis
Epidermal Layers
Skin Coloring
Dermis
Hypodermis
Accessory Organs and Glands
Hair
Nails
Nail Anatomy
Sebaceous Glands
Sweat Glands
Eccine Glands
Apocrine Glands
Pathology of the Skin, Laboratory & Clinical Procedures
Lesions
Types of Lesions
Skin Conditions
Acne
Burns
Skin Neoplasm's
Malignant Lesions
The ABCD's of Skin Cancer
Laboratory Testing
Clinical Procedures
Vocabulary Words & Pronunciation
Chapter 16 - Review

Chapter 17 - Sensory Organs

Sensory Organs
Anatomy and Physiology of the Eye
Anatomy of the Eye
Diagram of the Eye
Front of the Eye
Pupil
Conjunctive
Cornea
Sclera
Choroid
Iris
Ciliary Body
Anterior Chamber
Lens
Back of the Eye
Vitreous Chamber
Retina
Optic Nerve & Disc
Macula
Fovea Centralis
Choroid
Lacrimal Gland
The Lacrimal Gland
Visual Pathway
Visual Path Chart
Refraction Errors
Pathology, Clinical Procedures & Treatment of the Eye
Pathology of the Eye
Clinical Procedures (1)
Treatment
Anatomy and Physiology of the Ear
Anatomy of the Ear
The Ear
External Ear
Middle Ear
Anatomy of the Middle Ear
Internal Ear
Anatomy of the Inner Ear
Pathway of Sound
Pathway of Sound Chart
Pathology & Clinical Procedures of the Ear
Pathology of the Ear
Clinical Procedures (2)
Vocabulary Words & Pronunciation
Chapter 17 - Review

Chapter 18 - Endocrine System
Endocrine System
Introduction
Function of the Endocrine System
Major Glands
Hormones
Purpose of Hormones
Gland Locations and Functions
Anatomy of the Thyroid
Function of the Thyroid
Anatomy of the Parathyroid Gland
Function of the Parathyroid Gland
Chapter 19 – Oncology

Oncology
Characteristics of Tumors (1)
Cancer Facts
Characteristics of Tumors (2)
Benign Tumors
Malignant Tumors
Hyperplasia
Dysplasia
Benign vs. Malignant
Causes of Cancer
Deoxyribonucleic Acid (DNA)
DNA Mutation
Environment
Hereditary
Classifications, Grading and Staging of Tumors
About Cancers
Carcinomas
Sarcomas
Mixed Tissue
About Grading & Staging
Tumor Grading
Chapter 20 - Radiology and Nuclear Medicine

Radiology and Nuclear Medicine
History of Radiology & Nuclear Medicine
Founder of Radiology
Dental X-rays
Eradication Discovery
Contrast Discovery
X-ray Portrait Studios
Early Hand Held Devices
Danger of Radiation
Historical Time Line
Characteristics of Radiology
What is Radiology?
X-ray Characteristics
Risks of Overexposure
Characteristics of Nuclear Medicine
What is Nuclear Medicine?
Radioactivity & Radionuclides
In Vivo & In Vitro
Nuclear Studies
Types of Diagnostic Techniques
X-Rays
Contrast X-rays
CT Scans
Fluoroscopy
Interventional Radiology
Ultrasound
MRI
Vocabulary Words & Pronunciation
Chapter 20 - Review

Chapter 21 – Pharmacology

Pharmacology
Introduction to Pharmacology
Defining Pharmacology?
Professionals
Where do drugs come from?
Homeopathic Medicine
Subspecialties of Pharmacology
Drug Names and Standards
Name that Drug
Chemical Name
Generic Name
Brand Name
Standards
Drug References
Drug Dangers
Patients Rights
Types of Drug Administration
Oral Administration
Sublingual Administration
Rectal Administration
Parenteral Administration
Inhalation
Topical
Understanding Drug Actions
Receptors
Antagonistic & Synergistic
Tolerance vs. Addiction
Drug Toxicity
Drug Classifications
Drug Schedule
Analgesics
Anesthetics
Antibiotics & Antivirals
Anticoagulants
Anticonvulsants
Antidepressants
Antidiabetics
Antihistamines
Antosteoporosis
Cardiovascular
Endocrine
Gastrointestinal
Respiratory
Sedatives
Stimulants
Tranquilizers
Vocabulary Words & Pronunciation
Chapter 21 - Review

Chapter 22 – Psychiatry
Psychiatry
Introduction to Psych
Introduction
Psychosis
Professionals
Clinical Symptoms
Psychiatric Disorders
Sigmund Freud's Theory
Personality Traits vs. Disorders
Personality Disorders
Anxiety Disorders
Delirium & Dementia
Dissociative Disorder
Eating Disorders
Mood Disorders
Schizophrenia
Types of Schizophrenia
Sexual & Gender Identity Disorders
Somatoform Disorders
Substance-Related Disorders
Therapy
Psychotherapy
Electroconvulsive Therapy
Drug Therapy
Vocabulary Words & Pronunciation
Chapter 22 - Review
Course Closure

Total Duration: 19h 33m