

Health Science Core II—Course Code: 995103	Anatomy, Physiology & Disease: An Interactive Journey for Health Professionals
	Page
<b>UNIT 11: Skeletal System</b>	
<b>1. Compare the structures and functions of the skeletal system with its relationship to movement.</b>	pp. 126-127
a. Identify the axial and appendicular bones.	p. 141, p. 155
b. Identify the parts of a bone.	p. 141
• Diaphysis	p. 126, p. 127
• Endosteum	p. 126, p. 129
• Epiphysis	p. 126, p. 127
• Medullary canal	p. 127
• Periosteum	p. 126, p. 127
• Red marrow	p. 126, p. 127
• Yellow marrow	p. 127
c. Explain the functions of the skeletal system.	p. 107, p. 125, p. 141
• Framework	p. 107, p. 125
• Protection	p. 107, p. 125
• Levers	p. 107, p. 125
• Production of blood cells	p. 127
• Storage	p. 107, p. 125
d. Identify the types of joints and their related movements.	p. 134, p. 158
• Diarthrosis or synovial	p. 99, p. 104
• Amphiarthrosis	NA
• Synarthrosis	NA
<b>2. Discuss diseases and disorders of the skeletal system and related signs, symptoms, treatment, and prevention methods.</b>	p. 139, p. 158
a. Identify the general signs, symptoms, treatment, and prevention methods associated with skeletal diseases, disorders, and injuries.	p. 139, p. 158
• Bursitis	p. 139, p. 158
• Osteomyelitis	p. 139, p. 158
• Osteoporosis	p. 139, p. 158
• Osteoarthritis	p. 139, p. 158
• Rheumatoid arthritis	p. 139, p. 158
• Sprain	p. 139, p. 158
• Ruptured disk	p. 139, p. 158
• Dislocation	p. 139, p. 158
• Spinal curvatures: scoliosis, lordosis, and kyphosis	p. 139, p. 158

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
open, simple or closed, depressed, green stick, impacted, spiral	p. 139, p. 158
<b>3. Research the impact of emerging technology on the skeletal system.</b>	p. 136, p. 565
<b>UNIT 12: Muscular System</b>	
<b>muscular system with its relationship to movement.</b>	p. 107, pp. 159-160, p. 172
a. Identify the three types of muscle.	p. 160
• Cardiac	p. 160
• Visceral/smooth	p. 160
• Skeletal	p. 160
b. Define the characteristics of skeletal muscle.	p. 99
• Excitability	p. 222
• Contractibility	p. 168
• Extensibility	p. 170
• Elasticity	pp. 160-161
c. Identify major skeletal muscles.	pp. 162-166
• Biceps brachii	p. 168
• Deltoid	p. 168, p. 170
• Gastrocnemius	p. 168
• Gluteus maximus	p. 168
• Intercostals	p. 168
• Latissimus dorsi	p. 168
• Pectoralis major	p. 168
• Quadriceps femoris	p. 168
• Rectus abdominis	p. 168
• Sartorius	p. 794
• Sternocleidomastoid	p. 168
• Tibialis anterior	p. 168
• Trapezius	p. 168
• Triceps brachii	p. 168
d. Explain the function of the muscles.	p. 139, p. 160
• Movement	p. 160
• Produce heat and energy	p. 160
• Maintain Posture	p. 160
• Protect internal organs	p. 160

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
e. Demonstrate active/passive range of motion, including adduction, abduction, flexion, extension, rotation, and circumduction.	p. 137, p. 160, p. 170
<b>2. Discuss diseases, disorders, and injury of the muscular system and related signs, symptoms, and treatment methods.</b>	p. 162, pp. 165-166, p. 168
a. Identify the general signs, symptoms, treatment, and prevention methods associated with muscular diseases and disorders.	p. 174
• Fibromyalgia	NA
• Muscle spasms	p. 162, p. 176
• Muscular dystrophy	p. 176
• Myasthenia gravis	p. 160, p. 175, p. 180
• Strain	p. 165
<b>3. Research the impact of emerging technology on the muscular system.</b>	p. 105
<b>UNIT 13: Cardiovascular System</b>	
<b>1. Identify and discuss the structures and functions of the cardiovascular system and their role in maintaining homeostasis.</b>	p. 112, p. 323, p. 366
a. Identify the components of blood and their respective functions.	pp. 340-345
• Plasma	pp. 340-344
• Erythrocytes	pp. 340-344
• Hemoglobin	pp. 340-344
• Leukocytes	pp. 340-344
• Thrombocytes	pp. 340-344
b. Identify the type of blood vessels and the action of each.	p. 347
• Aorta	328, 347
• Arteries	105, 323
• Arterioles	p. 324
• Capillaries	p. 323
• Inferior vena cava	p. 327
• Pulmonary artery	p. 327
• Pulmonary veins	p. 327
• Superior vena cava	p. 327

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
• Veins	p. 323
• Venules	p. 324
c. Identify the anatomy of the heart.	p. 326
• Layers: endocardium, myocardium, pericardium/epicardium	p. 326
• Structures: septum, right/left atriums, right/left ventricles, tricuspid valve, pulmonary valve, bicuspid/mitral valve, aortic valve	p. 326
d. Describe the electrical conduction pathway.	p. 336, p. 339
• SA node	p. 336
• AV node	p. 336
• Bundle of HIS	p. 324
• Right and left bundle branches	p. 337
• Purkinje Fibers	p. 337
e. Describe the pathway of pulmonary and systemic circulation.	p. 324
f. Define systole and diastole.	p. 324, p. 327
<b>2. Discuss diseases and disorders of the cardiovascular system and related signs, symptoms, treatment, and prevention methods.</b>	
a. Identify the general signs, symptoms, treatment, and prevention methods associated with cardiovascular diseases and disorders.	p. 181, p. 191, p. 214, p. 496
• Arteriosclerosis	p. 324, p. 333
• Atherosclerosis	p. 324, p. 333
• Congestive heart failure	p. 331
• Hypertension	p. 333
• Iron deficiency anemia	p. 346
• Leukemia	p. 683
• Myocardial infarction	p. 332
• Sickle cell anemia	p. 346
<b>3. Research the impact of emerging technology on the cardiovascular system.</b>	p. 366
<b>UNIT 14: Respiratory System</b>	
<b>1. Describe the structures and functions of the respiratory system.</b>	p. 113, p. 367
a. Define inspiration and expiration.	p. 369, p. 378

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
b. Identify the structures of the respiratory system and their respective functions.	p. 367, p. 372, p. 381
• Alveoli	p. 368
• Bronchi	p. 381
• Bronchioles	p. 368
• Epiglottis	p. 368
• Larynx	p. 377
• Lungs	p. 396
• Nasal cavity	p. 298, p. 311
• Nasal septum	p. 372
• Nose	p. 372
• Pharynx	p. 376
• Pleura	p. 367
• Sinuses	p. 376
• Trachea	p. 381
c. Differentiate among internal, external, and cellular respiration.	p. 57, p. 370
<b>2. Discuss diseases and disorders of the respiratory system and related signs, symptoms, and treatment methods.</b>	
	p. 378, p. 387
a. Identify the general signs, symptoms, treatment, and prevention methods associated with respiratory diseases and disorders.	p. 378, p. 387
• Asthma	p. 368, p. 386
• Bronchitis	p. 368, p. 388
• COPD	p. 368, p. 388
• Covid 19	p. 18
• Emphysema	p. 368, p. 388
• Influenza	p. 87, p. 102, p. 378, p. 390
• Lung cancer	p. 684
• Pneumonia	p. 378, p. 385
• Sleep apnea	p. 276, p. 380
• Tuberculosis	p. 368, p. 375, p. 388
<b>3. Research the impact of emerging technology on the respiratory system.</b>	
	p. 565, p. 586
<b>UNIT 15: Digestive System</b>	

Health Science Core II—Course Code: 995103	Anatomy, Physiology & Disease: An Interactive Journey for Health Professionals
	Page
<b>1. Describe the structures and functions of the digestive system.</b>	p. 114
a. Describe the structures comprising the alimentary canal and their respective functions regarding the digestive process (pathway of food, digestion, nutrient absorption).	pp. 439-440, p. 448, p. 451, p. 458
• Mouth: teeth, tongue, hard palate, soft palate	p. 441
• Pharynx	p. 376, p. 447
• Esophagus	p. 447
• Cardiac/esophageal sphincter	p. 447
• Stomach (include rugae)	p. 449
• Pyloric sphincter	p. 440, p. 449
• Small intestine (include villi)	p. 454
o Duodenum	p. 440, p. 448
o Ileum	p. 455
o Jejunum	p. 440, p. 455
• Large intestine	p. 458
o Cecum	p. 440, p. 458
o Ascending colon	pp. 458-460
o Transverse colon	pp. 458-460
o Descending colon	pp. 458-460
o Sigmoid colon	pp. 458-460
• Rectum	pp. 458-459
• Anus	pp. 458-459
b. Describe the accessory structures of the digestive system and their respective functions regarding the digestive process (pathway of food, digestion, nutrient absorption).	p. 442, 461-463
• Salivary glands	p. 442
• Pancreas	p. 281, p. 463
• Liver	p. 461
• Appendix	p. 458
• Gallbladder	p. 463
<b>2. Discuss diseases and disorders of the digestive system and related signs, symptoms, treatment, and prevention methods.</b>	p. 460, p. 476

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
a. Identify the general signs, symptoms, treatment, and prevention methods associated with diseases and disorders of the digestive system.	p. 460, p. 476
• Appendicitis	p. 440, pp. 458-460
• Cholecystitis	p. 440
• Cirrhosis	p. 464, p. 469
• Diverticulitis	p. 460
• Gastric ulcer	p. 453
• GERD	p. 390, p. 452
• Hepatitis type B (HBV)	p. 102, p. 287
• Pancreatitis	p. 440
• Ulcerative colitis	p. 472
<b>3. Research the impact of emerging technology on the digestive system.</b>	p. 565
<b>UNIT 16: Urinary System</b>	
<b>1. Explain the structures and functions of the urinary system as they relate to the formation, composition, and elimination of urine.</b>	p. 478
a. Identify urinary system structures and their respective functions.	p. 478
• Bladder (include rugae)	p. 499
• Bowman’s capsule	p. 483
• Cortex	p. 254
• Glomerulus	p. 481
• Hilum	p. 396, p. 480
• Kidneys	p. 480
• Medulla	p. 479
• Nephrons	p. 482, p. 484
• Renal pelvis	p. 480
• Ureters	p. 479, p. 485
• Urethra	p. 479, p. 485
• Urinary meatus	p. 499
<b>2. Discuss diseases and disorders of the urinary system and related causes, signs, symptoms, treatment, and prevention methods.</b>	p. 485, p. 496

Health Science Core II—Course Code: 995103	Anatomy, Physiology & Disease: An Interactive Journey for Health Professionals
	Page
a. Identify the general causes, signs, symptoms, treatment, and prevention methods associated with diseases of the urinary system.	p. 485, p. 496
• Cystitis	p. 500
• Glomerulonephritis	p. 490, p. 492, p. 502
• Pyelonephritis	p. 500
• Renal calculus	p. 485, p. 487, p. 492
• Renal failure	p. 485, p. 487, p. 492
• Uremia	p. 689
• Urethritis	p. 665
b. Define disorders of the urinary system.	
• Albuminuria	p. 794
• Anuria	p. 501
• Dysuria	p. 501
• Hematuria	pp. 500-501
• Incontinence	p. 500
• Nocturia	pp. 500-501
• Oliguria	p. 501
• Polyuria	p. 501
• Proteinuria	p. 501
• Pyuria	p. 501
• Retention	p. 502
<b>3. Research the impact of emerging technology on the urinary system.</b>	p. 565
<b>UNIT 17: Lymphatic System</b>	
<b>1. Explain the structures and functions of the lymphatic system.</b>	pp. 407-408
a. Identify structures of the lymphatic system and their respective functions.	p. 408
• Tonsils	pp. 410-412
• Spleen	pp. 410-413
• Lymph nodes	pp. 409-412
• Thymus	pp. 410-414
<b>2. Discuss diseases and disorders of the lymphatic system and related causes, signs, symptoms, treatment, and prevention methods.</b>	p. 413

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
treatment, and prevention methods associated with diseases and disorders of the lymphatic system.	p. 413
• Adenitis	NA
• Hodgkin’s disease	p. 413
• Splenomegaly	p. 360
• Tonsillitis	p. 432
<b>3. Research the impact of emerging technology on the lymphatic system.</b>	p. 565
<b>UNIT 18: Nervous System</b>	
<b>1. Describe the structures and functions of the nervous system.</b>	pp. 216-217
a. Identify the major structures of the nervous system and their respective functions.	pp. 216-217
• Cerebellum	p. 239, p. 245, p. 252
• Cerebrum	p. 238, p. 242
• Midbrain: pons, medulla oblongata	NA
• Diencephalon: thalamus, hypothalamus	p. 273
• Spinal cord	p. 228, p. 229
• Meninges: dura mater, arachnoid membrane, pia mater	p. 228
• Ventricles	p. 245
• Cerebral spinal fluid	p. 245
b. Describe the divisions of the nervous system.	pp. 216-215, 255
• Central nervous system	NA
• Peripheral nervous system	NA
• Sympathetic	p. 255
• Parasympathetic	p. 256
c. Identify the structures of a neuron and the conduction process of a nerve impulse.	p. 222
• Dendrites	p. 226
• Axon	p. 226
• Myelin sheath	p. 226
• Synapse	pp. 225-227
• Neurotransmitters	p. 226

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
<b>2. Discuss diseases and disorders of the nervous system and related causes, signs, symptoms, treatment, and prevention methods.</b>	p. 260
a. Identify the general causes, signs, symptoms, treatment, and prevention methods associated with diseases and disorders of the nervous system.	p. 260
• Alzheimer’s disease	NA
• Amyotrophic lateral sclerosis	p. 253, p. 259
• Cerebral palsy	p. 253, p. 254
• Cerebrovascular accident	p. 241
• Dementia	p. 259
• Epilepsy	p. 222
• Meningitis	p. 240, p. 260
• Multiple sclerosis	p. 685
• Parkinson’s disease	NA
• Shingles	p. 192, p. 195, p. 234
• Traumatic Brain Injury/Concussion	p. 241
<b>3. Research the impact of emerging technology on the nervous system.</b>	p. 565
<b>UNIT 19: Endocrine System</b>	
<b>1. Identify the structures and functions of the endocrine system.</b>	pp. 266-267
a. Differentiate between endocrine and exocrine system and their respective functions. (see table below)	p. 267
Pituitary (Anterior Lobe) ACTH-adrenocorticotrophic Stimulates growth and secretion of the cortex of the adrenal gland	p. 273
TSH-thyrotropin Stimulates growth and secretion of the thyroid gland	p. 273
GH-somatotropin Growth hormone; stimulates normal body growth	p. 276, p. 277
Pituitary (Posterior Lobe) ADH-vasopressin Antidiuretic hormone; promotes reabsorption of water in kidneys, constricts blood vessels	p. 276, p. 277

Health Science Core II—Course Code: 995103	Anatomy, Physiology & Disease: An Interactive Journey for Health Professionals
	Page
metabolic rate; stimulate physical and mental growth; regulate metabolism of carbohydrates, fats, and proteins	p. 277
Adrenal (Cortex) Glucocorticoids:	p. 283
• Cortisol-hydrocortisone	p. 285
• Cortisone	p. 794
carbohydrates; increase amount of glucose in blood; provide resistance to stress; depress immune response (anti-inflammatory)	p. 285
Gonadocorticoids:	NA
• Estrogens	NA
• Androgens	NA
Act as sex hormones	p. 286
• Stimulate female sexual characteristics	p. 286
• Stimulate male sexual characteristics	p. 286
Activates sympathetic nervous system; acts in times of stress to increase cardiac output and increase blood pressure	p. 281
Norepinephrine Activates body in stress situations	
Pancreas	p. 281
Insulin	p. 281
<b>2. Discuss diseases and disorders of the endocrine system and related causes, signs, symptoms, treatment, and prevention methods.</b>	p. 294
treatment, and prevention methods associated with diseases and disorders of the endocrine system.	p. 277, p. 289
• Acromegaly	p. 277, p. 289
• Cushing’s syndrome	p. 677
• Diabetes mellitus (Type 1 and 2)	p. 678
• Dwarfism	p. 149, p. 276
• Giantism	p. 149, p. 276
• Graves’ disease	p. 279
• Hyperthyroidism	p. 681
• Hypothyroidism	p. 682
<b>3. Research the impact of emerging technology on the endocrine system.</b>	p. 565

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
<b>UNIT 20: Sensory Organs</b>	
1. Identify the basic structures and functions associated with the sensory organs.	p. 250, p. 600
a. Identify sensory organs' structures and describe their respective functions.	pp. 296-306, 372, 442
• Eye:	pp. 297-300
o Aqueous humor	pp. 297-300
o Choroid coat	pp. 297-300
o Conjunctiva	pp. 297-300
o Cornea	pp. 297-300
o Iris	pp. 297-300
o Lacrimal glands	pp. 297-300
o Lens	pp. 297-300
o Pupil	pp. 297-300
o Retina	pp. 297-300
o Sclera	pp. 297-300
o Vitreous Humor	pp. 297-300
• Ear:	p. 296, p. 306
o Auditory canal	p. 296, p. 306
o Cochlea	p. 296, p. 306
o Eustachian Tube	p. 296, p. 306
o Organ of Corti	p. 296, p. 306
o Ossicles	p. 296, p. 306
o Pinna/Auricle	p. 296, p. 306
o Semicircular canal	p. 296, p. 306
o Tympanic membrane	p. 296, p. 306
• Tongue:	p. 442
o Papillae	p. 442
• Nose:	p. 372
o Olfactory receptors	p. 372
<b>organs.</b>	p. 297, p. 303, pp. 309-310
a. Identify the general causes, signs, symptoms, treatment, and prevention methods associated with diseases and disorders of the sensory organs.	p. 297, p. 303, pp. 309-310
• Amblyopia	p. 297
• Astigmatism	p. 297
• Cataract	p. 297
• Conjunctivitis	p. 297

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
• Glaucoma	p. 297
• Hearing loss (conductive, sensory)	pp. 309-310
• Meniere’s disease	pp. 309-310
• Otitis externa	pp. 309-310
• Otitis media	pp. 309-310
• Otosclerosis	pp. 309-310
• Strabismus	p. 297, p. 303
<b>3. Research the impact of emerging technology on the sensory organs.</b>	p. 565
<b>UNIT 21: Reproductive System</b>	
1. Discuss the structures and functions of the male and female reproductive systems.	p. 118, p. 508
female reproductive system and their respective functions.	p. 508, p. 514, p. 526
• Male:	p. 526
o Cowper’s gland	NA
o Ejaculatory ducts	p. 527
o Epididymis	p. 527
o Penis	p. 527
o Prostate gland	p. 526
o Scrotum	p. 526
o Seminal vesicles	p. 526
o Testes	p. 526
o Urethra	p. 526
o Vas deferens	p. 527
• Female:	p. 514
o Bartholin’s glands	NA
o Breasts	p. 523
o Fallopian tubes	p. 514, p. 520
o Ovaries	p. 514
o Perineum	p. 517
o Uterus: endometrium	p. 514
o Vagina	p. 517
o Vulva: mons pubis, labia majora, labia minora	p. 514, p. 517
<b>2. Discuss diseases and disorders of the reproductive system and related signs, symptoms, treatment, and prevention methods.</b>	pp. 531-532

<b>Health Science Core II—Course Code: 995103</b>	<b>Anatomy, Physiology &amp; Disease: An Interactive Journey for Health Professionals</b>
	<b>Page</b>
a. Identify the general signs, symptoms, treatment, and prevention methods associated with diseases and disorders of the reproductive systems.	pp. 531-532
• Breast cancer	p. 536
• Cervical cancer	p. 516
• Endometriosis	p. 516
• Epididymitis	NA
• Orchitis	NA
• Ovarian cancer	p. 539
• Pelvic inflammatory disease	p. 666
• Premenstrual syndrome	p. 686
• Prostate cancer	p. 539
• Prostatic hypertrophy	NA
• Testicular cancer	p. 528, p. 706
• Uterine cancer	p. 539, p. 706
b. Identify the general signs, symptoms, treatment, and prevention methods associated with sexually transmitted infections (STIs).	p. 601
• Human Immunodeficiency Virus	p. 425
• Chlamydia	p. 540
• Gonorrhea	p. 540
• Herpes	p. 540
• Human Papillomavirus	p. 540
• Pubic lice	p. 202
• Syphilis	p. 601
• Trichomoniasis	p. 540
<b>3. Research the impact of emerging technology on the reproductive system.</b>	p. 565