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Utah State Office of Education – Core Alignment Correlation to *Introduction to Health Science: Pathways to Your Future* © 2016

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Core Subject Area: CTE Health Science

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Course: Introduction to Health Science (36010000090)	
STANDARD / OBJECTIVE	PAGES / DESIGNATED SECTIONS / URLs
STANDA	RD 1
Students will explore the fundar	nental aspects of Healthcare.
OBJECTIVE 1: Compare and contrast the history of	5–9, 10 (Recall Your Reading), 17–20, 34 (#17)
medicine with current trends.	
a. Create a historical timeline.	
b. Identify current trends in healthcare.	
OBJECTIVE 2: Investigate the various aspects of health	122–125, 142 (#20 and #21), 143 (#33)
insurance.	
a. Describe health insurance (premium, copay,	
deductible, etc.)	
b. Compare and contrast government funded healthcare	
programs and private health insurance (Medicaid,	
Medicare, etc.).	
OBJECTIVE 3: Summarize basic professional standards	47–49, 178, 179, 194, 197, 216 (#18 and #22), 333,
and characteristics of healthcare workers.	334, 369–371, 376 (#26), 487–489, 509, 572, 643
a. Demonstrate proper hygiene of a healthcare worker.	
b. Describe proper dress of a healthcare worker.	
c. Discuss proper behavior in a healthcare setting	
(honesty, empathy, dependable, life-long learner, and	
teamwork).	
OBJECTIVE 4: Discuss desirable attitudes and behaviors	88, 127, 227–229, 385–391, 412 (#21 and #22)
when providing healthcare to diverse patients.	
a. Describe how cultural differences impact the delivery	
of healthcare.	
b. Describe the importance of treating patients as	
individuals (i.e., gender, race, age, religion, etc.).	42 47 65 (446) 400 400 246 (420) 224 242
OBJECTIVE 5: Compare and contrast the health science	42–47, 65 (#16), 180–189, 216 (#20), 334–343,
career pathways.	375 (#16), 376 (#17), 478–487, 523 (#28), 630–
a. Explore careers associated with the Diagnostic Services Pathway.	637, 665 (#34)
Audiologist Control of the	
Clinical Lab Technician/Technologist	
Diagnostic Medical Sonographer	
Electrocardiographic (ECG) Technician	
□Optician/Ophthalmologist/Ophthalmic	
Assistant/Ophthalmic Technologist/Optometrist	



? Pathologist	
Radiologic Technologist/Radiologist	
☑ Speech-Language Pathologist	
b. Explore careers associated with the Therapeutic	
Services Pathway.	
2 Acupuncturist	
② Anesthesiologist/Assistant/Anesthesia	
Technologist/Technician	
② Art/Music/Dance Therapist(s)	
2 Athletic Trainer	
② Certified Nursing Assistant/Licensed Practical	
Nurse/Registered Nurse	
Chiropractor/Chiropractic Assistant	
② Dental Assistant/Hygienist	
② EMT/Paramedic	
Home Health Aide	
2 Medical Assistant	
2 Nurse Practitioner	
② Occupational Therapist/Assistant	
Pharmacist/Pharmacy Technician	
Recreation Therapist	
② Respiratory Therapist	
② Veterinarian/Veterinarian Assistant/Veterinarian	
Technician	
c. Explore careers associated with the Health Informatics	
Pathway.	
2 Admitting Clerk	
Clinical Account Manager	
2 Clinical Account Technician	
2 Ethicist	
Health Educator	
Healthcare Administrator	
② Medical Coder	
Medical Information Technologist	
Medical Transcriptionist	
☑ Risk Manager	
d. Explore careers associated with the Support Services	
Pathway.	
② Biomedical/Clinical Engineer/Technician	
2 Central Service Manager/Technician	
2 Dietetic Technician	
2 Environmental Health Advocate	
Prood Safety Specialist	
2 Industrial Hygienist	
2 Interpreter	



Mortician/ Funeral Director	
2 Social Worker	
Transport Technician	
e. Explore careers associated with the Biotechnology	
Research and Development Pathway.	
Biomedical Chemist	
Biomedical Manufacturing Technician	
☐ Cell Biologist	
© Crime Scene Investigator	
☐ Forensic Pathologist	
_	
Microbiologist Discourse and the Microbiologist Relative to	
Pharmaceutical/Clinical Project Manager	
Pharmacologist	
Quality Control Technician	
OBJECTIVE 6: Demonstrate knowledge of medical law	128–129, 130, 132, 133, 216 (#21), 230, 266, 270–
and medical ethics.	273, 268, 286 (#23), 345, 436 (#19), 677
a. Differentiate between medical law and medical ethics.	
b. Describe scope of practice for healthcare workers.	
c. Explain the importance of expressed consent and	
implied consent.	
d. Define legal implications and how they relate to healthcare (battery, invasion of privacy, and	
malpractice/negligence).	
e. Describe HIPPA and how it relates to a patient's right	
to privacy.	
OBJECTIVE 7: Identify how math is used in the medical	97–98, 239–246, 240 (Figure 7.20), 258 (#s 23, 24,
field.	25, 26, 27), 399–404, 413 (#s 26, 27, 28)
a. Demonstrate use of the 24-hour clock/military time.	
b. Demonstrate competency in basic math skills as they	
relate to healthcare (averages, ratios, fractions,	
percentages, addition, subtraction, multiplication, and	
division).	
c. Demonstrate the ability to convert units of height,	
weight, and temperature.	
d. Demonstrate the ability to use the metric system.	
OBJECTIVE 8: Describe anatomical position and the role it	159, 161–162, 166
plays in human anatomy.	
a. Define anatomical position.	
b. Identify body planes and directional terms (sagittal,	
mid-sagittal, coronal/frontal, transverse/horizontal,	
superior, inferior, anterior, posterior, medial, lateral,	
proximal, distal, superficial, and deep).	
STANDARD 2 – SUP	
Students will explore aspects of the k	
SKELETAL SYSTEM ORIECTIVE 1. Identify the basic functions of the skeletal	304, 305, 306, 309, 310
OBJECTIVE 1: Identify the basic functions of the skeletal system.	
a. Describe how the skeletal system provides	
a. Describe now the skeletal system provides	



structure/support.	
b. Describe how the skeletal system provides means for	
muscle attachment and movement.	
c. Describe how the skeletal system stores minerals (i.e.,	
calcium).	
d. Describe hematopoiesis (blood cell production) and	
where it occurs.	
OBJECTIVE 2: Explore the basic structure of the skeleton.	306, 308, 312–314
a. Identify the following bones.	
Cranium (frontal, parietal, occipital, temporal, maxillae,	
mandible)	
② Vertebrae (cervical, thoracic, lumbar, sacrum, coccyx).	
2 Ribs	
2 Sternum	
2 Humerous	
2 Radius	
2 Ulna	
2 Carpels	
Metacarpels	
Phalanges (fingers)	
Pelvis	
② Femur	
2 Patella	
2 Tibia	
2 Fibula	
2 Tarsals	
2 Metatarsals	
Phalanges (toes)	
b. Describe articulation and identify the location of joints	
(i.e, suture, shoulder, elbow, wrist, hip, knee, etc.).	
c. Describe the function of ligaments.	
OBJECTIVE 3: Describe the diseases and disorders	307, 311–312, 314–315, 326 (#18)
associated with the skeletal system.	
a. Compare and contrast open and closed fractures.	
b. Describe the causes, signs and symptoms, and	
treatment of scoliosis.	
c. Describe the causes, signs and symptoms, and	
treatment of osteoarthritis.	
d. Describe the causes, signs and symptoms, and	
treatment of osteoporosis.	
e. Describe the causes, signs and symptoms, and	
treatment of sprain. MUSCULAR SYSTEM	319, 322
OBJECTIVE 4: Describe the basic functions of the	319, 322
muscular system.	
a. Define thermogenesis.	
b. Identify how muscles produce movement (i.e., muscle	
and a series of the series of	I



	T
contractions).	
c. Explain how muscles maintain posture.	
d. Explain how muscles protect internal organs.	
e. Explain how smooth muscle controls the volume of our	
hollow body organs.	
OBJECTIVE 5: Explore the basic structure of the skeletal	306, 316, 317–318
system.	
a. Identify the location of the following muscles.	
Biceps brachii	
☑ triceps brachii	
2 trapezius	
2 deltoid	
2 diaphragm	
2 pectoralis major	
2 latissimus dorsi	
2 rectus abdominus	
2 gastrocnemius	
2 quadriceps	
2 gluteus maximus.	
b. Differentiate between cardiac, smooth, and skeletal	
muscles (appearance, location, and control).	
c. Describe the function of tendons.	
OBJECTIVE 6: Describe the diseases and disorders	319–320
associated with the muscular system.	
a. Describe the causes, signs and symptoms, and	
treatment of tendonitis.	
b. Describe the causes, signs and symptoms, and	
treatment of muscular dystrophy.	
c. Describe the causes, signs and symptoms, and	
treatment of strain.	
d. Describe the causes, signs and symptoms, and	
treatment of spasm (i.e., Charlie horse).	
INTEGUMENTARY SYSTEM	294–295, 298, 300, 302
OBJECTIVE 7: Describe the basic functions of the	
integumentary system.	
a. Identify how skin protects against infection.	
b. Explain that the skin produces vitamin D.	
c. Explain how the skin functions as a sensory organ.	
d. Explain how skin regulates body temperature.	
e. Identify how the skin protects against UV light.	205, 202
OBJECTIVE 8: Identify the layers of the skin and	295–302
appendages. a. Describe the layers of the skin (epidermis, dermis, and	
subcutaneous layer).	
b. Describe the appendages of the skin (nails, sweat	
(sudorfierous) glands, oil (sebaceous) glands, and hair).	
OBJECTIVE 9: Describe the diseases and disorders	296–297, 299, 327 (#23)
	,,, \!!,



associated with the integumentary system.	
a. Describe the causes, signs and symptoms, and	
treatment of acne.	
b. Describe the causes, signs and symptoms, and	
treatment of fungal infections (i.e., athletes foot,	
ringworm, and jock itch).	
c. Describe the causes, signs and symptoms, treatment,	
prevention, and detection (ABCDE method) of skin cancer	
(i.e., basal cell carcinoma, squamous cell carcinoma, and	
melanoma).	
STANDARD 3 – TRANSPO	DRTATION SYSTEMS
Students will explore aspects of the body	y systems related to transportation.
CIRCULATORY SYSTEM	442–443
OBJECTIVE 1: Describe the basic functions of the	
circulatory system.	
a. Identify how the circulatory system transports the	
following nutrients and wastes.	
b. Identify how the circulatory system transports heat.	
c. Identify how the circulatory system transports oxygen	
to body cells and carbon dioxide away from body cells.	
d. Identify how the circulatory system transports	
hormones.	
e. Identify how the circulatory system transports	
antibodies.	
OBJECTIVE 2: Identify the basic structures and functions	443–451
of the heart, blood vessels, and blood.	
a. Describe the basic structures and functions of the	
heart (right atrium, right ventricle, left atrium, left	
ventricle, and valves)	
b. Explain the flow of blood through the heart.	
c. Compare and contrast the differences between	
arteries, capillaries, and veins.	
d. Identify the components of blood and the function of each component (red blood cells, white blood cells,	
platelets, and plasma).	
OBJECTIVE 3: Describe the diseases and disorders	443, 450, 452, 471 (#24)
associated with the circulatory system.	443, 430, 432, 471 (#24)
a. Describe the causes, signs and symptoms, and	
treatment of anemia.	
b. Describe the causes, signs and symptoms, and	
treatment of heart attack.	
c. Describe the causes, signs and symptoms, and	
treatment of high blood pressure.	
d. Describe the causes, signs and symptoms, and	
treatment of athrosclerosis.	
RESPIRATORY SYSTEM	461, 463
OBJECTIVE 4: Identify the basic functions of the	
respiratory system.	
a. Describe how the nose warms, moistens, and filters air.	
b. Describe how sound production is related to the	



respiratory system.	
c. Describe the process of carbon dioxide-oxygen gas	
exchange.	
OBJECTIVE 5: Identify basic structures of the respiratory	460–463
system.	
a. Describe the structures and functions of the nose and	
nasal cavity (structure: bony framework, cartilage, skin,	
mucous membrane, cilia, nostrils, and septum, function:	
warms, moistens, and filters air).	
b. Identify the location and function of the following	
structures.	
② pharynx	
② epiglottis	
2 larynx 2 trachea	
☑ bronchi	
2 bronchioles	
2 lungs	
2 alveoli	
OBJECTIVE 6: Describe the diseases and disorders	461–463
associated with the respiratory system.	
a. Describe the causes, signs and symptoms, and	
treatment of the common cold.	
b. Describe the causes, signs and symptoms, and	
treatment of pneumonia.	
c. Describe the causes, signs and symptoms, and	
treatment of lung cancer.	
d. Describe the causes, signs and symptoms, and	
treatment of asthma.	
e. Describe the causes, signs and symptoms, and treatment of bronchitis.	
f. Describe the causes, signs and symptoms, and	
treatment of tuberculosis.	
g. Describe the causes, signs and symptoms, and	
treatment of influenza.	
h. Describe the causes, signs and symptoms, and	
treatment of emphysema.	
IMMUNE SYSTEM	452–453, 454–456, 457–458
OBJECTIVE 7: Describe the basic function and structures	432 433, 434 430, 437 430
of the immune system.	
a. Identify the basic function of the immune system	
(provides protection against diseases).	
b. Identify the basic structures of the immune system	
(tonsils, lymph nodes, and white blood cells).	
OBJECTIVE 8: Describe the diseases and disorders	454, 457
associated with the immune system.	
a. Describe the causes, signs and symptoms, and	
treatment of the human immunodeficiency virus (HIV).	
b. Describe the causes, signs and symptoms, and	



treatment of acquired immune deficiency syndrome (AIDS).	
c. Describe the causes, signs and symptoms, and	
treatment of lupus.	
d. Describe the causes, signs and symptoms, and	
treatment of mononucleosis.	
REGULATORY	CVCTEMC
Students will explore aspects of the bo	
NERVOUS SYSTEM	724–725, 740–742, 764 (#15)
OBJECTIVE 1: Identify the basic functions of the nervous	724-723, 740-742, 704 (#13)
system.	
a. Describe how the sensory nerves detect stimuli	
(pressure, temperature, taste, smell, light, etc.) and send	
the message in the form of an impulse to the control	
centers (spinal cord/brain).	
b. Describe how the nervous system receives and	
interprets incoming nerve impulses and determines	
appropriate responses.	
c. Explain how the motor nerves carry out the response	
of the control center (spinal cord/brain).	
OBJECTIVE 2: Identify the basic structures and their	725–726, 727–732, 733–734, 725, 740, 764 (#16)
functions.	725-720, 727-732, 733-734, 723, 740, 704 (#10)
a. Describe the structures of the brain and their functions	
(cerebrum, cerebellum, and brain stem).	
b. Describe the structure and function of the spinal cord.	
-	
c. Describe the location and function of cerebrospinal fluid.	
d. Describe the location and function meninges.	
e. Describe the structure (cell body, dendrites, and axon)	
and function of sensory and motor nerves.	
OBJECTIVE 3: Describe the diseases and disorders	366–367, 452, 734
associated with the nervous system.	
a. Describe the causes, signs and symptoms, and	
treatment of the meningitis.	
b. Describe the causes, signs and symptoms, and	
treatment of epilepsy.	
c. Describe the causes, signs and symptoms, and	
treatment of concussion.	
d. Describe the causes, signs and symptoms, and	
treatment of stroke.	
SPECIAL SENSES	743–747, 752–754, 764 (#17)
OBJECTIVE 4: Describe the special senses.	
a. Identify the sense of smell (chemoreceptors).	
b. Identify the sense of taste (chemoreceptors).	
c. Identify the sense of hearing (mechanoreceptors).	
d. Identify the sense of vision (photoreceptors).	
e. Identify the sense of touch (mechanoreceptors).	
OBJECTIVE 5: Identify the basic structures of the special	743–744, 744–745, 745–746, 746–747, 752–753
sense organs and their functions.	
a. Describe the structure and function of the ear (outer	



ear (auricle and external auditory canal), middle ear	
(tympanic membrane, Eustachian tube (auditory tube)	
and auditory ossicles), and inner ear (cochlea)).	
b. Describe the structure and function of the eye (eyelid,	
conjunctiva, sclera, cornea, iris, pupil, lens, and retina).	
c. Describe the structure and function of the nose	
(olfactory receptor).	
d. Describe the structure and function of the	
mouth/tongue (taste buds).	
e. Describe the structure and function of the skin (nerve	
endings).	
OBJECTIVE 6: Describe the diseases and disorders of the	749–750, 753, 765 (#22)
special senses.	
a. Describe the causes, signs and symptoms, and	
treatment of pinkeye (conjunctivitis).	
b. Describe the causes, signs and symptoms, and	
treatment of middle ear infection (otitis media).	
c. Describe the causes, signs and symptoms, and	
treatment of deafness.	
d. Describe the causes, signs and symptoms, and	
treatment of near-sightedness (myopia).	
e. Describe the causes, signs and symptoms, and	
treatment of far-sightedness (hyperopia).	
f. Describe the causes, signs and symptoms, and	
treatment of presbyopia.	
ENDOCRINE SYSTEM	755–758
OBJECTIVE 7: Identify the basic functions of the	
endocrine system.	
a. Describe how the endocrine system regulates body	
processes.	
b. Describe how the endocrine system regulates growth,	
development, and maturation.	
OBJECTIVE 8: Identify the location of the following glands	758–760, 764 (#19)
and the function of the hormones they release.	
a. Pituitary gland—located in the brain, releases growth	
hormone (GH) and oxytocin.	
b. Thyroid gland—located in the neck, releases thyroxine.	
c. Pancreas—located behind the stomach, releases	
insulin and glucagon.	
d. Adrenal glands—located on top of the kidneys,	
releases cortisol, adrenaline, and noradrenaline.	
OBJECTIVE 9: Describe the diseases and disorders of the	405, 760
endocrine system.	
a. Describe the causes, signs and symptoms, and	
treatment of type 1diabetes (juvenile diabetes).	
b. Describe the causes, signs and symptoms, and	
treatment of type 2 diabetes (diabetes mellitus).	
c. Describe the causes, signs and symptoms, and	
treatment of gigantism.	
d. Describe the causes, signs and symptoms, and	



	T
treatment of dwarfism.	
e. Describe the causes, signs and symptoms, and	
treatment of hypothyroidism.	
f. Describe the causes, signs and symptoms, and	
treatment of hyperthyroidism.	
STANDARD 4 – MAINT	ENANCE SYSTEMS
Students will explore aspects of the boo	dy systems related to maintenance.
DIGESTIVE SYSTEM	595–600, 623 (#23)
OBJECTIVE 1: Describe the basic functions of the	
digestive system.	
a. Define ingestion.	
b. Define digestion (chemical and mechanical).	
c. Define absorption.	
d. Define excretion.	
OBJECTIVE 2: Describe the location and basic functions of	595–600
the digestive organs.	333 000
a. Mouth—chemical and mechanical digestion.	
b. Pharynx (throat)—passageway.	
c. Esophagus (between pharynx and stomach)—	
passageway.	
d. Stomach (between pharynx and small intestine)—	
storage, absorption, chemical and mechanical digestion.	
e. Small intestines (between stomach and large	
intestines)—chemical digestion and absorption.	
f. Large intestines (between small intestine and	
rectum)—absorption of water and formation of feces.	
g. Rectum (between large intestine and anus)—	
temporary storage for solid waste (feces).	
h. Anus (final portion of the digestive track)—excretion of	
feces.	500
OBJECTIVE 3: Describe the diseases and disorders of the	599
digestive system	
 a. Describe the causes, signs and symptoms, and treatment of Crohn's disease. 	
b. Describe the causes, signs and symptoms, and	
treatment of celiac disease.	
c. Describe the causes, signs and symptoms, and	
treatment of appendicitis.	
d. Describe the causes, signs and symptoms, and	
treatment of inguinal hernia.	CO2 COE C22 (#24)
URINARY SYSTEM	603–605, 623 (#24)
OBJECTIVE 4: Describe the basic functions of the urinary	
system.	
a. Explain how the urinary system regulates the volume	
and composition of blood.	
b. Explain how the urinary system excretes body wastes.	CO2 CO5
OBJECTIVE 5: Identify the basic organs, location, and	603–605
functions of the urinary system.	
a. Kidneys—located in the upper left and right quadrant.	
The functions are to filter blood and produce urine.	



b. Ureters—tubes located between the kidney and the	
bladder. The function is to transport urine from the	
kidney to the bladder.	
c. Bladder—located in the pelvic cavity. The function is to	
store urine.	
OBJECTIVE 6: Describe the diseases and disorders of the	602, 605
urinary system.	
a. Describe the causes, signs and symptoms, and	
treatment of kidney stones.	
b. Describe the causes, signs and symptoms, and	
treatment of kidney failure.	
c. Describe the causes, signs and symptoms, and	
treatment of bladder infection (UTI).	
REPRODUCTIV	E SYSTEM
Students will explore aspects of the	
OBJECTIVE 1: Describe the functions of the reproductive	607–608, 608–610
system.	
a. Explain the production of gametes (egg and sperm) by	
the gonads.	
b. Explain the production of hormones to help in the	
maturation process.	
OBJECTIVE 2: Describe the structures, location, and	608–610
function of the female reproductive system.	
a. Ovaries—located in the pelvic cavity. Produces and	
releases the egg (ovulation) and releases estrogen.	
b. Uterine tubes—located in the pelvic cavity. Tube for	
the eggs to travel to the uterus. Most common site for	
fertilization of the egg.	
c. Uterus—located in the pelvic cavity. Consists of the	
fundus, body, and cervix. Site for menstruation	
(endometrium), development of the embryo, and	
expulsion of the fetus.	
d. Vagina—located in the pelvic cavity. Passage way for	
menstruation, female copulatory organ, birth canal.	
OBJECTIVE 3: Describe the structures, location, and the	607–608
function of the male reproductive system.	
a. Testes—located in the scrotum. Produces sperm and	
testosterone.	
b. Scrotum—located inferior to the penis. Encloses and	
protects the testes and maintains an optimal	
temperature for sperm production.	
c. Epididymis—located superior/posterior to the testes.	
Storage and maturation of sperm.	
d. Vas deferens—located between the epididymis and	
the urethra. Transportation of sperm.	
e. Prostate gland—located inferior to the bladder and	
around the urethra. Secrets alkaline fluid.	
f. Urethra—located inferior to the bladder surrounded by	
the penis. Passageway for sperm and urine.	
OBJECTIVE 4: Describe the diseases and disorders of the	12, 418–419, 459, 605, 610, 623 (#22), 686



reproductive system.	
a. Describe the causes, signs and symptoms, and	
treatment of premenstrual syndrome (PMS).	
b. Describe the causes, signs and symptoms, and	
treatment of endometriosis.	
c. Describe the causes, signs and symptoms, and	
treatment of breast cancer.	
d. Describe the causes, signs and symptoms, and	
treatment of cervical cancer.	
e. Describe the causes, signs and symptoms, and	
treatment of benign prostatic hypertrophy.	
f. Describe the causes, signs and symptoms, and	
treatment of testicular cancer.	
g. Describe the causes, signs and symptoms, and	
treatment of sexually transmitted infections (STI/STD).	