Academic Credit
for
Career and Technical Education Coursework

Procedural Recommendations for Application Submissions to the Department of Education and State Board of Education

Nevada Department of Education
Office of Career Readiness, Adult Learning, and Education Options
755 N. Roop Street, Suite 201
Carson City, NV 89701
(775) 687-7300

July 2022

Curriculum Alignment Document

Directions: The curriculum must demonstrate how the CTE coursework aligns to the Nevada Academic Content Standards.

1) Identify the proposed academic credit (English*, Math, Science, or Health)

   *Contact the CTE office if you have questions regarding English credit.

2) Provide the name of the academic course (e.g., Life Science; Physical Science)

3) Provide the name of the CTE course(s) (e.g., Principles of Agriculture, Food, and Natural Resources and Animal Science; Biomedical I, Biomedical II, and Biomedical III)

Proposed Academic Credit (Check One) Math ☐ Science ☒ Health ☐

Name of Academic Course: Third Year Science Course

Name of CTE Course(s): Principles of Health Science and Sports Medicine

Total Number of Academic Credits: 1.0

Total Number of CTE Credits: 1.0

Classroom Academic Teacher Name: Teven Chandler and Sarah Dryer

Classroom Academic Teacher Subject: Science/Biology

Classroom CTE Teacher Name: Hilary Kohntopp and Brenna Merrill

Classroom CTE Teacher Subject: Health Science

Science Standards Alignment Document

Insert the CTE Performance Indicator(s) in the right-side column which will meet the Science standard indicated in the left-side column. **Below is an example from the Principles of Agriculture, Food, and Natural Resources course.**

Science: HS. Life Sciences – HS. Human Sustainability	***CTE Performance Indicators (including text description)***
HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.	*2.1.4 Discuss the role of modern agriculture in basic human needs by identifying products used to provide food, clothing, and shelter (e.g., world food security) (Chapter 1: The Science of Agriculture, World Food Security assignment)*

Please enter appropriate/applicable alignments in the table below.

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS. Physical Sciences (PS)	
HS. Structure and Properties of Matter	
HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.	See Attachment
HS-PS1-3 Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.	
HS-PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.	
HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.	
HS. Chemical Reactions	
HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.	See Attachment
HS-PS1-4 Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.	See Attachment

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-PS1-5 Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	See Attachment
HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.	See Attachment
HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	
HS. Forces and Interactions	
HS-PS2-1 Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.	
HS-PS2-2 Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.	
HS-PS2-3 Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.	
HS-PS2-4 Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.	
HS-PS2-5 Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.	See Attachment
HS. Energy	
HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.	
HS-PS3-2 Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).	See Attachment

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.	
HS-PS3-4 Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	See Attachment
HS-PS3-5 Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.	
HS. Waves and Electromagnetic Radiation	
HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	
HS-PS4-2 Evaluate questions about the advantages of using a digital transmission and storage of information.	See Attachment
HS-PS4-3 Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	See Attachment
HS-PS4-4 Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	See Attachment
HS-PS4-5 Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	See Attachment
HS. Life Sciences (LS)	
HS. Structures and Function	
HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	See Attachment

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	See Attachment
HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	See Attachment
HS. Matter and Energy in Organisms and Ecosystems	
HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	See Attachment
HS-LS1-6 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.	See Attachment
HS-LS1-7 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.	See Attachment
HS-LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	
HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	See Attachment
HS-LS2-5 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	
HS. Interdependent Relationships in Ecosystems	
HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.	
HS-LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.	

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-LS2-6 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	See Attachment
HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	See Attachment
HS-LS2-8 Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.	
HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.	
HS. Inheritance and Variation of Traits	
HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	See Attachment
HS-LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	See Attachment
HS-LS3-2 Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.	See Attachment
HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	See Attachment
HS. Natural Selection and Evolution	
HS-LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.	

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-LS4-2 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.	
HS-LS4-3 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	See Attachment
HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.	See Attachment
HS-LS4-5 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.	See Attachment
HS. Earth and Space Science (ESS) **HS. Space Systems**	
HS-ESS1-1 Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.	
HS-ESS1-2 Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.	
HS-ESS1-3 Communicate scientific ideas about the way stars, over their life cycle, produce elements.	
HS-ESS1-4 Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.	
HS. History of Earth	
HS-ESS1-5 Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.	

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-ESS1-6 Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.	
HS-ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.	
HS. Earth's Systems	
HS-ESS2-2 Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	
HS-ESS2-3 Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.	
HS-ESS2-5 Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.	
HS-ESS2-6 Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.	
HS-ESS2-7 Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.	
HS. Weather and Climate	
HS-ESS2-4 Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.	
HS-ESS3-5 Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.	
HS. Human Sustainability	
HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.	See Attachment

Nevada Academic Science Standards (DCI)	CTE Performance Indicators (including text description)
HS-ESS3-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.	
HS-ESS3-3 Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.	See Attachment
HS-ESS3-4 Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.	
HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.	See Attachment
HS. Engineering Design (EST)	
HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	See Attachment
HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	See Attachment
HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.	See Attachment
HS-ETS1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.	See Attachment
Total number of unique Science Standards addressed:	3
Total number of unique CTE Standards aligned:	12

Nevada Academic Content Standards - Science	Principles of Health Science Performance Standards	Principles of Health Science Link to evidence .	Sports Medicine Performance Standards	Sports Medicine Link to Evidence
		Please review entire Google Folder of Information for Simmers Text at this link. All of the following links are within this folder. For all standards, review Simmers TOC for appropriate chapters. You can access the full text https://k12.cengage.com/portal/Account/LogOn?DistrictLoginCode=540I with the login teacher01@elkodhohealthsci.com password Cengage1!		Please review Table of Contents for entire textbook here.
HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 7.1- Identify procedures mandated by local, state, and federal guidelines	Capter 14 in Simmers DHO Health Science - Promotion of Safety Chapter 15 in Simmers DHO Health Science - Infection Control		
HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties	7.1- Identify procedures mandated by local, state, and federal guidelines 7.3- Understand emergency management and preparedness	Chapter 14 in Simmers DHO Health Science - Promotion of Safety Chapter 15 in Simmers DHO Health Science - Infection Control		

HS-PS1-3 Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.	2.1- Demonstrate knowledge of human anatomy and physiology			
HS-PS1-4 Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy	2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice 5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness. 8.1- Demonstrate healthcare skills and knowledge	14 in Simmers DHO Health Science - Promotion of Safety and Chapter 15 in Simmers DHO Health Science - Infection Control	4.1 Demonstrate Management of Acute Injuries, 5.3 Demonstrate management strategies for injury, 6.1 Understand therapeutic modalities	See Chapter 17 Therapeutic Modalities objectives, student activities, definitions
HS-PS1-5 Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment	Simmers Chapter 7 Anatomy and Physiology and Chapter 12 Computers and Techology in Health Care	5.3 Demonstrate management strategies for injury 6.1 Understand therapeutic modalities	See Chapter 17 Therapeutic Modalities objectives, student activities, definitions
HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment	Chapter 7 Anatomy and Physiology and Chapter 12 Computers and Technology in Health Care.		
HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.				

HS-PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay				
Science: HS-Motion and Stability: Forces and Interactions				
HS-PS2-1 Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.				
HS-PS2-2 Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.				
HS-PS2-3 Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision				
HS-PS2-3 Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision				

HS-PS2-4 Use mathematical representations of Newton's Law of Gravitational and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.				
HS-PS2-5 Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current	2.2- Relate principles of anatomy and physiology to diagnostics and treatment	Research project on different types of therapies. Simmers Chapter 7 Anatomy and Physiology, Chapter 12 Computers and Tehcnology in Healht Care		
HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness. 8.1- Demonstrate healthcare skills and knowledge	HOSA - teamwork events - medical innovations, pharmaceuticals, . Simmers Chapter 12. Pharmaceuticals and treatment devices.		
Science: HS-Energy				
HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.				

HS-PS3-2 Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment	Vital Signs, See appropriate table of contents for Simmers TExt. Digestive System, Respiratory System, Temperatures. Simmers Chapter 7 and 16 . See additional assignments for Chapter 7 and 16		
HS-PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.				
HS-PS3-4 Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 7.3- Understand emergency management and preparedness 8.1- Demonstrate healthcare skills and knowledge	HOSA - Emergency Preparedness events, Health Professions events. Hypothermia, First Aid, Fever/Heat Stroke, homeostasis - Simmers Chapter 7, 12, 14, 15, 16, 17		
HS-PS3-5 Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.				
Science: HS-Waves and Their Applications in Technologies on Information Transfer				

HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.				
HS-PS4-2 Evaluate questions about the advantages of using a digital transmission and storage of information.	4.1- Perform duties according to regulations, policies, laws, and legislated rights of clients	HOSA - Health Informatics - https://hosa.org/guidelines/ HIPAA, Medical Informatics. Simmers Chapter 5 Legal and Ethical Reponsiblities, Chpater 12 - Computers and Technology in Health Care		
HS-PS4-3 Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 8.1- Demonstrate healthcare skills and knowledge 8.2- Utilize appropriate assessment tools to evaluate individual situations	Medical Diagnostics and Treatments. Simmers Chapter 7, 12,and 13.		
HS-PS4-4 Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 8.1- Demonstrate healthcare skills and knowledge 8.2- Utilize appropriate assessment tools to evaluate individual situations	Medical Diagnostics and Treatments. Simmers Chapter 7, 12, and 13.		

HS-PS4-5 Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 8.1- Demonstrate healthcare skills and knowledge 8.2- Utilize appropriate assessment tools to evaluate individual situations	Medical Diagnostics and Treatments. Simmers Chapter 7, 12,and 13.		
Science: HS-From Molecules to Organisms: Structures and Processes				
HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	7.1- Identify procedures mandated by local, state, and federal guidelines 7.2- Explain principles of infection control	Microbiology - Infetion controls - Simmers Chapter 15 Infection Control. Anatomy and physiology cellular to systems in organisms - Chapter 7. See additional assigments for Chapter 7		
HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	7.1- Identify procedures mandated by local, state, and federal guidelines 7.2- Explain principles of infection control	Microbiology - Infetion controls - Simmers Chapter 15 Infection Control. Anatomy and physiology cellular to systems in organisms - Chapter 7. See additional assignments for Chapter 7	5.2 Explore tissue response to injury	See Chapter 9 Injuries to the Tissues objectives, activity, muscular and skeletal models
HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness 7.2- Explain principles of infection control	Vital signs, nutrition/wellness, vaccinations. Simmers Chapter 1 History and Trends, Chapter 7 Anatomy and physiology, Chapter 15 Infection Control, Chapter 16 Vital Signs, See additional assignments for Chapter 1, 7 , and 16	5.1 Indentify common injuries, 5.2 Explore tissue response to injury, 5.3 Demonstrate management strategies for injury	See Chapter 11 Taping and Wrapping objectives and student activities for demonstrating taping. See Chapter 15 Injuries related to the pelvis and lower extremities

HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice	Cellular and Reproductive System - Chapter 7, Anatomy and Physiology		
HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice 5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness	Nutrition and Wellness Chapter 11, Vitamins and Nutrients		
HS-LS1-6 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice 5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness	Nutrition and Wellness Chapter 11, Vitamins and Nutrients		

HS-LS1-7 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice 5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness	Nutrition and Wellness Chapter 11, Vitamins and Nutrients, Digestion and Absorbtion		
Science: HS-Ecosystems: Interactions, Energy, and Dynamics				
HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.				
HS-LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government) 7.2- Explain principles of infection control	Digestion, absorbption, Metabolism, gut biome. Chapter 11		

HS-LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.				
HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	2.1- Demonstrate knowledge of human anatomy and physiology 2.3- Apply mathematics in healthcare practice 7.2- Explain principles of infection control 8.2- Utilize appropriate assessment tools to evaluate individual situations	Chapter 7 Anatomy and Physiology, Chapter 13 - Medical Math, Chapter 15 - Infection Control, Patient records - Chapter 12		
HS-LS2-5 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.				
HS-LS2-6 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 7.2- Explain principles of infection control	HOSA - Teamwork Events/Medical Innovation - Chapter 4 in Simmers Personal and Professional Qualities of a Heath Team Member Chapter 20 Lab Assistant Skills Chapter 21 Medical Assistant Skills		
HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	7.3- Understand emergency management and preparedness	Emergency Response Scene evaluation (site safety), Emergency Medical Simulation set up on Campus. HOSA Emergency Preparedness Events		

HS-LS2-8 Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.				
Science: HS-Heredity: Inheritance and Variation of Traits				
HS-LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice 7.2- Explain principles of infection control	Reproductive System - Chapter 7, Diseases and Treatments - Chapter 7, History and Trends in Healthcare - Chapter 1, Chapter 8 - Human Growth and Development, Chapter 9 Geriatric Care, Chapter 10 - Cultural Diversity		
HS-LS3-2 Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment 2.3- Apply mathematics in healthcare practice	Reproductive System - Chapter 7, Diseases and Treatments - Chapter 7, Chapter 8 - Human Growth and Development, Chapter 9 Geriatric Care, Chapter 10 - Cultural Diversity		

HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population	2.3- Apply mathematics in healthcare practice	Blood Typing Lab. HOSA - Clincial Labratory Skills, Medical Math. Reproductive System - Chapter 7, Diseases and Treatments - Chapter 7, History and Trends in Healthcare - Chapter 1, Health Care Systems - Chapter 2, Chapter 8 - Human Growth and Development, Chapter 9 Geriatric Care, Chapter 10 - Cultural Diversity		
Science: HS-Biological Evolution: Unity and Diversity				
HS-LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.				
HS-LS4-2 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.				

HS-LS4-3 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment	Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems Chapter 9 in Simmers Geriatric Care (aging)		
HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.	5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness	Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems Chapter 9 in Simmers Geriatric Care (aging)		
HS-LS4-5 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.	7.2- Explain principles of infection control	HOSA - Clincial Laboratory Science https://hosa.org/guidelines/ Chapter 15 Infection Control		
HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity				
Science: HS-Earth's Place in the Universe				
HS-ESS1-1 Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.				

HS-ESS1-2 Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.				
HS-ESS1-3 Communicate scientific ideas about the way stars, over their life cycle, produce elements.				
HS-ESS1-4 Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.				
HS-ESS1-5 Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.				
HS-ESS1-6 Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.				
Science: HS-Earth's Systems				
HS-ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.				

HS-ESS2-2 Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.				
HS-ESS2-3 Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.				
HS-ESS2-4 Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.				
HS-ESS2-5 Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.				
HS-ESS2-6 Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.				
HS-ESS2-7 Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.				
Science: HS-Earth and Human Activity				

HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.	2.2- Relate principles of anatomy and physiology to diagnosis and treatment 3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government)	HOSA - Teamwork events - Biomedical, Forensic Science, Medical Innovation, Chapter 1 in Simmers History and Trends in Healthcare_ Chapter 7 Anatomy and Physiology Diseases and Treatment		
HS-ESS3-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.				
HS-ESS3-3 Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.	3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government)	Chapter 2 Medical Systems __ Chapter 15 in Simmers - Infection Control		
HS-ESS3-4 Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.				
HS-ESS3-5 Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.				

HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.	3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government)	HOSA Teamwork Events - Biomedical, Community Awareness, Problem Solving, Medical Innovation Chapter 2 in Simmers - Health Care Systems Chapter 15 Infection Control		
Science: HS-Engineering Design				
HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	4.3- Demonstrate professional and ethical standards impacting healthcare	Chapter 5 in Simmers Legal and Ethical Responsibilities		
HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	6.1- Demonstrate workplace readiness skills	HOSA - Teamwork Events/Medical Innovation - Chapter 4 in Simmers Personal and Professional Qualities of a Heath Team Member Chapter 20 Lab Assistant Skills Chapter 21 Medical Assistant Skills		
HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.	4.3- Demonstrate professional and ethical standards impacting healthcare 7.3- Understand emergency management and preparedness	Emergency Medical Simulation set up on Campus. HOSA Emergency Preparedness Events. Chapter 5 in Simmers Legal and Ethical Responsibilities.		

HS-ETS1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.	7.3- Understand emergency management and preparedness 8.1- Demonstrate healthcare skills and knowledge 8.2- Utilize appropriate assessment tools to evaluate individual situations	Emergency Medical Simulation set up on Campus. HOSA Emergency Preparedness Events Chapter 12 Comupters in Health Care in Simmers		
Total number of unique Science Standards addressed:	40			
Total number of unique CTE Standards addressed:	12 performance standards- 0 indicators