

# **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:

Name of CTE Course(s):

Total Number of Academic Credits:

Total Number of CTE Credits:

Classroom Academic Teacher Name:

Classroom Academic Teacher Subject:

Classroom CTE Teacher Name:

Classroom CTE Teacher Subject:

## 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)
<b>HS. Physical Sciences (PS)</b>	
<b>HS. Structure and Properties of Matter</b>	
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.	
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.	
<b>HS. Chemical Reactions</b>	
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.	
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.	

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.	
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.	
HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	
<b>HS. Forces and Interactions</b>	
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.	
<b>HS. Energy</b>	
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).	

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).	
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.	
<b>HS. Waves and Electromagnetic Radiation</b>	
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.	
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.	
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.	
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.	
<b>HS. Life Sciences (LS)</b>	
<b>HS. Structures and Function</b>	
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.	

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.	
HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	
<b>HS. Matter and Energy in Organisms and Ecosystems</b>	
HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	
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.	
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.	
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.	
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.	
<b>HS. Interdependent Relationships in Ecosystems</b>	
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.	
HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	
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.	
<b>HS. Inheritance and Variation of Traits</b>	
HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	
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.	
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.	
HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	
<b>HS. Natural Selection and Evolution</b>	
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)
<p>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.</p>	
<p>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.</p>	
<p>HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.</p>	
<p>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.</p>	
<p><b>HS. Earth and Space Science (ESS)</b> <b>HS. Space Systems</b></p>	
<p>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.</p>	
<p>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.</p>	
<p>HS-ESS1-3 Communicate scientific ideas about the way stars, over their life cycle, produce elements.</p>	
<p>HS-ESS1-4 Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.</p>	
<p><b>HS. History of Earth</b></p>	
<p>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.</p>	



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.	
<b>HS. Earth’s Systems</b>	
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.	
<b>HS. Weather and Climate</b>	
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.	
<b>HS. Human Sustainability</b>	
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.	

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.	
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.	
<b>HS. Engineering Design (EST)</b>	
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.	
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.	
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.	
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.	
<b>Total number of unique Science Standards addressed:</b>	
<b>Total number of unique CTE Standards aligned:</b>	

# Elko County School District



Central Administrative Office  
Telephone (775) 738-5196 – Fax (775) 738-0808  
850 Elm Street – Elko, Nevada 89801

June 2, 2022

Director, ECSD Secondary Curriculum and Instruction

Dear Keith Walz,

I am submitting documents to be included for the ECSD Board of Trustees agenda to review and submit the application for Academic Credit for Career and Technical Education Coursework, effective Fall 2022-Spring 2025, as per NAC 389.672.

The Academic credit requested is as follows:

- Completion of CTE Course Principles of Health Science and Medical Assisting is equivalent to earning one science credit towards high school graduation

The documents that are attached include:

- Language of NAC 389.672
- Statement of Academic Credit to be granted, signed by the committee members
- Letters of Appointment of the committee members
- Academic Credit for Career and Technical Education Handbook with Science Alignment document that verifies the alignment of the CTE course standards with the academic standards to be taught in the CTE course.
- Copy of the student notification letter

Once approved by the ECSD Board of Trustees, the minutes of the meeting of approval will be attached, and the documents will be sent to the Board of Education for approval.

Please feel free to contact me for any further information regarding this matter.

A handwritten signature in black ink that reads 'H Steel'.

Heather Steel, ECSD CTE Facilitator

# Elko County School District



Central Administrative Office  
Telephone (775) 738-5196 – Fax (775)738-0808  
850 Elm Street – Elko, Nevada 89801

June 2, 2022

Keith Walz  
Director, Secondary Education

Dear Mr. Walz,

The Nevada Department of Education Principles of Health Science Standards and Medical Assistant and the Nevada Academic Content Standards for Science have been reviewed by Biological Science staff and Health Science staff and have been found to meet the conditions for academic science credit, set forth by NAC 389.672, as outlined by the Nevada Department of Education Office of Career Readiness, Adult Learning, and Education Options Academic Credit for Career and Technical Coursework Procedural Recommendations.

Handwritten signature of Heather Steel in black ink.

Heather Steel, CTE Facilitator

Handwritten signature of Sarah Dyer in black ink.

Sarah Dyer, Biological Science Instructor

Handwritten signature of Hilary Kohntopp in black ink.

Hilary Kohntopp, Health Science Instructor

Handwritten signature of Brandi Davis in black ink.

Brandi Davis, Health Science Teacher

Handwritten signature of Teven Chandler in black ink.

Teven Chandler, Biological Science Instructor

Handwritten signature of Brenna Merrill in black ink.

Brenna Merrill, Health Science Instructor

# Elko County School District



## Central Administrative Office

Telephone: (775) 738-5196 • Fax: (775) 738-0808  
P.O. Box 1012 • Elko, Nevada 89803

May 12, 2022

To Whom It May Concern,

I have appointed Brenna Merrill who teaches Health Science at Spring Creek High School to serve on the Health Science Curriculum Review Committee. If you have any questions please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "Clayton Anderson", followed by a horizontal line.

Clayton Anderson  
Superintendent

Elko County School District

# Elko County School District



## Central Administrative Office

Telephone: (775) 738-5196 • Fax: (775) 738-0808  
P.O. Box 1012 • Elko, Nevada 89803

May 12, 2022

To Whom It May Concern,

I have appointed Hilary Kohntopp who teaches Health Science at Elko High School to serve on the Health Science Curriculum Review Committee. If you have any questions please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "C. Anderson", written over a horizontal line.

Clayton Anderson  
Superintendent  
Elko County School District

# Elko County School District



## Central Administrative Office

Telephone: (775) 738-5196 • Fax: (775) 738-0808  
P.O. Box 1012 • Elko, Nevada 89803

May 12, 2022

To Whom It May Concern,

I have appointed Sarah Dyer who teaches Science at Spring Creek High School to serve on the Health Science Curriculum Review Committee. If you have any questions please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "C. Anderson", with a long horizontal flourish extending to the right.

Clayton Anderson  
Superintendent  
Elko County School District

# Elko County School District



## Central Administrative Office

Telephone: (775) 738-5196 • Fax: (775) 738-0808  
P.O. Box 1012 • Elko, Nevada 89803

May 12, 2022

To Whom It May Concern,

I have appointed Teven Chandler who teaches Science at Elko High School to serve on the Health Science Curriculum Review Committee. If you have any questions please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "C. Anderson", with a long horizontal flourish extending to the right.

Clayton Anderson  
Superintendent  
Elko County School District



# Elko County School District



## Central Administrative Office

Telephone: (775) 738-5196 • Fax: (775) 738-0808  
P.O. Box 1012 • Elko, Nevada 89803

May 12, 2022

To Whom It May Concern,

I have appointed Brandi Davis who teaches Health Science at Spring Creek Middle School to serve on the Health Science Curriculum Review Committee. If you have any questions please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "C. Anderson", written over a horizontal line.

Clayton Anderson

Superintendent

Elko County School District

## Agenda Item Details

Meeting	Jun 14, 2022 - Elko County School District Board of Trustees Meeting, 5:30 p.m., Board Room, 850 Elm St., Elko, NV 89801
Category	2. Action Items
Subject	2.04 Receipt, Review, and Possible Approval of Awarding Academic Credit for Completion of Health Science CTE Course. For Possible Action.
Type	Action

[ECSD Health Science Academic Credit documents for approval 2022 \(1\).pdf \(1,311 KB\)](#)

## Motion & Voting

To Approve Awarding Academic Credit for Completion of Health Science CTE Course.

Motion by Matt McCarty, second by Ira T Wines.

Final Resolution: Motion Carries

Yea: Teresa D Dastrup, Ira T Wines, Jeff Durham, Joshua Byers, Susan Neal, Matt McCarty

# Elko County School District



Central Administrative Office  
Telephone (775) 738-5196 – Fax (775) 738-0808  
850 Elm Street – Elko, Nevada 89801

Dear Parent or Guardian,

Your student is enrolled in the Career and Technical Education course **Principles of Health Science and Medical Assisting** that qualifies for academic credit. By successfully completing the CTE course your student may earn up to 1 credit in the academic area of science to count towards high school graduation.

Please note that while the academic credit earned through CTE coursework is designed to meet the requirements for high school graduation, the academic credit may not necessarily be accepted for academic credit by a specific postsecondary institution.

If you have further questions about this credit, please contact your student's counselor or CTE teacher.

Sincerely,

A handwritten signature in black ink that reads 'H Steel'. The signature is written in a cursive style with a large, stylized 'H' and 'S'.

Heather Steel  
ECSD CTE Facilitator

Nevada Academic Content Standards	Principles of Health Science Performance Standards	Principles of Health Science Link to evidence	Medical Assisting Performance Standards	Medical Assisting Link to Evidence
<p style="text-align: center;"> <a href="#">Please review entire Google Folder of Information for Simmers Text at this link.</a> All the following links are within this folder.. For all standards, review <a href="#">Simmers TOC</a> for appropriate chapters. You can access the full text  <a href="https://k12.cengage.com/portal/Account/LogOn?DistrictLoginCode=5401">https://k12.cengage.com/portal/Account/LogOn?DistrictLoginCode=5401</a> with the login <a href="mailto:teacher01@elkodhohealthsci.com">teacher01@elkodhohealthsci.com</a> password Cengage1!         </p> <p style="text-align: right;"> <a href="#">All of the following links are within this folder. Please review the Table of Contents for the textbook here.</a> </p>				
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	<a href="#">Chapter 14 in Simmers DHO Health Science - Promotion of Safety</a> <a href="#">Chapter 15 in Simmers DHO Health Science - Infection Control</a>		
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	<a href="#">Chapter 14 in Simmers DHO Health Science - Promotion of Safety</a> <a href="#">Chapter 15 in Simmers DHO Health Science - Infection Control</a>		
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-PS1-4 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	<a href="#">14 in Simmers DHO Health Science - Promotion of Safety and Chapter 15 in Simmers DHO Health Science - Infection Control</a>		
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	<a href="#">Simmers Chapter 7 Anatomy and Physiology</a> and <a href="#">Chapter 12 Computers and Techology in Health Care</a>		
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	<a href="#">Chapter 7 Anatomy and Physiology</a> and <a href="#">Chapter 12 Computers and Technology in Health Care.</a>		

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				
<b>Science: HS-Motion and Stability: Forces and Interactions</b>				
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	<a href="#">Research project on different types of therapies.</a> <a href="#">Simmers Chapter 7 Anatomy and Physiology.</a> <a href="#">Chapter 12 Computers and Tehcnology in Healht Care</a>		

<p>HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.</p>	<p>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</p>	<p><a href="#">HOSA - teamwork events - medical innovations, pharmaceuticals, . Simmers Chapter 12.</a> Pharmaceuticals and treatment devices.</p>	<p>Performance Standard 5.6: Understanding Basic Pharmacology</p>	<p><a href="#">Medical Assisting Pharmacology Chapters 50-52 - Pharmacology Fundamentals skills, measurement systems, basic mathematics, and dosage calculations skills,</a> <a href="#">Administerian Oral and Noninjectable Medications skills</a></p>
<p><b>Science: HS-Energy</b></p>				
<p>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.</p>				
<p>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).</p>	<p>2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment</p>	<p><a href="#">Vital Signs, See appropriate table of contents for Simmers TExt. Digestive System, Respiratory System, Temperatures. Simmers Chapter 7 and 16 .</a> See additional assignments for <a href="#">Chapter 7 and 16</a></p>		
<p>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.</p>				
<p>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).</p>	<p>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</p>	<p><a href="#">HOSA - Emergency Preparedness events, Health Professions events. Hypothermia, First Aid, Fever/Heat Stroke, homeostasis - Simmers Chapter 7, 12, 14, 15, 16, 17</a></p>		
<p>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.</p>				
<p><b>Science: HS-Waves and Their Applications in Technologies on Information Transfer</b></p>				
<p>HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.</p>				

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	<a href="https://hosa.org/guidelines/">HOSA - Health Informatics - https://hosa.org/guidelines/</a> HIPAA, Medical Informatics. <a href="#">Simmers Chapter 5 Legal and Ethical Reponsibilities, Chpater 12 - Computers and Technology in Health Care</a>		
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 <a href="#">7</a> , <a href="#">12</a> , and <a href="#">13</a> .		
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 <a href="#">7</a> , <a href="#">12</a> , and <a href="#">13</a> .		
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 <a href="#">7</a> , <a href="#">12</a> , and <a href="#">13</a> .		
<b>Science: HS-From Molecules to Organisms: Structures and Processes</b>				
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	<a href="#">Microbiology - Infetion controls - Simmers Chapter 15 Infection Control. Anatomy and physiology cellular to systems in organisms - Chapter 7. See additional assigments for Chapter 7</a>	Performance Standard 2.2: Demonstrate Knowledge of Human Anatomy and Physiology Performance Standard 5.1: Implement Aseptic and Infection Control Procedures	<a href="#">Medical Assisting Chapter 9 -21,</a> <a href="#">Medical Assisting Chapter 34 Anatomic descriptors and Fundament body structure, Diseases and Treatment sections in all the body systems. The Nervous System, The senses, Integumentary System, The Skeletal System, The Muscular System, The Respiratory System, The Circulatory System, The Immune System, The Digestive System, The Endocrine System, The Reproductive System, Infection Control and Meidcal Asepsis skills</a>

<p>HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p>	<p>7.1- Identify procedures mandated by local, state, and federal guidelines 7.2- Explain principles of infection control</p>	<p><a href="#">Microbiology - Infetion controls - Simmers Chapter 15 Infection Control</a>. Anatomy and physiology cellular to systems in organisms - <a href="#">Chapter 7</a>. See additional assignments for <a href="#">Chapter 7</a></p>	<p>Performance Standard 2.2: Demonstrate Knowledge of Human Anatomy and Physiology Standard 5.1: Implement Aseptic and Infection Control Procedures</p>	<p><a href="#">Medical Assisting Chapter 9 -21</a>, <a href="#">Medical Assisting Chapter 34</a> Anatomic descriptors and Fundament body structure, Diseases and Treatment sections in all the body systems. The Nervous System, The senses, Integumentary System, The Skeletal System, The Muscular System, The Respiratory System, The Circulatory System, The Immune System, The Digestive System, The Endocrine System, The Reproductive System, Infection Control and Meidcal Asepsis skills</p>
<p>HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>	<p>5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness 7.2- Explain principles of infection control</p>	<p>Vital signs, nutrition/wellness, vaccinations. Simmers <a href="#">Chapter 1 History and Trends</a>, <a href="#">Chapter 7 Anatomy and physiology</a>, <a href="#">Chapter 15 Infection Control</a>, <a href="#">Chapter 16 Vital Signs</a>. See additional assignments for Chapter 1, <a href="#">7</a>, and 16</p>	<p>Performance Standard 2.2: Demonstrate Knowledge of Human Anatomy and Physiology Performance Standard 5.3: Understand and Measure Vital Signs</p>	<p><a href="#">Medical Assisting Chapter 9 -21</a>, <a href="#">Medical Assisting Chapter 34</a>, <a href="#">Medical Assisting Chapter 36</a> Anatomic descriptors and Fundament body structure, Diseases and Treatment sections in all the body systems. The Nervous System, The senses, Integumentary System, The Skeletal System, The Muscular System, The Respiratory System, The Circulatory System, The Immune System, The Digestive System, The Endocrine System, The Reproductive System, Infection Control and Meidcal Asepsis skills</p>
<p>HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.</p>	<p>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</p>	<p>Cellular and Reproductive System - <a href="#">Chapter 7, Anatomy and Physiology</a></p>	<p>Performance Standard 2.2: Demonstrate Knowledge of Human Anatomy and Physiology</p>	<p><a href="#">Medical Assisting Chapter 9 - 21</a>, <a href="#">Medical Assisting Chapter 34</a> Anatomic descriptors and Fundament body structure, Diseases and Treatment sections in all the body systems. The Nervous System, The senses, Integumentary System, The Skeletal System, The Muscular System, The Respiratory System, The Circulatory System, The Immune System, The Digestive System, The Endocrine System, The Reproductive System, Infection Control and Meidcal Asepsis skills</p>
<p>HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.</p>	<p>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</p>	<p><a href="#">Nutrition and Wellness Chapter 11, Vitamins and Nutrients</a></p>		



<p>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.</p>	<p>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</p>	<p><a href="#">Nutrition and Wellness Chapter 11, Vitamins and Nutrients</a></p>		
<p>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.</p>	<p>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</p>	<p><a href="#">Nutrition and Wellness Chapter 11, Vitamins and Nutrients</a>, Digestion and Absorbtion</p>		
<p><b>Science: HS-Ecosystems: Interactions, Energy, and Dynamics</b></p>				
<p>HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.</p>				
<p>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.</p>	<p>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</p>	<p><a href="#">Digestion, absorbption, Metabolism, gut biome. Chapter 11</a></p>		
<p>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.</p>				
<p>HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.</p>	<p>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</p>	<p><a href="#">Chapter 7 Anatomy and Physiology, Chapter 13 - Medical Math, Chapter 15 - Infection Control, Patient records - Chapter 12</a></p>		
<p>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.</p>				

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	<a href="#">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</a>		
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. <a href="#">HOSA Emergency Preparedness Events</a>		
HS-LS2-8 Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.				
<b>Science: HS-Heredity: Inheritance and Variation of Traits</b>				
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	<a href="#">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</a>		
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	<a href="#">Reproductive System - Chapter 7, Diseases and Treatments - Chapter 7, Chapter 8 - Human Growth and Development, Chapter 9 Geriatric Care, Chapter 10 - Cultural Diversity</a>		
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	<a href="#">Blood Typing Lab and 2. 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</a>		
<b>Science: HS-Biological Evolution: Unity and Diversity</b>				
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	<a href="#">Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems</a> <a href="#">Chapter 9 in Simmers Geriatric Care (aging)</a>		
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	<a href="#">Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems</a> <a href="#">Chapter 9 in Simmers Geriatric Care (aging)</a>		
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	<a href="#">HOSA - Clinical Laboratory Science</a> <a href="https://hosa.org/guidelines/">https://hosa.org/guidelines/</a> <a href="#">Chapter 15 Infection Control</a>		
HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity				
<b>Science: HS-Earth's Place in the Universe</b>				
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.				
<b>Science: HS-Earth's Systems</b>				
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.				

<b>Science: HS-Earth and Human Activity</b>				
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)	<a href="#">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</a>		
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)	<a href="#">Chapter 2 Medical Systems Chapter 15 in Simmers - Infection Control</a>		
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)	<a href="#">HOSA Teamwork Events - Biomedical, Community Awareness, Problem Solving, Medical Innovation Chapter 2 in Simmers - Health Care Systems Chapter 15 Infection Control</a>		
<b>Science: HS-Engineering Design</b>				
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	<a href="#">Chapter 5 in Simmers Legal and Ethical Responsibilities</a>		
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	<a href="#">HOSA - Teamwork Events/Medical Innovation - Chapter 4 in Simmers Personal and Professional Qualities of a Health Team Member Chapter 20 Lab Assistant Skills Chapter 21 Medical Assistant Skills</a>		

<p>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.</p>	<p>4.3- Demonstrate professional and ethical standards impacting healthcare 7.3- Understand emergency management and preparedness</p>	<p>Emergency Medical Simulation set up on Campus. <a href="#">HOSA Emergency Preparedness Events. Chapter 5 in Simmers Legal and Ethical Responsibilities.</a></p>	<p>Performance Standard 5.5: Assisting With Specialty Examinations and Procedures</p>	<p><a href="#">Medical Assisting Ch 42-45 Skills related to The Physician's Office Laboratory, Specimen Collecting and Processing, Blood Specimen Collection, and Diagnostic Testing</a></p>
<p>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.</p>	<p>7.3- Understand emergency management and preparedness 8.1- Demonstrate healthcare skills and knowledge 8.2- Utilize appropriate assessment tools to evaluate individual situations</p>	<p>Emergency Medical Simulation set up on Campus. <a href="#">HOSA Emergency Preparedness Events Chapter 12 Computers in Health Care in Simmers</a></p>		
<p><b>Total number of unique Science Standards addressed:</b></p>	<p>3</p>			
<p><b>Total number of unique CTE Standards addressed:</b></p>	<p>12 performance standards</p>			