

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.**

<i>Science: HS. Life Sciences – HS. Human Sustainability</i>	<i>CTE Performance Indicators (including text description)</i>
<i>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.</i>	<i>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)</i>

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.	
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.	
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.	
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.	
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).	

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.	
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.	
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.	
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.	

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.	
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.	
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.	
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.	
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.	
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.	
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.	
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)
<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>HS. Earth and Space Science (ESS) HS. Space Systems</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>HS. History of Earth</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.	
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.	

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.	
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.	
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.	
Total number of unique Science Standards addressed:	
Total number of unique CTE Standards aligned:	

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 Nursing Assistant are 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



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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 Nursing 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

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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



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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", with a long horizontal flourish extending to the right.

Clayton Anderson
Superintendent
Elko County School District

Elko County School District



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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



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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", written over a horizontal line.

Clayton Anderson
Superintendent
Elko County School District

Elko County School District



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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

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NAC 389.672 Academic credit for a course of study in career and technical education: Limitations and prerequisites. (NRS 385.080, 385.110, 388.360)

1. A board of trustees may allow a pupil to earn, towards the units necessary for graduation from high school, two units of the credit required in English, one unit required in mathematics, one unit required in science and one-half unit required in health if he or she is enrolled in a course of study in career and technical education approved pursuant to this section within one of the program areas set forth in subsection 1 of [NAC 389.803](#) and that course includes, as part of its curriculum, the curriculum of the required course.

2. The superintendent of the school district shall appoint a committee composed of one person certified to teach in the course of study in career and technical education and one person certified to teach in the academic area in which the credit may be earned. The committee must verify to the board of trustees that the curriculum for the course of study in career and technical education includes the curriculum of the required course of study for which a pupil may earn credit.

3. After verification has been received by the board of trustees, the written curriculum and title of the course of study in career and technical education and a statement of the academic credit to be granted must be submitted to the State Board of Education for approval. Academic credit may be granted for the course of study in career and technical education or a combination of courses only after the State Board of Education has given its approval.

4. The Superintendent of Public Instruction may give approval for the granting of academic credit to a board of trustees requesting to use a curriculum for a course of study in career and technical education that has been approved by the State Board of Education for another school district if:

(a) The procedures set forth in subsection 2 were followed by the requesting district; and

(b) The board of trustees provides assurances that it will not deviate from the curriculum that has been approved by the State Board of Education.

5. A pupil who earns academic credit pursuant to this section must be notified that the approval for academic credit is designed to meet the requirements for graduation from high school and may not necessarily be accepted for academic credit by a specific postsecondary institution. A copy of the notification given to the pupil must accompany the other materials to be submitted to the State Board of Education for final approval.

6. A minimum number of credits must be earned in the respective academic areas, as follows:

(a) At least two credits must be earned in the academic mathematics department;

(b) At least one credit must be earned in the academic science department; and

(c) At least two credits must be earned in the academic English department.

(Added to NAC by Bd. of Education, eff. 5-4-87; A by Bd. for Occupational Education, 3-27-92; 11-17-95; A by Bd. of Education by R069-97, 12-10-97, eff. 9-1-99; R155-01, 12-17-2001; R195-01, 4-1-2002; R165-03, R166-03, R184-03 & R185-03, 1-22-2004; R236-03, 3-19-2004; A by Bd. for Career & Tech. Educ. by R172-05, 2-23-2006; A by Bd. of Education by R132-10, 12-16-2010; A by R087-12, 11-1-2012)

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Dear Parent or Guardian,

Your student is enrolled in the Career and Technical Education course **Principles of Health Science and Nursing Assistant** 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.

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

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

Nevada Academic Science Standards (DCI)	Principles of Health Science Performance Standards	Principles of Health Science Link to evidence	Nursing Assistant Performance Standards	Nursing Assistant Link to Evidence
		<p>Please review entire Google Folder of Information for Simmers Text at this link. For all standards, review Simmers TOC for appropriate chapters. You can access the full text</p> <p>https://k12.cengage.com/portal/Account/Login?DistrictLoginCode=540I with the login teacher01@elkodhohealthsci.com password Cengage1!</p>		<p>All materials for these links can be found in this folder. Please review Table of Contents for Foundations of Caregiving Textbook</p>
<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</p>	<p>2.1- Demonstrate knowledge of human anatomy and physiology</p> <p>2.2- Relate principles of anatomy and physiology to diagnostics and treatment</p> <p>7.1- Identify procedures mandated by local, state, and federal guidelines</p>	<p>Chapter 14 in Simmers DHO Health Science - Promotion of Safety</p> <p>Chapter 15 in Simmers DHO Health Science - Infection Control</p>		
<p>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</p>	<p>7.1- Identify procedures mandated by local, state, and federal guidelines</p> <p>7.3- Understand emergency management and preparedness</p>	<p>Chapter 14 in Simmers DHO Health Science - Promotion of Safety</p> <p>Chapter 15 in Simmers DHO Health Science - Infection Control</p>		

<p>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.</p>	<p>2.1- Demonstrate knowledge of human anatomy and physiology</p>			
<p>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</p>	<p>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</p>	<p>14 in Simmers DHO Health Science - Promotion of Safety and Chapter 15 in Simmers DHO Health Science - Infection Control</p>		
<p>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.</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>Simmers Chapter 7 Anatomy and Physiology and Chapter 12 Computers and Technology in Health Care</p>		
<p>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.</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>Chapter 7 Anatomy and Physiology and Chapter 12 Computers and Technology in Health Care.</p>		

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.			12.1: Understand the Principles of Positioning and Trnasferring	See items 23,24,25 on ECSD CNA Scope and Sequence Document - Excercise and Activity Skills . Chapters 7 and 11 in Foundations of Caregiving

<p>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</p>				
<p>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</p>				
<p>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.</p>				
<p>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</p>	<p>2.2- Relate principles of anatomy and physiology to diagnostics and treatment</p>	<p>Research project on different types of therapies. Simmers Chapter 7 Anatomy and Physiology, Chapter 12 Computers and Tehcnology in Healht Care</p>		

<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>HOSA - teamwork events - medical innovations, pharmaceuticals, . Simmers Chapter 12. Pharmaceuticals and treatment devices.</p>		
Science: HS-Energy				
<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>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</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>HOSA - Emergency Preparedness events, Health Professions events. Hypothermia, First Aid, Fever/Heat Stroke, homeostasis - Simmers Chapter 7, 12, 14, 15, 16, 17</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>Science: HS-Waves and Their Applications in Technologies on Information Transfer</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.				
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 Reponsibilities , Chpater 12 - Computers and Technology in Health Care	2.2 Describe Ethics and Law	See items 3 and 4 on ECSD CNA Scope and Sequence skills . Chapters 1 and 2 in Foundations of Caregiving
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 .		

<p>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.</p>	<p>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</p>	<p>Medical Diagnostics and Treatments. Simmers Chapter 7, 12, and 13.</p>		
<p>Science: HS-From Molecules to Organisms: Structures and Processes</p>				
<p>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.</p>	<p>7.1- Identify procedures mandated by local, state, and federal guidelines 7.2- Explain principles of infection control</p>	<p>Microbiology - Infetion controls - Simmers Chapter 15 Infection Control. Anatomy and physiology cellular to systems in organisms - Chapter 7. See additional assigments for Chapter 7</p>	<p>6.1 Understand Structure and Functions of Body Systems 7.1 Recognize and Implement Hygiene and Grooming Principles</p>	<p>See items 9, 10,11,12 on ECSD CNA Scope and Sequence skills. Chapters 5, 15-24 in Foundations of Caregiving. See items 15, 16, 17, 18 on ECSD CNA Scope and Sequence Skills. Chapter 12 and 13 in Foundations of Caregiving Text.</p>
<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>Microbiology - Infetion controls - Simmers Chapter 15 Infection Control. Anatomy and physiology cellular to systems in organisms - Chapter 7. See additional assignments for Chapter 7</p>	<p>5.1 Explain Infection Prevention 6.1 Understand Structure and Funictons of Body Systems</p>	<p>See items 8 on ECSD CNA Scope and Sequence skills. See Chapter 6 in Foundations of Caregiving Text. See items 9, 10,11,12 on ECSD CNA Scope and Sequence skills. Chapters 5, 15-24 in Foundations of Caregiving.</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 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</p>	<p>5.1 Explain Infection Prevention Processes 6.1 Understand Structure and Functions of Body Systems</p>	<p>See items 8 on ECSD CNA Scope and Sequence skills. See Chapter 6 in Foundations of Caregiving Text. See items 9, 10,11,12 on ECSD CNA Scope and Sequence skills. Chapters 5, 15-24 in Foundations of Caregiving.</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 - Chapter 7, Anatomy and Physiology</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>Nutrition and Wellness Chapter 11, Vitamins and Nutrients</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>Nutrition and Wellness Chapter 11, Vitamins and Nutrients</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>Nutrition and Wellness Chapter 11, Vitamins and Nutrients, Digestion and Absorbtion</p>	<p>9.1 Identify General Nutritional Concepts 9.2 Demonstrate Skills</p>	<p>See items 20 on ECSD CNA Scope and Sequence skills. See Chapter 14 in Foundations of Caregiving Text.</p>
<p>Science: HS-Ecosystems: Interactions, Energy, and Dynamics</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>Digestion, absorbption, Metabolism, gut biome. Chapter 11</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>Chapter 7 Anatomy and Physiology, Chapter 13 - Medical Math, Chapter 15 - Infection Control, Patient records - Chapter 12</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>				
<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.</p>	<p>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</p>	<p>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</p>		

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-Hereditry: 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		

<p>HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population</p>	<p>2.3- Apply mathematics in healthcare practice</p>	<p>Blood Typing Lab. HOSA - Clinical Laboratory 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</p>	<p>4.1 Promote Residents' Dignity</p>	<p>See item 7 on ECSD CNA Scope and Sequence Document - Explain and Demonstrate Indirect Care Practices skills. Chapters 2 and 5 in Foundations of Caregiving</p>
<p>Science: HS-Biological Evolution: Unity and Diversity</p>				
<p>HS-LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.</p>				

<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>2.1- Demonstrate knowledge of human anatomy and physiology 2.2- Relate principles of anatomy and physiology to diagnostics and treatment</p>	<p>Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems Chapter 9 in Simmers Geriatric Care (aging)</p>		
<p>HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.</p>	<p>5.1- Describe and apply behaviors for prevention of diseases and promotion of health and wellness</p>	<p>Chapter 7 in Simmers (Genetics) in Diseases and Abnormal Conditions in ALL systems Chapter 9 in Simmers Geriatric Care (aging)</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>7.2- Explain principles of infection control</p>	<p>HOSA - Clinical Laboratory Science https://hosa.org/guidelines/ Chapter 15 Infection Control</p>		
<p>HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity</p>				
<p>Science: HS-Earth's Place in the Universe</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>				

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)	<u>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</u>		
HS-ESS3-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.				

<p>HS-ESS3-3 Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>	<p>3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government)</p>	<p>Chapter 2 Medical Systems Chapter 15 in Simmers - Infection Control</p>		
<p>HS-ESS3-4 Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p>				
<p>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.</p>				
<p>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.</p>	<p>3.1- Evaluate healthcare delivery systems (I.E., private, public, non-profit, government)</p>	<p>HOSA Teamwork Events - Biomedical, Community Awareness, Problem Solving, Medical Innovation Chapter 2 in Simmers - Health Care Systems Chapter 15 Infection Control</p>		
<p>Science: HS-Engineering Design</p>				

<p>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.</p>	<p>4.3- Demonstrate professional and ethical standards impacting healthcare</p>	<p>Chapter 5 in Simmers Legal and Ethical Responsibilities</p>		
<p>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.</p>	<p>6.1- Demonstrate workplace readiness skills</p>	<p>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</p>		
<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. HOSA Emergency Preparedness Events. Chapter 5 in Simmers Legal and Ethical Responsibilities.</p>		

