

01 Organization of the Human Body I(Terminology and the Body Plan, Biomedical Research, Homeostasis, and Histology)

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **14 Blocks**
Status: **Published**

General Overview, Course Description or Course Philosophy

Anatomy and Physiology is the study of the structure and function of the human body. This course follows a sequential development of the major body systems in an organized and structured curriculum. The course is designed to give the students a selective overview of human anatomical structure and an analysis of human physiological principles. Labs will include slide work, dissection of various animals and studies of the human skeleton. The course will also use computer simulated dissection.

Medical Terminology is embedded in the study of Anatomy & Physiology and teaches words that pertain to body systems, anatomy, physiology, medical processes and procedures and a variety of diseases. It provides specialized language for the health care team, enabling health care workers to communicate in an accurate, articulate and concise manner. This course is designed to give the students a comprehensive knowledge of word construction, definition and use of terms related to all areas of medical science. The course includes but is not limited to terms related to anatomy of the human body, functions of health and disease, and the use of language in diagnosing and treating conditions related to all of the human body systems. This course replaces the earlier study of Latin and Greek for future healthcare professionals, as it focuses words used in the medical fields.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Students will understand that:

- Science is a body of knowledge and skills acquired through systematic experimentation and observation to describe natural phenomena; or, more simply it is a “way of knowing”. Observations, data recording and analysis are used to categorize, represent and interpret the natural world.
- Humans rely upon interdependent body systems to maintain homeostasis through the exchange of materials with the environment.
- Living systems, from the organismal to the cellular level, demonstrate the complementary nature of structure and function.

CONTENT AREA STANDARDS

12.9.3.HL-DIA.3

Demonstrate the principles of body mechanics for positioning, transferring and transporting of patients/clients, and perform them without injury to the patient/client or

	self.
12.9.3.HL-THR.1	Utilize communication strategies to answer patient/client questions and concerns on planned procedures and goals.
SCI.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9-12.HS-LS1-1.6.1	Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
9-12.HS-LS1-1.LS1.A.1	Systems of specialized cells within organisms help them perform the essential functions of life.
9-12.HS-LS1-2.LS1.A.1	Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CCSS.ELA-Literacy.RST.11-12.9	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
CCSS.ELA-Literacy.RST.11-12.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.
VHEL.9-12.9.4.12.H.(3).6	Read, interpret, and extract information from medical records and documents, applying knowledge of medical terminology and codes to facilitate the abstraction, coding, and other use of key information.
VHEL.9-12.9.4.12.H.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.2	Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.8	Evaluate and use information resources to accomplish specific occupational tasks.
VHEL.9-12.9.4.12.H.12	Apply active listening skills to obtain and clarify information.
VHEL.9-12.9.4.12.H.16	Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.
VHEL.9-12.9.4.12.H.17	Employ critical thinking and interpersonal skills to resolve conflicts.
VHEL.9-12.9.4.12.H.33	Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.

STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- laboratory safety guidelines are essential and required during ALL laboratory procedures
- specific terms are used to identify regions, planes, and locations of the body.
- homeostasis is an essential part of all levels of organization in the human body
- there are characteristics common to all living things: made of cells, respond to their environment, obtain and use energy to undergo metabolic activity, reproduce, grow and develop, maintain homeostasis, adapt and evolve, and have a limited life span.
- terminology words are read in a certain sequence in order to determine the proper meaning, identifying prefix, combining words, and suffixes.
- proper pronunciation and spelling of medical terms are essential
- Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level.

Procedural Knowledge

Students will be able to:

- Demonstrate the principles of body mechanics for positioning, transferring and transporting of patients/clients, and perform them without injury to the patient/client or self.
- Utilize communication strategies to answer patient/client questions and concerns on planned procedures and goals
- Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
- Construct an explanation based on evidence how a systems of specialized cells within organisms help them perform the essential functions of life.
- Read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.
- Identify that all cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA that contain the instructions that code for the formation of proteins, which carry out most of the work of cells.
- Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
- Read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.
- Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
- Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
- Evaluate and use information resources to accomplish specific occupational tasks.
- Communicate information within a healthcare classroom and demonstrate how to convey this information to appropriate departments and professionals in a timely manner to facilitate sharing of key diagnostic information used in treating patients.
- Apply the quantitative and qualitative terminology and codes for a range of medical

information and analyze the information for designated purposes in order to facilitate the flow of information among individuals in a healthcare environment.

- Develop and interpret tables, charts, and figures to support written and oral communications.
- Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.
- Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
- Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- Summarize, represent, and interpret data on a single count or measurement variable.
- Use effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information.
- Apply active listening skills to obtain and clarify information.

EVIDENCE OF LEARNING

Formative Assessments

- Informal checks for understanding
- Exit tickets
- Do now
- Homework (Chapter Outcome Outlines)
- Study guide questions.
- Video Overviews
- Discuss terminology words and pronunciation.
- Give practice in both pronunciation and understanding the words.
- Provide students with handouts for in-class collaborative work
- Crossword Puzzles, Word Searches and case studies pertinent to the unit and have students analyze and define medical terms.
- StudyWare Games and Quizzes as time permits
- Current events in Healthcare: Discussion Circle

Summative Assessments

- Tests (Anatomy and Medical Terminology)
- quizzes (Abbreviations, Anatomy & Medical Terminology)

- predictions (Based on case study analysis and interpretation of medical research)
- laboratory activities (Various stations set up to review regions, planes, positioning)

Benchmarks – departmental benchmark given at the end of MP1 and MP3 based on lab practices

Alternative Assessments

- Lab inquiries and investigations
- Lab Practicals
- Exploratory activities based on phenomenon
- Gallery walks of student work
- Creative Extension Projects
- Build a model of a proposed solution
- Let students design their own flashcards to test each other
- Keynote presentations made by students on the topic
- Portfolio

RESOURCES (Instructional, Supplemental, Intervention Materials)

Erlich Text : Chapter 1

Erlich Instructor's Manual Ch.1 Resources:

Crossword Puzzles, Word Searches and case studies

Chapter Quizzes, Tests

INTERDISCIPLINARY CONNECTIONS

- Integrate quantitative or technical information expressed in words in a text. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- Experimentation
- Social Emotional Learning

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.