

# Health Science Investigation II

## COURSE OUTLINE

**1. Course Title:** Health Science Investigation II

**2. CBEDS Title:** Other Health Careers Course

**3. CBEDS Number:** 4298

**4. Job Titles:**

Assistant Clinical Laboratory Technician  
Emergency Medical Technician  
Medical Assistant  
Medical Records & Health Information Technician  
Medical Transcriptionist  
Ophthalmic Laboratory Technician  
Physical Therapy Assistant  
Sports trainer

**5. Course Description:**

Year two, Personal Health Investigation will be the continued development of the knowledge gained in year one through the develop of a personal health profile. The PHP will be an over arching theme that will be carried out through the entire year. The bases of the PHP will be to use the students' family history as well as establishing health goals to map their HIS path for the school year. Once they have collected their base line health data, we will embark on path of health, anatomy and physiology discovery.

In order for a student to complete year two successfully they will go through eight units of focus that will include the various systems of the body such as digestion, reproduction, central nervous, integumentary, and urinary. Year 2 will include pig dissection, physiology and histology labs as well as various research projects in the fields of nutrition, athletic training, and exercise science. Each unit will grow students' knowledge of the systems anatomy as well as its vocabulary. The in depth information of each system will help them to better understand their Personal health Plan as well as to prepare them for a medical terminology exam and various careers that they will be exploring in year three.

**6. Objectives:**

Upon completion of this course, the students will be able to:

1. Record baseline health data to get a better understanding of current health status
2. Understand how their family history can cause a predisposition for health problems.
3. Develop a proper health plan taking in to consideration diet, exercise and lifestyle
4. Research different diets to see the problems that they may cause with your digestive system to work more or less efficiently
5. Understand what the central nervous system controls in the body and associated vocabulary
6. Know what the cardiovascular systems consists of and associated vocabulary
7. Name all the major muscles and bones of the body and know associated vocabulary
8. Name and label all of the parts of the excretory and reproductive systems and know associated vocabulary
9. Identify all the planes of the human body and how to describe particular movements of the body in medical and clinical terms

## Pathway

Recommended Sequence	Courses
<b>Introductory</b>	Health and Science Investigation I or Introduction to Health Careers
<b>Skill Building</b>	<b>Health and Science Investigation II</b> or Advanced Medical Careers or Medical Terminology
<b>Advanced Skill</b>	Health and Science Investigation III or Health Careers Coop

**6. Hours:** Students receive up to 180 hours of classroom instruction.

**7. Prerequisites:** Health and Science Investigation I

**8. Date (of creation/revision):** July 2011

## 9. Course Outline

COURSE OUTLINE				
Upon successful completion of this course, students will be able to demonstrate the following skills necessary for entry-level employment.				
Instructional Units and Competencies	Course Hours	Model Curr. Standards	CA Academic Content Standards	CAHSEE
<p><b>I. CAREER PREPARATION</b></p> <p><b>A. Career Planning and Management.</b></p> <ol style="list-style-type: none"> <li>1. Know the personal qualifications, interests, aptitudes, knowledge, and skills necessary to succeed in careers.               <ol style="list-style-type: none"> <li>a. Students will identify skills needed for job success</li> <li>b. Students will identify the education and experience required for moving along a career ladder.</li> </ol> </li> <li>2. Understand the scope of career opportunities and know the requirements for education, training, and licensure.               <ol style="list-style-type: none"> <li>a. Students will describe how to find a job.</li> <li>b. Students will select two jobs in the field and map out a timeline for completing education and/or licensing requirements.</li> </ol> </li> <li>3. Know the main strategies for self-promotion in the hiring process, such as completing job applications, resume writing, interviewing skills, and preparing a portfolio.               <ol style="list-style-type: none"> <li>a. Students will write and use word processing software to create a resume, cover letters, thank you letters, and job applications.</li> <li>b. Students will participate in mock job interviews.</li> </ol> </li> <li>4. <i>Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.</i> <ol style="list-style-type: none"> <li>a. <i>Students will conduct a self—assessment and explain how professional qualifications affect career choices.</i></li> </ol> </li> <li>5. <i>Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.</i> <ol style="list-style-type: none"> <li>a. <i>Contact two professional organization and identify the steps to become a member.</i></li> </ol> </li> <li>6. <i>Understand the past, present and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.</i> <ol style="list-style-type: none"> <li>a. <i>Students will describe careers in the business industry sector.</i></li> <li>b. <i>Students will identify work-related cultural differences to prepare for a global workplace.</i></li> </ol> </li> </ol> <p><b>B. Technology.</b></p> <ol style="list-style-type: none"> <li>1. Understand past, present and future technological advances as they relate to a chosen pathway and on selected segments of the economy.</li> <li>2. Understand the use of technological resources to gain access to, manipulate, and produce information, products and services.</li> <li>3. Use appropriate technology in the chosen career pathway.</li> </ol> <p><b>C. Problem solving and Critical Thinking.</b></p> <ol style="list-style-type: none"> <li>1. Understand the systematic problem-solving models that incorporate input, process, outcome and feedback components, and apply appropriate problem-solving strategies and critical thinking to work-related issues and tasks.</li> <li>2. Use and apply critical thinking and decision making skills</li> </ol>	<p>10</p> <p>Additional hours are integrated throughout the course.</p>	<p>Transportation Industry Sector, Model Curriculum Standards</p> <p>3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0</p>	<p><u>Language Arts</u> (8) R 1.3, 2.6 W1.3, 2.5, LC 1.4,1.5 1.6 LS1.2, 1.3, (9/10) R2.1,2.3,2 W2.5 LC1.4 LS 1.1, 2.3 (11/12) R2.3 W2.5 LC1.2 <u>Math</u> (7) NS1.2, 1.7 MR 1.1,1.3 2.7,2.8, 3.1</p>	<p>Lang. Arts R 8.2.1  (9/10) R 2.1, 2.3 W2.5  Math (7) NS 1.2, 1.3, 1.7 MR 1.1, 2.1, 3.1</p>

<p>to make informed decisions, solve problems, and achieve balance in the multiple roles of personal, home, work and community life.</p> <p>D. Health and Safety.</p> <ol style="list-style-type: none"> <li>1. Know policies, procedures, and regulations regarding health and safety in the workplace, including employers' and employees' responsibilities.</li> <li>2. Understand critical elements of health and safety practices related to a variety of business environments.</li> </ol> <p>E. Responsibility &amp; Flexibility.</p> <ol style="list-style-type: none"> <li>1. Understand the qualities and behaviors that constitute a positive and professional work demeanor.</li> <li>2. Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles and how individual actions can affect the larger community.</li> <li>3. Understand the need to adapt to varied roles and responsibilities.</li> </ol> <p>F. Ethics and Legal Responsibilities</p> <ol style="list-style-type: none"> <li>1. Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.</li> <li>2. Understand the concept and application of ethical and legal behavior consistent with workplace standards. <ol style="list-style-type: none"> <li>a. <i>Contact a business and obtain a copy of their rules for employment.</i></li> <li>b. <i>Role play difference ethical scenarios.</i></li> </ol> </li> <li>3. Understand the role of personal integrity and ethical behavior in the workplace.</li> </ol> <p>G. Leadership and Teamwork.</p> <ol style="list-style-type: none"> <li>1. Understand the characteristics and benefits of teamwork, leadership, citizenship in the school, community, and workplace settings for effective performance and attainment of goals.</li> <li>2. Understand the ways in which professional associations, such as FFA, and competitive career development activities enhance academic skills, career choices, and contribute to promote employability.</li> <li>3. Know multiple approaches to personal conflict resolution and understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.</li> </ol>				
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Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
<p>I History of Medicine – Know and understand the early history of medicine in relation to medical terminologies.</p> <p>A. Understand vocabulary development.</p> <p>B. Medical Word Elements</p> <p>a. Know and apply medical word components of:</p> <p>i. Root</p> <p>ii. Prefix</p> <p>iii. Suffix</p> <p>iv. Combining Vowels</p> <p>v. Combining forms</p> <p>C. Know medical abbreviations used in daily medical settings.</p> <p>D. Practice proper pronunciations of medical terms.</p>	3	Foundation Standards Ethics & Legal Responsibility 8.0, 8.1	ELA 11-12; R; 1.1-1.3, 2.1-2.6 W; 1.1-1.5, 1.6, 1.8, 1.9, 2.1-2.6	(10)R2.1 (10)R2.7 (10)WS1.2 (10)WS1.4 (7)NS1.2 (7)NS1.3 (6)P3.5 (7)MR2.1 (7)MR2.4
<p>II. Medical Terminology/Communication &amp; Interpersonal Skills</p>	4			
<p>III. Athletic Readiness Physical Assessment</p> <p>A. Purpose of Assessment</p> <p>B. Organization</p> <p>C. General Physical</p>	5	Health Science & Medical Technology Industry Sector 10.6	ELA 9-10; R; 2.6	
<p>IV. Assessment of Vital Signs</p> <p>A. Pulse</p> <p>B. Respiration</p> <p>C. Body temperature</p> <p>D. Blood Pressure</p> <p>E. Height &amp; Weight</p> <p>F. Flexibility</p> <p>G. Strength</p> <p>H. Power</p> <p>I. Cardiovascular Endurance</p> <p>J. VO<sub>2</sub></p> <p>K. Body Fat Percentages</p>	5	Health Science & Medical Technology Industry Sector B1.1, 1.2, B2.1, 2.3. & 2.4, B3.1, 3.4. & 3.6 B4.1, 4.2 B5.2 D2.1, 2.2	ELA 9-10; R; 2.1, 2.2, 2.3, 2.5, 2.8 W; 1.1-1.9	
<p>V. Introduction to the Structure and Function of the Body</p> <p>A. Structural Levels of Organization</p> <p>B. Terminology</p> <p>C. Planes of the body</p> <p>D. Anatomical Positions</p>	5		ELA 9-10; R; 2.6.	

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
VI. Cells and Tissues D. Cells E. Tissues			ELA 9-10; R; 2.6.  S. 7; 5c  (7) 1.2 Sci (5.c) (9-12)	<b>(10)WA 1.1</b> <b>(10)WA 1.2</b> <b>(6)P3.5</b> <b>(7) MR 3.3</b>
VII. Organ Systems of the Body L. Organ Systems M. Organ Replacement				
VIII. Topographic Anatomy A. Overview B. Body Regions C. Arterial Pulse Points	5	Therapeutic Pathway E1.1 E3.4 E4.1 E4.3		
IX. Musculoskeletal System A. Know the different anatomical terms. B. Identify words parts, combining forms, combining vowels. C. Analyze different medical terms in the musculoskeletal system. D. Practice, analyze and apply the different musculoskeletal surgical terms. E. Analyze and apply the different musculoskeletal system diagnostic terms. F. Practice, analyze and apply the different musculoskeletal system surgical and procedural terms.	5			
X. Cardiovascular and Lymphatic System A. Know the different anatomical terms. B. Identify words parts, combining forms, combining vowels. C. Analyze different medical terms in the cardiovascular and lymphatic system. D. Practice, analyze and apply the different cardiovascular and lymphatic surgical terms. E. Analyze and apply the different cardiovascular and lymphatic system diagnostic terms. F. Practice, analyze and apply the different cardiovascular and lymphatic system surgical and procedural terms.				

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
<p>XI. Respiratory System</p> <ul style="list-style-type: none"> <li>A. Know the different anatomical terms.</li> <li>B. Identify words parts, combining forms, combining vowels.</li> <li>C. Analyze different medical terms in the respiratory system.</li> <li>D. Practice, analyze and apply the different respiratory surgical terms.</li> <li>E. Analyze and apply the different respiratory system diagnostic terms.</li> <li>F. Practice, analyze and apply the different respiratory system surgical and procedural terms.</li> </ul>				
<p>XII. Nervous System</p> <ul style="list-style-type: none"> <li>A. Know the different anatomical terms.</li> <li>B. Identify words parts, combining forms, combining vowels.</li> <li>C. Analyze different medical terms in the nervous system.</li> <li>D. Practice, analyze and apply the different nervous surgical terms.</li> <li>E. Analyze and apply the different nervous system diagnostic terms.</li> <li>F. Practice, analyze and apply the different nervous system surgical and procedural terms.</li> </ul>				
<p>XIII. Gastrointestinal System</p> <ul style="list-style-type: none"> <li>A. Know the different anatomical terms of the gastrointestinal system.</li> <li>B. Identify words parts, combining forms, combining vowels.</li> <li>C. Analyze different medical terms of the gastrointestinal system.</li> <li>D. Practice pronunciation of the different gastrointestinal system terms.</li> <li>E. Apply and analyze the different gastrointestinal system terms.</li> <li>F. Practice, analyze and apply the different gastrointestinal system surgical and procedural terms.</li> </ul>				

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
<p>XIV. Urinary System</p> <ul style="list-style-type: none"> <li>A. Know the different anatomical terms of the urinary system.</li> <li>B. Identify words parts, combining forms, combining vowels.</li> <li>C. Analyze different medical terms of the urinary system.</li> <li>D. Practice pronunciation of the different urinary system terms.</li> <li>E. Apply and analyze the different urinary system terms.</li> <li>F. Practice, analyze and apply the different urinary system surgical and procedural terms.</li> </ul>				
<p>XV. Male Reproductive System</p> <ul style="list-style-type: none"> <li>A. Know the different anatomical terms of the male reproductive system.</li> <li>B. Identify words parts, combining forms, combining vowels.</li> <li>C. Analyze different medical terms of the male reproductive system.</li> <li>D. Practice pronunciation of the different male reproductive system terms.</li> <li>E. Apply and analyze the different male reproductive system terms.</li> <li>F. Practice, analyze and apply the different male reproductive system surgical and procedural terms.</li> </ul>				
<p>XVI. Female System</p> <ul style="list-style-type: none"> <li>G. Know the different anatomical terms of the female reproductive system.</li> <li>H. Identify words parts, combining forms, combining vowels.</li> <li>I. Analyze different medical terms of the female reproductive system.</li> <li>J. Practice pronunciation of the different female reproductive system terms.</li> <li>K. Apply and analyze the different female reproductive system terms.</li> <li>L. Practice, analyze and apply the different female reproductive system surgical and procedural terms.</li> </ul>				

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
XVII. Treatment Modalities A. Ice Massage B. Electrical Modalities C. Massage D. Moist Heat E. Whirlpool F. Ultrasound G. Diathermy H. Operations & Safety	7			
XVIII. The Shoulder A. Brief Anatomy B. Biomechanics C. Mechanism D. Assessment & Treatment E. Injuries F. Injury Prevention, Taping, and Stripping G. Rehabilitation Exercises	5			
XIX. Arm, Elbow, and Forearm A. Brief Anatomy B. Injuries to the Arm C. Injuries to the Elbow D. Injuries to the Forearm E. Injury Prevention, Taping, and Wrapping F. Rehabilitation Exercises	5			
XX. Hand and Wrist A. Brief Anatomy B. Mechanisms of Injuries C. Rehabilitation of Injuries D. Injury Prevention, Taping, and Strapping	5			
XXI. Hip & Thigh A. Brief Anatomy B. Overuse Injuries of the Hip C. Hip Fractures & Dislocations D. Soft Tissue Injuries of the Thigh E. Thigh Fractures F. Injury Prevention-Spica Wrap G. Rehabilitation Exercises	5		ELA 9-10; R; 2.6.  S. 7; 5c ELA 9-10; R; 2.1, 2.2, 2.3, 2.5 W; 1.1-1.7, 1.9	

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
XXII. The Leg & Knee A. Brief Anatomy B. Mechanisms of Injury C. Evaluations of Knee Injuries D. Treatment of Acute Knee Injuries E. Testing of Knee Instabilities F. Disorders G. Management and Taping of Knee Injuries H. Rehabilitation of the Knee I. Rehabilitation Exercises J. Overuse Syndromes K. Traumatic Injuries L. Prevention M. Spiral & Spica Wraps	6			
XXIII. The Ankle & Foot A. Brief Anatomy B. Mechanisms of Injury C. Assessment D. Evaluation E. Soft Tissue Injuries F. Bone Injuries G. Injury Prevention H. Practical Application-Taping I. Rehabilitation Exercises	5			
XXIV. Site Visits/Internship A. OSPT B. Empire College C. HealthSouth D. Santa Rosa Junior College E. Sonoma State University F. Memorial Hospital G. TBA as Schedule Permits	90			

10. Additional recommended/optional items

- a. Articulation: None
- b. Academic credit: N/A
- c. Instructional strategies:
  - Methods of Instruction:
    - a. Lecture
    - b. Audio Visual Materials
    - c. Research Readings and Written Presentations
    - d. Homework Assignments
    - e. Group & Individual Activities
    - f. Quizzes, Tests & Final Exam
    - g. Internet Exploration
    - h. Job Shadowing & Internships
- d. Instructional materials: Teacher Generated
- e. Certificates: CPR