

**MT. DIABLO UNIFIED SCHOOL DISTRICT  
COURSE OF STUDY**

**COURSE TITLE:** Health Science II  
**COURSE NUMBER:** 042550  
**CBEDS NUMBER:** 7921  
**DEPARTMENT:** Health Science Academy  
**LENGTH OF COURSE:** 1 year  
**CREDITS PER SEMESTER:** 5 credits  
**GRADE LEVEL(S):** 11<sup>th</sup> grade  
**REQUIRED OR ELECTIVE:** Elective

**PREREQUISITES:**  
**Required -** Health Science 1  
Student in Health Care pathway  
**Recommended -**

**BOARD OF EDUCATION ADOPTION:**

**COURSE DESCRIPTION:** The course is designed for students in a health care pathway. This is a second year of a two course sequence designed to explore health care careers and to continue students' development of a foundation in Medical Terminology. Students will explore a career in the healthcare field specializing in various body systems and begin to plan for the career pathway they are interested in taking. They will also learn hospital abbreviation and medical terms for use in real world situations.

**COURSE PURPOSE:** This course is the second of a two course sequence. Upon completion they will earn articulation credit in Medical Terminology. It will continue its exploration of the different body systems, including the applicable medical terminology, structure and function, and diseases and disorders involving the different body systems. Students will also continue their exploration of the different careers involved in the treatment of the different diseases and disorders. Students will produce integrated health-related projects designed to educate the general public about a variety of topics within the health sciences. Students will complete this two course sequence with knowledge of the different body systems, the medical terminology around the different body systems, and different health care career options. This course is aligned with the CTE Model Standards in the Health Care industry sector, patient care pathway, and is aligned to the common core standards through the anchor standards for this specific pathway.

**COURSE OUTLINE:**

**Unit 1- Emergency Medical Careers**

In this unit, students learn about a variety of Emergency Health careers, including job descriptions, educational requirements, certifications needed, average salary data and local job outlooks. Students will also learn how to triage and treat a variety of conditions, such as problems with airway, circulation, breathing, bleeding, shock, burns, poisoning, bites and fractures.

## **Unit 2- American Heart Association (AHA)/ Basic Life Support (BLS) CPR for Health Professionals**

In this unit, students will learn the content and skills required to obtain an American Heart Association (AHA) certification for CPR and AED for healthcare professionals. These skills include adult, child and infant CPR, rescue breathing, proper AED usage, and choking treatments. Students will be required to pass written tests and demonstrate the proper skill for each of the above-mentioned life-saving modalities. They will also learn basic first aid and earn their First Aid Certification.

## **Unit 3- Medical Terms and the Body Review (Musculoskeletal, Cardiovascular, Respiratory)**

In this unit, students will be reviewing the Musculoskeletal, cardiovascular and respiratory systems that they learned in the previous year. For each system, students will review the basic functions and the definition, possible diseases associated with that system, the pronunciation and spelling of primary terms and possible careers that specialize in that system.

## **Unit 4- Lymphatic and Immunization System**

In this unit, students will learn the applicable medical terminology, structure and function, and disease and disorders associated with the immune system. Students will also explore the diagnostic and treatment procedures of the immune system. Finally, students will research different medical specialties related to the immune system.

## **Unit 5- Digestive System**

In this unit, students will learn the applicable medical terminology, structure, function, diseases and disorders associated with the digestive system. Students will also explore diagnostic and treatment procedures of the digestive system. Finally, students will research different medical specialties related to the digestive system.

## **Unit 6- Urinary System**

In this unit, students will learn the applicable medical terminology, structure, function, diseases and disorders associated with the urinary system. Students will also explore different diagnostic and treatment procedures of the urinary system. Finally, students will research the different medical specialties related to the treatment of the urinary system.

## **Unit 7- Nervous System and Mental Health**

In this unit, students will learn the applicable medical terminology, structure, function, diseases and disorders associated with the nervous system. Students will also explore different diagnostic and treatment procedures of the nervous system. Finally, students will research the different medical specialties related to the treatment of the nervous system.

## **Unit 8- Special Senses (Eyes and Ears)**

In this unit, students will learn the applicable medical terminology, structure, function, diseases and disorders associated with the eyes and ears. Students will also explore different diagnostic and treatment procedures of the eye and ear. Finally, students will research the different medical specialties related to the treatment of the eye and ear.

## **Unit 9- Nutrients and the Body**

In this unit, students will learn what the 6 main nutrients are and how they relate to the American Dietetic Association's (ADA) MyPlate and the food groups. They will learn to read labels, calculate the nutrient value of a food and learn how to create a one day meal plan. They will keep food logs and determine what they are deficient in as well as learn how to improve in specific areas.

## **Unit 10- Human and Health Diseases**

In this unit, students will be combining the introductory knowledge of the diseases that students were introduced to and complete a disease project in pairs. They will do deeper research into the disease itself, researching major symptoms, major treatments, and health care professions that specialize in their chosen disease. As part of the project, students will also engage in a job shadow with a medical professional.

### **KEY ASSIGNMENTS:**

#### **Unit 1:**

1. Students will identify and define terms related to emergency health care.
2. Students will research the different roles of various EMS personnel, including personal qualities, levels of education 7 credentialing requirements. They will create a career brochure on the EMS career of their choice and present it to the class.
3. Students will identify the different levels of care (triage) developed to provide first aid. They will practice the application of the different levels of triage through simulations.
4. Students will identify different types of external wounds, burns, poisoning, shock, fractures, and temperature issues a person might experience. Students will research and describe the appropriate first aid treatment for each.
5. Students will research and describe the signs, symptoms, and treatment for a CVA (stroke), MI (heart attack), and seizure activity. Students will create a PSA for one of these events.
6. Students will practice emergency treatments of a variety of conditions such as problems with airway, circulation, breathing, bleeding, shock, burns, poisoning, burns, bites and fractures.

#### **Unit 2:**

1. AHA Written Test for BLS CPR & AED usage
2. AHA written test for First Aid
3. Demonstrate the following:
  - 1- & 2-rescuer breathing emergency for adult, child and infant
  - 1- & 2-rescuer CPR & AED usage for adult, child and infant
  - Choking emergency for adult, child and infant
  - Ability to conduct first aid in an emergency situation

#### **Unit 3:**

1. Complete a review of each system
2. Review and update flashcards
3. Research and complete a mini presentation on one of the systems. Presentation includes functions and structures of the chosen system, diseases and disorders associated with the system, key terms, and possible careers connected to the system.

#### **Unit 4:**

1. Students will research and describe the major functions and structures of the lymphatic and immune systems.
2. Students will identify, define, spell, and pronounce the primary terms related to the structures, functions, pathology, and diagnostic and treatment procedures of the lymphatic and immune systems. Students will create flashcards for prefixes, suffixes and word roots to study.
3. Students will identify define, spell, and pronounce the primary terms related to oncology. Students will create flashcards for prefixes, suffixes and word roots to study.
4. Students will research and write a short paper on the medical specialists who treat disorders of the lymphatic and immune systems.

5. Students will research a different immunization and create a brochure on immunizations

### **Unit 5:**

1. Students will research and describe the major functions and structures of the digestive system.
2. Students will identify, define, spell, and pronounce the primary terms related to the pathology and the diagnostic and treatment procedures of the digestive system. Students will create flashcards for prefixes, suffixes and word roots to study.
3. Students will research and write a short paper about the medical specialists who treat disorders of the digestive system.
4. Research Digestive System diseases. Choose one disease and prepare a powerpoint that includes a description of the disease, how the disease impacts the system, symptoms of the disease, and they type of specialists that treat the disease.

### **Unit 6:**

1. Students will research and describe the major functions and structures of the urinary system.
2. Students will identify, define, spell and pronounce the primary terms related to the pathology and the diagnostic and treatment procedures of the urinary system. Students will create flashcards for prefixes, suffixes and word roots to study.
3. Students will research the different medical specialists that treat disorders of the urinary system and will prepare a class presentation about one of the specialties. The presentation will include a discussion on the education needed, credentials, and possible salaries.
4. Research different urinary system diseases. Students will write a short research paper on one of diseases or disorders involving the urinary system.

### **Unit 7:**

1. Students will research and describe the functions and structure of the nervous system. This will include identifying the major divisions of the nervous system and describing the structures of each by location and function.
2. Students will identify, define, spell, and pronounce the primary terms related to the pathology and the diagnostic and treatment procedures of the nervous system. Students will create flashcards for prefixes, suffixes and word roots to study.
3. Students will identify, define, spell, and pronounce the primary terms related to the pathology and the diagnostic and treatment procedures of mental health disorders. Students will create flashcards for prefixes, suffixes and word roots to study.
4. Students will research the different neurological disorders and the different medical specialists who treat disorders of the nervous system.
5. Students will interview a professional at John Muir Hospital and write a summary of that interview.

### **Unit 8:**

1. Students will research and in a short essay describe the functions and structures of the eyes and their accessory structures.
2. Students will identify, spell and pronounce the primary terms related to the structures and function, pathology, diagnostic and treatment procedures of the eyes and vision. Students will create flashcards for prefixes, suffixes and word roots to study.
3. Students will research and in a short essay describe the functions and structures of the ears

4. Students will identify, define, spell, and pronounce the primary terms related to the structures and function, pathology, diagnostic and treatment procedures of the ears and hearing. Students will create flashcards for prefixes, suffixes and word roots of study.
5. Students will research diseases related to the eyes and ears. They will choose one and do a presentation on their chosen disease. They will describe the disease, how it impacts the eyes and/or ears, treatment options and the medical specialty would treat the disease.

### **Unit 9:**

1. Students will research and create a poster that explains all six nutrients and their importance in the body
2. Students will interpret food labels and develop a menu that corresponds to the ADA MyPlate model.
3. Students will calculate calories of a food based on the different ingredients.
4. Students will identify, define, spell, and pronounce the primary terms related to dietetics. Students will create flashcards for prefixes, suffixes and word roots of study.
5. Students will maintain a five day food log. They will analyze their food log and write a short reflection on how well their diet met the nutritional recommendations of the ADA.
6. Students will research diseases related to nutrition and diet, including heart disease, hypertension and diabetes. Students will then write a one day meal plan for individuals with heart disease, individuals with hypertension and individuals with diabetes.

### **Unit 10:**

1. Students will define, describe major symptoms and identify and describe major treatments in written form (1/2 page minimum, single spaced).
2. Students will compare and contrast, in a Venn diagram or table chart, the different levels or types of the disease.
3. Students will create a historical timeline showing 10 major events for your disease.
4. Students will create a table to compare research studies about the disease and treatment option.
5. Students will construct an eating and exercise regimen that may help prevent and/or treat the disease (be sure to explain the significance of each component).
6. Students will summarize the effects of your disease on the past/present world and what has been done to eradicate, control or destroy it (should be ½ page single spaced or 1 page double spaced)
7. Students will explain three treatment options that are best for your type of disease- supporting your opinion with facts and scientific data (should be ½ page single spaced or 1 page double spaced)
8. Students will determine the impact of the research on the disease on people today (should be ½ page single spaced or 1 page double spaced)
9. Students will create a 10 question quiz, with answers, based on your knowledge of the disease.

### **INSTRUCTIONS METHODS and/or STRATEGIES:**

1. Project based learning
2. Guided inquiry projects
3. Direct instruction
4. Research
5. Diagrams
6. Guest speakers

### **ASSESSMENTS INCLUDING METHODS and/or TOOLS**

1. Project based learning, graded by rubric
2. Cumulative unit presentations
3. Unit exam
4. Visual Assessments during simulations and/or demonstrations of skills

## **INSTRUCTIONAL MATERIALS:**

**Title:** Emergency Medical Responder

**Publication Date:** 2011

**Publisher:** Jones and Bartlett Learning

**Author(s):** David Schottke, RN, NREMT-P, MPH

**Title:** Medical Terminology

**Publication Date:** 2017

**Publisher:** F.A. Davis Company

**Author(s):** Barbara A. Gylys and Mary Ellen Wedding

**Title:** Basic Life Support- Provider Manual

**Publication Date:** 2016

**Publisher:** American Heart Association

**Author(s):** American Heart Association

**Title:** Health Career Explorations

**Publication Date:** 2004

**Publisher:** Delmar, Cengage Learning

**Author(s):** Louise Simmons

**Title:** Wardlaw's Perspectives in Nutrition, 8<sup>th</sup> ed.

**Publication Date:** 2009

**Publisher:** McGraw Hill

**Author(s):** Carol Byrd-Bredbenner, Gaile Moe, Donna Beshgetoor and Jacqueline Berning

## **Supplemental Instructional Materials:**

### Guest Speakers:

EMT

Firefighter

Neurologist/nurse

Psychologist

Psychiatrist

Optometrist

Ear, Nose and Throat (ENT, Otolaryngologist) doctor

Dietician

### Field Trip(s):

EMT training facility

### Videos/Movies:

A Career in Emergency Medicine - [https://www.youtube.com/watch?v=4HhJM-k\\_NY](https://www.youtube.com/watch?v=4HhJM-k_NY)

CPR/First Aid video- <https://www.youtube.com/watch?v=PsWBYokX8hE>

A Day in the Life of an Ortho Surgeon- <https://www.youtube.com/watch?v=YfiLiIEJZ6Y>

How to use a TENS unit- <https://www.youtube.com/watch?v=Wo8igqC6-oY>  
EKG- <https://www.youtube.com/watch?v=FThXJUFWUrw>  
Pacemaker- <https://www.youtube.com/watch?v=z14sRusaaco>  
COPD- <https://www.youtube.com/watch?v=T1G9Rl65M-Q>  
Lung Cancer- <https://www.youtube.com/watch?v=I7tlPOEkjnw>  
Lymphatic and Immune system – YouTube- <https://www.youtube.com/watch?v=DXOAOmyh7-E>  
Lymphatic and Immune System Disease- <https://www.youtube.com/watch?v=kjLwVqxwaIM>  
Digestive System- <https://www.youtube.com/watch?v=yIoTRGfcMqM>  
Digestive System Diseases- <https://www.youtube.com/watch?v=yVBkVqQtAKU>  
Urinary System- You Tube- <https://www.youtube.com/watch?v=aUYciJjWe-I>  
Urinary System diseases- You Tube- [https://www.youtube.com/watch?v=vc6bD\\_90EWY](https://www.youtube.com/watch?v=vc6bD_90EWY)  
Neurology- You Tube- [https://www.youtube.com/watch?v=q8NtmDrb\\_qo&list=PLDy4bPtIIUB2iYNFQ-VpO4pyMEfZLSXdI](https://www.youtube.com/watch?v=q8NtmDrb_qo&list=PLDy4bPtIIUB2iYNFQ-VpO4pyMEfZLSXdI)  
Mental Health Professions- <https://www.youtube.com/watch?v=XA1V0bgvGNo>  
What does an ENT do?- You Tube- <https://www.youtube.com/watch?v=loXKUU--HTU>  
Nutrients and Their Functions- <https://www.youtube.com/watch?v=roB5Yyh37Uk>

#### PowerPoint:

Emergency Medical Careers  
Musculoskeletal system  
Cardiovascular System  
Respiratory System  
Lymphatic and Immune System  
Digestive System  
Urinary System  
Neurology  
Mental Health  
Ear, Nose and Throat  
Nutrients

#### Websites:

American Heart Association CPR/First Aid- [www.heart.org/cpr](http://www.heart.org/cpr)  
Influential People in Medicine: <https://www.medicaldaily.com/people-medicine-influence-history-374620>  
Hypertension- CDC- <https://www.cdc.gov/bloodpressure/index.htm>  
Heart Disease- Mayo Clinic-<https://www.mayoclinic.org/diseases-conditions/heart-disease/symptoms-causes/syc-20353118>  
Cancer- National Cancer Institute- <https://www.cancer.gov/>  
Lung Disease- American Lung Association- <https://www.lung.org/>  
American Cancer Society- <https://www.lung.org/>  
Lumen- <https://courses.lumenlearning.com/ap2/chapter/anatomy-of-the-lymphatic-and-immune-systems/>  
Diverticulitis, Crohn's disease, GERD- <https://www.livescience.com/22367-digestive-system.html>  
Mayo Clinic- Diverticulitis- <https://www.mayoclinic.org/diseases-conditions/diverticulitis/symptoms-causes/syc-20371758>  
Mayo Clinic- Crohn's disease- <https://www.mayoclinic.org/diseases-conditions/crohns-disease/symptoms-causes/syc-20353304>  
Urinary tract infections- <https://www.livescience.com/27012-urinary-system.html>  
NAMI - <https://www.nami.org/>  
American Academy of Neurology- <https://www.aan.com/>  
American Academy of Otolaryngologist- <https://www.enthealth.org/whats-an-ent/>  
MyPlate - <https://www.choosemyplate.gov/dietary-guidelines>  
Dietary Guidelines for Americans- <https://health.gov/dietaryguidelines/2015/>

American Dietetic Association (ADA)- <https://www.eatright.org/>

CTE/Career Resources:

Job search- [www.jobs.ca.gov](http://www.jobs.ca.gov)

Health Careers- <https://explorehealthcareers.org/health-career-resources/health-career-exploration/>

Jobs in Dietetics- <https://www.nutritioned.org/careers.html>