



# Introduction to Health Science

<b>Primary Career Cluster:</b>	Health Science
<b>Consultant:</b>	Sloan Hudson, (615) 532-2839, <a href="mailto:Sloan.Hudson@tn.gov">Sloan.Hudson@tn.gov</a>
<b>Course Code(s):</b>	0837
<b>Prerequisite(s):</b>	None
<b>Credit:</b>	N/A
<b>Grade Level:</b>	8
<b>Graduation Requirements:</b>	N/A
<b>Programs of Study and Sequence:</b>	This course serves as a middle school primer for all programs of study in the Health Science career cluster.
<b>Aligned Student Organization(s):</b>	HOSA: <a href="http://www.tennesseehosa.org">http://www.tennesseehosa.org</a> Pamela Grega, (615) 532-6270, <a href="mailto:Pamela.Grega@tn.gov">Pamela.Grega@tn.gov</a>
<b>Coordinating Work-Based Learning:</b>	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit <a href="https://www.tn.gov/education/topic/work-based-learning">https://www.tn.gov/education/topic/work-based-learning</a> .
<b>Available Student Industry Certifications:</b>	None
<b>Dual Credit or Dual Enrollment Opportunities:</b>	N/A
<b>Teacher Endorsement(s):</b>	001,015,016,101,123,126,127,210,211,212,400,401,402,415,416,440
<b>Required Teacher Certifications/Training:</b>	Middle School teachers are encouraged to coordinate the teaching of this course with the corresponding high school Health Science program.
<b>Teacher Resources:</b>	<a href="https://www.tn.gov/education/article/cte-cluster-health-science">https://www.tn.gov/education/article/cte-cluster-health-science</a>

## Course Description

*Introduction to Health Science* introduces middle school students to the exciting, dynamic world of the health sciences, an industry that is rapidly changing and high in demand for workers who can think critically to solve a range of health-related problems. Students will explore healthcare systems, legal and ethical issues in healthcare and basic healthcare skills. Upon completion of this course, proficient students will be prepared to pursue courses in high school that lead to careers in the fields of biotechnology research, therapeutics, health informatics, diagnostics, and support services.

## Program of Study Application

This is an exploratory course for all health science programs of study. For more information on the benefits and requirements of implementing these programs in full, please visit the Health Science website at <https://www.tn.gov/education/article/cte-cluster-health-science>.

## Course Standards

### Career Planning

- 1) Identify key innovators and contributions made in the history of health care in the United States. Create a timeline or other graphic to illustrate major developments beginning with the first medical school through today, citing sources such as textbooks or online encyclopedias.
- 2) Prepare a paper or electronic career profile for at least one occupation in one of the five health science career areas (biotechnology research, therapeutic services, support services, health informatics, and diagnostic services), to be included as part of a health science portfolio. Document the following related to the chosen occupation:
  - a. A job description synthesized from print or online sources, such as government occupational profiles
  - b. A brief biography or profile of a famous person who is known for this job, or, alternatively, a short narrative about a family or community member who holds this occupation
  - c. The career path, level of education attained, and any additional training this person pursued in the course of successfully reaching his/her occupational goals

The career profile can be compiled based on information drawn from textbooks, online encyclopedias, government websites, and similar sources, or from personal interviews with the family or community member chosen for the profile.

- 3) Draw evidence from occupational profiles, industry journals, and textbooks to summarize the professional traits (such as leadership, ethical responsibility, and time management) required of healthcare professionals in the twenty-first century.

### Healthcare Systems

- 4) Identify the types of healthcare facilities in the United States. Compile a list of healthcare professionals that work in these facilities. Compare and contrast the salaries of at least three healthcare professionals in two different sites, and create a report and/or presentation on these comparisons.
- 5) Define the terms culture, ethnicity, and race. Research customs, beliefs, and practices surrounding health care from another culture, ethnicity, or race, and relate findings in a written, oral, or digital presentation. Compare and contrast how aspects such as respect, informed consent and medical decision making, medical testing, and social context vary across different cultures and populations.

- 6) Differentiate between the methods of payment for healthcare in the United States. Compare and contrast private and state/federal insurance, health savings accounts, and managed care.

### **Body Function and Structure**

- 7) Outline the basic normal structure and function of all body systems. Present a visual illustration of a system within the human body, listing the basic structures and using medical terminology for each.
- 8) Distinguish between the medical definitions of health and wellness, identifying preventive measures and behaviors that promote each. Discuss contemporary controversies to wellness theories, such as but not limited to the debates surrounding concussion evaluation of middle and high school athletes, increased use of drugs and alcohol by middle school students, and alternative diets, e.g., those geared toward dramatic weight loss.
- 9) Develop a patient health education presentation surrounding one of the following wellness issues: exercise and fitness, healthy eating and nutrition, sleep, the increase in food allergies, noise-induced hearing loss, or other topic approved by the instructor. Include signs and symptoms of the behavior and/or disease, major associated physical and/or mental concerns, preventive measures, and support systems. Include at least two resources drawn from textbooks, online healthcare journals, or websites (such as MedLine Plus, National Institute of Health, or the Centers for Disease Control).

### **Infection Control/Medical Microbiology**

- 10) Define chain of infection and provide strategies for how to break each part of the chain to prevent infection. Evaluate professional journals or news articles for examples of infectious outbreak within a community and the implications on an individual's health. Capture those findings in a written, oral, or digital presentation, citing evidence from the investigation.
- 11) Understand the principles of and successfully perform the following skills to prevent or curtail the spread of pathogenic and non-pathogenic organisms:
  - a. Hand washing
  - b. Sneeze and cough prevention

### **Foundational Healthcare Skills**

- 12) Understand principles of and successfully perform skills related to Emergency Medicine, incorporating rubrics from American Heart Association or American Red Cross such as:
  - a. Basic First Aid care of bleeding and wounds
  - b. Basic First Aid care for burns
  - c. Basic First aid for bone and joint injuries
- 13) Understand principles of and successfully perform skills reacted to Medical Assisting Skills, incorporating rubrics from textbook or clinical standards of practice:
  - a. Temperature, pulse and respiration assessment
  - b. Screening for vision problems

- 14) Understand principles of and successfully perform skills related to Physical Therapy Skills, incorporating rubrics from textbook or clinical standards of practice:
  - a. Ambulation with crutches
  
- 15) Understand principles of and successfully perform skills related to Athletic Training, incorporating rubrics from textbook or clinical standards of practice:
  - a. Basic stretching exercises
  
- 16) Understand principles of and successfully perform skills related to Forensic Scientist, incorporating rubrics from textbook or clinical standards of practice:
  - a. Extraction of DNA

### **Standards Alignment Notes**

\*References to other standards include:

- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
  - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.