

Chapter 121. Texas Essential Knowledge and Skills for Health Science Technology Education

Subchapter A. Coherent Sequence, High School

Statutory Authority: The provisions of this Subchapter A issued under the Texas Education Code, §28.002, unless otherwise noted.

§121.1. Implementation of Texas Essential Knowledge and Skills for Health Science Technology Education, Coherent Sequence.

The provisions of this chapter shall supersede §75.84 of this title (relating to Health Occupations Education) beginning September 1, 1998.

Source: The provisions of this §121.1 adopted to be effective September 1, 1998, 22 TexReg 5014.

§121.2. Introduction to Health Science Technology (One-Half to One Credit).

- (a) General requirements. This course is recommended for students in Grades 9-12.
 - (b) Introduction.
 - (1) To pursue a career in health care, students should know how to learn, reason, think critically, make decisions, solve problems, and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.
 - (2) The health care industry is comprised of diagnostic, therapeutic, informational, and environmental systems that function individually and collaboratively to provide comprehensive health care. Students should understand the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health career through further education and/or employment.
 - (3) Professional integrity in health care is dependent on acceptance of ethical and legal responsibilities. Students are expected to understand their ethical and legal responsibilities, limitations, and the implications of their actions.
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- (c) Knowledge and skills.
 - (1) The student applies math, science, English language arts, and social studies in health science.

The student is expected to:
(A) add, subtract, multiply, and divide rational numbers in health-related problems;
(B) apply data from tables, charts, and graphs to estimate and find solutions to health-related problems;
(C) organize, write, and compile ideas into reports and summaries;
(D) make contributions relevant to topics in group discussions;

- (E) survey and research the historical significance of health care;
 - (F) describe the impact of health services on the economy;
 - (G) identify age and cultural influences that have impacted contemporary aspects of health care delivery;
 - (H) identify human needs according to Maslow's Hierarchy of Human Needs;
 - (I) describe the stages of development related to the life span; and
 - (J) identify the concepts of health and wellness through the life span.
- (2) The student knows ethical behavior standards and legal responsibilities of health care professionals.
- The student is expected to:
- (A) compare published professional codes of ethics;
 - (B) identify responsible and ethical behavior;
 - (C) identify ethical issues related to health care delivery;
 - (D) describe the consequences of breach of confidentiality;
 - (E) research and describe laws governing the health care industry; and
 - (F) differentiate between malpractice and negligence.
- (3) The student knows characteristics of a health care worker.
- The student is expected to:
- (A) describe personal characteristics of a health care worker from the perspective of a consumer; and
 - (B) select effective health and wellness routines for health care workers, including stress management.
- (4) The student knows the importance of the health care team in providing client care.
- The student is expected to:
- (A) explain the concept of teaming to provide quality health care; and
 - (B) explain the role of professional organizations in the preparation and governance of credentialed health care workers.

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| (5) The student knows the leadership skills necessary to function in a democratic society. | The student is expected to:
(A) identify traits of a leader; and
(B) demonstrate skills, characteristics, and responsibilities of leaders and group members. |
| (6) The student identifies the systems related to health occupations. | The student is expected to:
(A) review health careers within the therapeutic, diagnostic, informational, and environmental systems;
(B) identify the collaborative role of team members between systems to deliver quality health care; and
(C) identify technology utilized in each of the four systems. |
| (7) The student knows the systems that finance health care in a free enterprise society. | The student is expected to:
(A) compare and contrast hospice, health maintenance organizations, preferred provider organizations, and other care providers;
(B) research and describe escalating health care costs and identify individual responsibility in cost containment; and
(C) research and describe industry efforts in cost containment, energy conservation, and accountability practices. |
| (8) The student uses technology to access, process, and retrieve information. | The student is expected to:
(A) utilize keyboarding skills to access, process, and retrieve information; and
(B) describe technology applications in the health care industry. |

Source: The provisions of this §121.2 adopted to be effective September 1, 1998, 22 TexReg 5014.

§121.3. Health Science Technology I (One to Two Credits).

- (a) General requirements. This course is recommended for students in Grades 9-12. The recommended prerequisites for this course are Introduction to Health Science Technology and Biology, as a prerequisite or concurrent enrollment.
- (b) Introduction.
 - (1) To pursue a career in health care, students should know how to learn, reason, think critically, make decisions, solve problems, and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.

- (2) The health care industry is comprised of diagnostic, therapeutic, informational, and environmental systems that function individually and collaboratively to provide comprehensive health care. Students should understand the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health career through further education and/or employment.
- (3) Professional integrity in health care is dependent on acceptance of ethical and legal responsibilities. Students are expected to understand their ethical and legal responsibilities, limitations, and the implications of their actions.

(c) Knowledge and skills.

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| (1) The student applies math, science, English language arts, and social studies in health science. | The student is expected to: <ol style="list-style-type: none">(A) convert units between systems of measurements;(B) use measurement functions for client assessment;(C) interpret technical material related to health care;(D) demonstrate use of precise language to clearly communicate ideas;(E) plan and prepare effective oral presentations;(F) describe biological and chemical processes that maintain homeostasis;(G) identify principles of body mechanics and movement;(H) analyze forces and the effects of movement, torque, tension, and elasticity on the human body;(I) analyze the impact of local, state, and national government on the health care industry; and(J) compare and contrast strategies used by various cultures to solve problems related to health. |
| (2) The student knows verbal and nonverbal communication skills. | The student is expected to: <ol style="list-style-type: none">(A) identify components of effective communication;(B) identify barriers to effective communication;(C) evaluate the use of verbal and nonverbal language in a variety of health care scenarios; |

- (D) adapt communication to the needs of the individual in a diverse society;
 - (E) develop communication skills that are responsive rather than reactive;
 - (F) accurately interpret, transcribe, and communicate medical vocabulary; and
 - (G) demonstrate use of appropriate telecommunications technology.
- (3) The student documents and archives client records.
- The student is expected to:
- (A) review the structure and composition of client records;
 - (B) compile and record client data; and
 - (C) demonstrate the ability to chart and graph.
- (4) The student knows professional characteristics as defined by the health care industry.
- The student is expected to:
- (A) identify professional characteristics of health care providers; and
 - (B) describe employer expectations such as communication, organizational skills, and productive work habits.
- (5) The student knows career options and the preparation necessary for employment in the health care industry.
- The student is expected to:
- (A) locate, evaluate, and interpret career options and employment information;
 - (B) demonstrate the procedures necessary to seek and secure employment;
 - (C) demonstrate step-by-step procedures for problem solving;
 - (D) predict the impact of career decisions; and
 - (E) anticipate and adapt to changing employment situations.
- (6) The student knows the skills necessary to maintain employment.
- The student is expected to:
- (A) identify employer expectations of punctuality, attendance, and time management;
 - (B) identify industry safety standards; and
 - (C) demonstrate appropriate actions in emergency situations.
- (7) The student knows ethical behavior standards and legal responsibilities.
- The student is expected to:
- (A) recognize ethical behavior standards;

- (8) The student knows client's rights and choices.

 - (B) identify ethical considerations resulting from technological advances;
 - (C) describe the effects of unethical practices on consumers;
 - (D) demonstrate the principles of confidentiality;
 - (E) identify legal requirements and scope of practice for students in health care delivery;
 - (F) recognize noncompliance and its effects; and
 - (G) identify issues related to malpractice, negligence, and liability.

The student is expected to:

 - (A) evaluate situations related to client autonomy;
 - (B) review documentation related to client's rights and choices; and
 - (C) develop awareness of age, cultural, and religious diversity as it relates to client care.
- (9) The student identifies the leadership skills necessary to function in a democratic society.

The student is expected to:

 - (A) demonstrate leadership skills for goal setting and team building; and
 - (B) demonstrate the ability to conduct effective meetings according to Robert's Rules of Order, Newly Revised.
- (10) The student uses standard precautions to control the spread of infection.

The student is expected to:

 - (A) identify the cycle of the infectious process;
 - (B) identify guidelines of standard precautions; and
 - (C) demonstrate skills related to infection control.
- (11) The student knows the importance of maintaining a safe environment and eliminating hazardous situations.

The student is expected to:

 - (A) identify regulatory agencies such as Occupational Safety and Health Administration (OSHA) and Food and Drug Administration (FDA);
 - (B) identify legislation that mandates an employer's obligation to provide a safe workplace;

- (C) identify fire prevention and safety practices;
 - (D) recognize hazardous materials and situations;
 - (E) demonstrate safe use of chemicals and equipment;
 - (F) identify, demonstrate, and practice principles of body mechanics; and
 - (G) practice personal and client safety.
- (12) The student knows the technology utilized in the diagnostic, therapeutic, informational, and environmental systems.
- The student is expected to:
- (A) identify equipment utilized in each of the four systems;
 - (B) utilize appropriate equipment in the delivery of health care services; and
 - (C) recognize and report equipment malfunctions.
- (13) The student demonstrates multi-competent health care worker knowledge and skills.
- The student is expected to:
- (A) assess client status and accurately determine vital signs;
 - (B) move, lift, and transport clients safely;
 - (C) manage client hygiene;
 - (D) monitor client nutrition;
 - (E) respond to emergencies appropriately;
 - (F) demonstrate skills related to activities of daily living;
 - (G) demonstrate skills associated with rehabilitative care such as range of motion, positioning, and ambulation;
 - (H) evaluate techniques in dealing with stressful situations, such as trauma and death and dying;
 - (I) demonstrate skills in caring for the dying patient;
 - (J) manage client information appropriately; and
 - (K) evaluate environmental management procedures.
- (14) The student uses technology to access, process, and retrieve information.
- The student is expected to:
- (A) enhance keyboarding skills and correspond using electronic messages;

- (B) identify the processes for collection and dissemination of health care data; and
- (C) predict changes in technology.

Source: The provisions of this §121.3 adopted to be effective September 1, 1998, 22 TexReg 5014.

§121.4. Health Science Technology II (Two to Four Credits).

- (a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites for this course are Health Science Technology I, Biology, and Chemistry.
- (b) Introduction.
 - (1) To pursue a career in health care, students should know how to learn, reason, think critically, make decisions, solve problems, and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.
 - (2) The health care industry is comprised of diagnostic, therapeutic, informational, and environmental systems that function individually and collaboratively to provide comprehensive health care. Students should understand the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health career through further education and/or employment.
 - (3) Professional integrity in health care is dependent on acceptance of ethical and legal responsibilities. Students are expected to understand their ethical and legal responsibilities, limitations, and the implications of their actions.

(c) Knowledge and skills.

- (1) The student applies math, science, English language arts, and social studies in health science.

The student is expected to:

- (A) perform mathematical calculations appropriate to work-based learning situations;
- (B) use measurement functions in multiple-step conversion problems;
- (C) communicate using medical terminology;
- (D) express ideas in writing and develop skills in documentation;
- (E) interpret complex technical material related to health care;
- (F) use multiple methods of presenting information, such as client teaching;
- (G) assess biological and chemical processes that maintain homeostasis;
- (H) associate the disease process with changes in homeostasis;

- (I) identify the changes in structure and function due to trauma and disease;
 - (J) research and describe community health care resources; and
 - (K) research and describe the role of an international society in the prevention and containment of disease.

- (2) The student uses verbal and non-verbal communication skills.
 - The student is expected to:
 - (A) use language appropriate to the situation;
 - (B) evaluate client's ability to understand communication;
 - (C) identify language barriers and select alternative methods of communication;
 - (D) adapt communication to accommodate individual needs;
 - (E) practice verbal and nonverbal skills when communicating with persons with hearing and vision loss; and
 - (F) utilize telecommunication technology with appropriate supervision.

- (3) The student documents and archives data.
 - The student is expected to:
 - (A) retrieve information from client records;
 - (B) report client information according to facility protocol; and
 - (C) review and summarize technical reports.

- (4) The student knows career options and the preparation necessary for employment in the health care industry.
 - The student is expected to:
 - (A) research and describe specific health careers;
 - (B) demonstrate procedures to gain employment;
 - (C) identify entrepreneurship opportunities in the free enterprise system; and
 - (D) practice personal finance management.

- (5) The student solves problems and makes decisions.
 - The student is expected to:
 - (A) demonstrate step-by-step procedures for problem solving;
 - (B) predict the impact of decisions on client care; and

- (6) The student knows the knowledge and skills necessary to maintain employment.
- (7) The student knows ethical behavior standards and legal responsibilities.
- (8) The student knows the leadership skills necessary to function in a democratic society.
- (C) demonstrate appropriate response to emergency situations.
- The student is expected to:
- (A) comply with specific industry standards related to safety and substance abuse;
- (B) fulfill attendance and punctuality expectations;
- (C) articulate understanding of assignment;
- (D) utilize medical vocabulary specific to the health care setting;
- (E) apply principles of time management when performing tasks; and
- (F) fulfill industry expectations related to professional conduct.
- The student is expected to:
- (A) identify ethical dilemmas such as Do Not Resuscitate (DNR);
- (B) comply with ethical behavior standards;
- (C) comply with industry standards of confidentiality;
- (D) comply with protocol of the health care setting;
- (E) comply with legal requirements and function within the designated scope of practice; and
- (F) comply with the client's Bill of Rights.
- The student is expected to:
- (A) identify leadership skills of health care professionals;
- (B) research and describe the role of professional organizations in maintaining standards;
- (C) participate in group dynamics;
- (D) identify consensus-building techniques;
- (E) use problem-solving skills to resolve conflicts;
- (F) identify procedures for due process; and
- (G) use parliamentary procedure to conduct meetings.

- (9) The student uses standard precautions to control the spread of infection.
- The student is expected to:
- (A) comply with standard precautions; and
 - (B) practice prescribed techniques to prevent nosocomial infections.
- (10) The student maintains a safe environment to prevent hazardous situations.
- The student is expected to:
- (A) identify and practice fire prevention according to facility protocol;
 - (B) maintain personal and client safety;
 - (C) apply principles of body mechanics to minimize personal and client injury;
 - (D) observe and report unsafe conditions; and
 - (E) follow protocol related to hazardous materials and situations.
- (11) The student knows wellness strategies for the prevention of disease.
- The student is expected to:
- (A) research and describe wellness strategies for the prevention of disease;
 - (B) identify the availability of health screenings and examinations; and
 - (C) research and describe alternative health practices and therapies.
- (12) The student demonstrates skills in monitoring client health status during therapeutic and diagnostic procedures.
- The student is expected to:
- (A) observe client during care and procedures;
 - (B) accurately measure and report client vital signs and other indicators of health status; and
 - (C) record client health status according to facility protocol.
- (13) The student follows the steps of diagnostic procedural set-ups.
- The student is expected to:
- (A) identify and collect appropriate supplies and equipment necessary for a procedure;
 - (B) explain procedure to the client;
 - (C) maintain and calibrate equipment to monitor quality; and
 - (D) report abnormal results and take action.

- (14) The student demonstrates information management skills.
- The student is expected to:
- (A) use technology to access, process and retrieve information with appropriate supervision;
 - (B) perform admission, discharge, and transfer functions;
 - (C) accurately complete a variety of informational forms; and
 - (D) perform data entry skills to process client information.
- (15) The student maintains a clean and healthy environment.
- The student is expected to:
- (A) monitor, observe, and report unsafe environmental conditions;
 - (B) prevent the spread of pathogens by cleaning, disinfecting, or sterilizing;
 - (C) maintain a sanitary food service environment and practice proper food handling procedures;
 - (D) conform to Occupational Safety and Health Administration (OSHA) standards and other regulatory guidelines; and
 - (E) practice recycling and waste management for containment costs and environmental protection.
- (16) The student demonstrates knowledge and skills specific to an occupational system.
- The student is expected to:
- (A) know information specific to occupational areas; and
 - (B) perform occupationally-specific skills according to industry standards.
- (17) The student identifies equipment used in the health care industry.
- The student is expected to:
- (A) identify electronic equipment used in diagnostic, therapeutic, informational, and environmental systems;
 - (B) use appropriate equipment in the delivery of health care services; and
 - (C) demonstrate problem-solving skills to repair, maintain, and operate equipment consistent with level of training.

Source: The provisions of this §121.4 adopted to be effective September 1, 1998, 22 TexReg 5014.

§121.5. Health Science Technology III (One to Two Credits).

- (a) General requirements. This course may be offered for one or two semesters. This course is recommended for students in Grades 11-12. The recommended prerequisite for this course is Health Science Technology II.
- (b) Introduction.
 - (1) To pursue a career in health care, students should know how to learn, reason, think critically, make decisions, solve problems, and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.
 - (2) The health care industry is comprised of diagnostic, therapeutic, informational, and environmental systems that function individually and collaboratively to provide comprehensive health care. Students should understand the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health career through further education and/or employment.
 - (3) Professional integrity in health care is dependent on acceptance of ethical and legal responsibilities. Students are expected to understand their ethical and legal responsibilities, limitations, and the implications of their actions.

(c) Knowledge and skills.

- (1) The student applies math, science, English language arts, and social sciences in health science.
 - The student is expected to:
 - (A) interpret data from various sources to make conclusions;
 - (B) compile information from a variety of sources to create a technical report;
 - (C) research, write, and present a technical report;
 - (D) plan, prepare, and deliver a presentation;
 - (E) identify the environmental factors that affect homeostasis;
 - (F) observe and relate anatomical structure to physiological functions;
 - (G) identify atypical anatomy and physiology;
 - (H) use the scientific method to prepare clinical case studies;
 - (I) compare and contrast community health issues of the United States with other countries; and
 - (J) compare and contrast various health care reform plans.

- (2) The student uses verbal and non-verbal communication skills.

The student is expected to:

- (A) accurately describe observations and procedures related to client care;
- (B) demonstrate advanced communication skills to provide quality client care; and
- (C) identify barriers to communication and take measures to minimize their effects.

- (3) The student knows the knowledge and skills necessary to maintain employment.

The student is expected to:

- (A) monitor and evaluate his/her own performance to ensure continuous improvement;
- (B) adjust career goals based on personal interests and clinical experiences;
- (C) describe the steps necessary for entrepreneurship in a free enterprise system;
- (D) identify and follow procedures for advancement, resignation, or relocation;
- (E) transfer knowledge and skills to new situations and apply problem-solving strategies;
- (F) demonstrate proficiency in medical terminology; and
- (G) update skills to enhance employability.

- (4) The student knows ethical behavior standards and legal responsibilities.

The student is expected to:

- (A) practice ethical behavior standards;
- (B) comply with industry standards of confidentiality;
- (C) comply with protocol and legal requirements and perform within the designated scope of practice; and
- (D) review court cases related to professional liability and ethics.

- (5) The student knows the importance of functioning as a health care team member.

The student is expected to:

- (A) participate in team teaching;
- (B) refine consensus-building techniques;
- (C) manage conflicts using peer mediation, problem-solving, and negotiation skills; and

- (D) identify leadership opportunities in the community.
- (6) The student maintains a safe environment to prevent hazardous situations.
- The student is expected to:
- (A) comply with standard precautions;
 - (B) teach principles of body mechanics to others;
 - (C) develop a fire prevention plan;
 - (D) respond to emergency situations consistent with level of training;
 - (E) participate in a disaster drill; and
 - (F) comply with regulatory standards and guidelines.
- (7) The student demonstrates multi-competent health care worker knowledge and skills.
- The student is expected to:
- (A) identify knowledge and skills that are transferable among occupations;
 - (B) predict client's needs for follow-up or alternative care;
 - (C) update skills to enhance employability; and
 - (D) identify emerging technologies in the health care industry.

Source: The provisions of this §121.5 adopted to be effective September 1, 1998, 22 TexReg 5014.

