

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

### Subchapter C. Integrated Occupational, High School

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

#### **§121.21. Implementation of Texas Essential Knowledge and Skills for Health Science Technology Education, Integrated Occupational.**

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 §121.21 adopted to be effective September 1, 1998, 22 TexReg 5014.*

#### **§121.22. Medical Terminology (One-Half 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.

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| <ul style="list-style-type: none"><li>(1) The student knows the terminology related to health care.</li></ul> | <p>The student is expected to:</p> <ul style="list-style-type: none"><li>(A) identify abbreviations, acronyms, and symbols;</li><li>(B) identify the basic structure of medical words;</li><li>(C) practice word-building skills;</li><li>(D) research the origins of eponyms;</li><li>(E) use directional terms and anatomical planes related to body structure; and</li></ul> |
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- (2) The student knows how to communicate using the terminology applicable to the health care industry.
- (3) The student uses available resources.
- (4) The student appropriately uses health care terms.
- (F) accurately spell and define occupationally specific terms relating to body systems, surgical and diagnostic procedures, diseases, and treatments.
- The student is expected to:
- (A) use appropriate verbal and written strategies to meet the demands of the speaker, audience, purpose, and occasion;
- (B) correctly pronounce medical terms;
- (C) employ increasingly precise language to communicate;
- (D) evaluate the use of verbal and written language in a variety of health care scenarios; and
- (E) read and interpret technical material related to health care.
- The student is expected to:
- (A) use medical and dental dictionaries and multimedia resources;
- (B) use resources to interpret technical materials; and
- (C) utilize electronic media such as the Internet and other telecommunications, with appropriate supervision.
- The student is expected to:
- (A) accurately interpret, transcribe, and communicate vocabulary related to health care;
- (B) translate medical terms to conversational language to facilitate communication; and
- (C) report observations using medical terminology.

*Source: The provisions of this §121.22 adopted to be effective September 1, 1998, 22 TexReg 5014.*

**§121.23. Gerontology (One-Half Credit).**

- (a) General requirements. The recommended prerequisite for this course is Health Science Technology I. This course is recommended for students in Grades 10-12.
- (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.

(c) Knowledge and skills.

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| <ul style="list-style-type: none"> <li>(1) The student applies math, science, English language arts, and social studies in health science.</li> </ul> | <p>The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) research and describe myths regarding aging;</li> <li>(B) review a variety of cultural responses to aging;</li> <li>(C) identify the sociological impact of a "graying" America on health care delivery by performing an analysis of predictions into the 21st century;</li> <li>(D) research and describe the social services available to older adults;</li> <li>(E) identify the psychological aspects of aging including coping, adaptation, depression, and suicide; and</li> <li>(F) describe individual responses to death and dying and review the Dying Person's Bill of Rights.</li> </ul> |
| <ul style="list-style-type: none"> <li>(2) The student identifies the aging process.</li> </ul>   | <p>The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) identify the patterns of change in the aging individual;</li> <li>(B) identify physiological changes related to disease, environmental factors, and chronological age;</li> <li>(C) identify the impact of age on outcomes of frequently occurring diseases;</li> </ul>  |

- (D) compare and contrast genetic and non-genetic theories of aging;
  - (E) identify the effects of aging on intelligence, learning, and memory;
  - (F) identify the nutritional needs of older adults; and
  - (G) identify pharmaceutical concerns with older persons including drug interactions from multiple medications.
  
- (3) The student uses communication skills appropriate for geriatrics.
  - The student is expected to:
    - (A) learn vocabulary associated with geriatrics;
    - (B) communicate with older adults and their families;
    - (C) interpret verbal and nonverbal messages and provide appropriate feedback;
    - (D) adapt communication to the needs of the aging person who has sensory or mental impairment; and
    - (E) interpret technical material related to gerontology.
  
- (4) The student knows ethical behavior standards and legal responsibilities.
  - The student is expected to:
    - (A) identify resident's rights and choices;
    - (B) review ethical dilemmas related to older adults; and
    - (C) comply with ethical behavior standards.
  
- (5) 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) identify protocol to manage hazardous materials;
    - (C) maintain personal and resident safety in the clinical setting;
    - (D) observe and report unsafe environmental conditions; and
    - (E) apply principles of body mechanics to maintain personal and resident safety.

- (6) The student uses standard precautions to control the spread of infection.
- The student is expected to:
- (A) demonstrate skills related to infection control;
  - (B) practice isolation procedures; and
  - (C) comply with standard precautions.
- (7) The student demonstrates the knowledge and skills of a geriatric health care worker.
- The student is expected to:
- (A) assess residents and accurately determine vital signs;
  - (B) move, lift, and transport residents safely;
  - (C) assist residents with ambulation aids;
  - (D) monitor resident nutrition;
  - (E) manage resident hygiene;
  - (F) comply with facility protocol for residents' comfort;
  - (G) maintain resident environment;
  - (H) respond to emergency situations such as strains and bruises, vomiting and aspirations, syncope, falls, hemorrhage and seizures;
  - (I) accurately record and report resident information;
  - (J) care for the dying resident; and
  - (K) identify skills related to post-mortem care.
- (8) The student demonstrates how to prepare for employment in long-term care or other health care settings.
- The student is expected to:
- (A) identify requirements established for certification; and
  - (B) identify advantages of certification.
- (9) The student identifies how to function as a team member in a variety of health care settings.
- The student is expected to:
- (A) participate as a team member; and
  - (B) use coping skills and practice stress management.
- (10) The student identifies electronic equipment used in the health care industry.
- The student is expected to:
- (A) use appropriate equipment in the delivery of health care services;
  - (B) recognize and report equipment malfunctions; and

- (C) maintain and operate equipment consistent with level of training.

Source: The provisions of this §121.23 adopted to be effective September 1, 1998, 22 TexReg 5014.

**§121.24. Clinical Nutrition (One-Half Credit).**

- (a) General requirements. This course is recommended for students in Grades 11-12. The recommended prerequisite for this course is Health Science Technology I.
- (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) use measurement functions and perform mathematical calculations;
- (B) interpret charts and graphs and technical material;
- (C) identify biological and chemical processes;
- (D) observe and relate anatomical structure to physiological functions, including the disease process;
- (E) research and describe the impact of nutrition on world health;
- (F) describe the impact of government on nutrition programs and services;
- (G) research and describe the historical and future availability of food;
- (H) identify nutritional practices of various cultures and age groups; and
- (I) identify causes of malnutrition.

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

The student is expected to:

- (A) adapt communication to the needs of the client;
  - (B) demonstrate ability in charting and graphing; and
  - (C) compile, interpret, and disseminate client information.
  
- (3) The student demonstrates how to gain employment in clinical nutrition.

The student is expected to:

  - (A) locate, evaluate, and interpret career opportunities;
  - (B) identify the role of the nutritional team;
  - (C) fulfill attendance, punctuality, and time management expectations; and
  - (D) comply with industry standards related to safety and substance abuse.
  
- (4) The student knows ethical behavior standards and legal responsibilities.

The student is expected to:

  - (A) comply with standards of ethical behavior and legal responsibility; and
  - (B) comply with industry standards of confidentiality.
  
- (5) The student maintains a safe environment to prevent hazardous situations.

The student is expected to:

  - (A) practice personal and client safety;
  - (B) review the cycle of the infectious process;
  - (C) comply with standard precautions;
  - (D) demonstrate safe use of chemicals and equipment;
  - (E) recognize hazardous materials;
  - (F) identify and practice fire prevention according to facility protocol;
  - (G) practice principles of body mechanics;
  - (H) identify regulatory agencies such as Food and Drug Administration (FDA), Occupational Safety and Health Administration (OSHA), and public health departments; and
  - (I) practice compliance of regulatory standards and guidelines used in food services.
  
- (6) The student assesses and evaluates nutritional practices.

The student is expected to:

  - (A) select and analyze nutritional information;

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|     |   | (B) determine nutritional needs of various age groups;                      |
|     |   | (C) research and describe nutritional preferences of various cultures;      |
|     |   | (D) recognize nutritional needs of clients;                                 |
|     |   | (E) research and describe nutritional and eating disorders;                 |
|     |   | (F) identify the types of therapeutic diets; and                            |
|     |   | (G) describe food additives and food allergies.                             |
| (7) | The student demonstrates occupationally specific knowledge and skills of the health care worker in the area of nutrition. | The student is expected to:   |
|     |   | (A) identify alternative methods of nutrition;                              |
|     |   | (B) identify the effects of chemotherapy and radiation on client nutrition; |
|     |   | (C) identify nutritional needs during pregnancy and lactation;              |
|     |   | (D) demonstrate skills in the assessment of nutritional needs; and          |
|     |   | (E) prepare, implement, and evaluate therapeutic care plans.                |
| (8) | The student identifies equipment and technology for nutritional services.   | The student is expected to:   |
|     |   | (A) use technology to access, process, and retrieve information; and        |
|     |   | (B) use appropriate electronic equipment.                                   |

Source: The provisions of this §121.24 adopted to be effective September 1, 1998, 22 TexReg 5014.

**§121.25. Pharmacology (One-Half Credit).**

- (a) General requirements. This course is recommended for students in Grades 11-12. The 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.

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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) convert units between systems of measurement;
- (B) use measurement functions such as calculations of dosages;
- (C) interpret technical material related to pharmacology;
- (D) investigate biological and chemical processes in various age groups;
- (E) analyze the impact of pharmaceuticals on the costs of health care; and
- (F) research and describe the impact of pharmaceuticals on society.

- (2) The student identifies career options and the preparation necessary for employment in pharmacology.

The student is expected to:

- (A) identify career options related to pharmacology;
- (B) define the role of the pharmacy team; and
- (C) research and describe emerging pharmaceutical careers, such as biotechnology medicine.

- (3) The student knows ethical behavior standards and legal responsibilities as related to pharmacology.

The student is expected to:

- (A) recognize and describe ethical behavior standards;
- (B) describe the effects of unethical practices on consumers;
- (C) identify the principles of confidentiality;
- (D) identify legal requirements and scope of practice;
- (E) evaluate the effects of noncompliance;
- (F) research and describe issues of malpractice, negligence, and liability; and
- (G) describe situations related to client's rights and choices.

- (4) The student maintains a safe environment to prevent hazardous situations.

The student is expected to:

- (A) identify and practice fire prevention;
- (B) recognize hazardous materials;
- (C) demonstrate safe use of chemicals and equipment;
- (D) practice personal safety; and
- (E) identify regulatory agencies such as Occupational Safety and Health Administration (OSHA), Drug Enforcement Administration (DEA), and Food and Drug Administration (FDA).

- (5) The student demonstrates the knowledge and skills related to pharmacology.

The student is expected to:

- (A) demonstrate use of drug references including Physicians' Desk Reference (PDR);
- (B) identify drug names, classifications, actions and interactions;
- (C) identify indications and contraindications of drugs;
- (D) identify side effects, toxic effects, and adverse reactions of drugs;
- (E) identify routes of administrations;
- (F) compare and contrast Food and Drug Administration (FDA) approved pharmaceuticals to alternative medicines; and
- (G) accurately interpret, transcribe, and communicate vocabulary.

- (6) The student identifies technology used in pharmacology.

The student is expected to:

- (A) identify the technology utilized in a variety of health care settings; and
- (B) use technology to access, process, and retrieve information with appropriate supervision.

*Source: The provisions of this §121.25 adopted to be effective September 1, 1998, 22 TexReg 5014.*

**§121.26. Mental Health (One-Half Credit).**

- (a) General requirements. This course is recommended for students in Grades 11-12. The 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.

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| <ul style="list-style-type: none"> <li>(1) The student applies math, science, English language arts, and social studies in health science.</li> </ul> | <p>The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) evaluate the use of verbal and nonverbal language in a variety of mental health scenarios;</li> <li>(B) describe anatomy, physiology, and pathophysiology of the nervous system;</li> <li>(C) identify societal perspectives related to mental health;</li> <li>(D) identify the physiological effects of stress and aging;</li> <li>(E) research and describe the psychological aspects of health and wellness across the life span;</li> <li>(F) identify socioeconomic factors that influence mental health and care;</li> <li>(G) identify social services such as drug dependency rehabilitation centers;</li> <li>(H) identify maladaptive conditions such as paranoia, schizophrenia, and aggression; and</li> <li>(I) research and describe treatment options.</li> </ul> |
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- (2) The student uses verbal and nonverbal communication skills.

The student is expected to:

- (A) interpret verbal and nonverbal messages and adapt communication to the needs of the individual;
- (B) use listening skills and techniques to minimize communication barriers; and
- (C) demonstrate communication skills that are responsive rather than reactive.

- (3) The student identifies career options and the preparation necessary for employment in mental health.

The student is expected to:

- (A) identify career opportunities related to mental health;
- (B) practice the concept of teaming;
- (C) predict the consequences of decisions;
- (D) demonstrate techniques of peer mediation, problem solving, and negotiation;
- (E) accurately interpret, transcribe, and communicate medical vocabulary.

- (4) The student knows the ethical behavior standards and legal responsibilities related to mental health.

The student is expected to:

- (A) identify ethical practices;
- (B) practice the principles of confidentiality;
- (C) research and describe legal aspects and issues of malpractice, negligence, and liability;
- (D) identify designated scope of practice of professionals;
- (E) define client rights and choices;
- (F) review case studies related to client rights and choices;
- (G) identify circumstances that alter client rights;
- (H) review legislation that effects standards of client care; and
- (I) identify regulatory agencies such as the Mental Health and Mental Retardation Agency.

- (5) The student maintains a safe environment to prevent hazardous situations.

The student is expected to:

- (A) identify abusive situations;
- (B) anticipate and adapt to changing situations;

- (C) demonstrate appropriate actions in emergency situations; and
  - (D) practice personal and client safety.
- (6) The student knows the technology related to information services.
- The student is expected to:
- (A) identify the processes for collection and dissemination of health care data;
  - (B) identify equipment used in the delivery of mental health services; and
  - (C) use technology consistent with level of training.

*Source: The provisions of this §121.26 adopted to be effective September 1, 1998, 22 TexReg 5014.*