

# Respiratory Therapy I

Subject: Career Development and Career and Technical Education

Grade: 11

Expectations: 38

Breakouts: 96

## (a) Introduction.

1. Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.
  2. The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.
  3. Respiratory Therapy I is a technical lab course that addresses knowledge and skills related to cardiopulmonary medicine. Respiratory therapists are specialized healthcare practitioners trained in cardiopulmonary medicine to work therapeutically with people suffering from cardiopulmonary diseases. Students will learn basic knowledge and skills performed by respiratory therapists using equipment such as: stethoscopes, sphygmomanometers, thermometers, pulse oximeters, oxygen delivery devices (nasal cannula, masks of various types), nebulizers, and airway clearance and hyperinflation therapy devices.
  4. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations, including:
  5. work-based experiences/learning; and
  6. volunteering/shadowing opportunities. th  
individuals with language differences/barriers
- (ii) demonstrate therapeutic communication appropriate to the situation, including communication with individuals with sensory loss

- (D) evaluate the effectiveness of conflict resolution techniques in various situations; and
    - (i) evaluate the effectiveness of conflict resolution techniques in various situations
  - (E) demonstrate the ability to cooperate, contribute, and collaborate as a member of a team.
    - (i) demonstrate the ability to cooperate as a member of a team
    - (ii) demonstrate the ability to contribute as a member of a team
    - (iii) demonstrate the ability to collaborate as a member of a team
- (2) The student applies mathematics, science, English language arts, and social studies in respiratory therapy. The student is expected to:
- (A) interpret complex technical material related to respiratory therapy;
    - (i) interpret complex technical material related to respiratory therapy
  - (B) identify how race, culture, and religion impact patient care;
    - (i) identify how race impact[s] patient care
    - (ii) identify how culture impact[s] patient care
    - (iii) identify how religion impact[s] patient care
  - (C) solve mathematical calculations related to respiratory therapy; and
    - (i) solve mathematical calculations related to respiratory therapy
  - (D) summarize biological and chemical processes that maintain homeostasis.
    - (i) summarize biological processes that maintain homeostasis
    - (ii) summarize chemical processes that maintain homeostasis
- (3) The student investigates the history and profession of respiratory therapy, including education and licensure. The student is expected to:
- (A) analyze the advancement of respiratory therapy practices over time;
    - (i) analyze the advancement of respiratory therapy practices over time
  - (B) summarize the roles of respiratory therapists in various settings; and
    - (i) summarize the roles of respiratory therapists in various settings
  - (C) identify academic requirements for respiratory therapist and professional advancement opportunities such as professional organizations, credentials, certifications, registrations, licensure, continuing education, and advanced degrees.
    - (i) identify academic requirements for respiratory therapist opportunities
    - (ii) identify academic requirements for professional advancement opportunities
- (4) The student applies regulatory and safety standards in a respiratory therapy setting. The student is expected to:

- (A) identify and conform to regulations and guidelines from entities such as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), Occupational Safety and Health Administration (OSHA), U.S. Food and Drug Administration (FDA), The Joint Commission, the National Institute of Health (NIH), Texas Commission on Environmental Quality (TCEQ), Texas Department of State and Health Services (DSHS), and American Association for Respiratory Care (AARC);
    - (i) identify regulations from entities
    - (ii) identify guidelines from entities
    - (iii) conform to regulations from entities
    - (iv) conform to guidelines from entities
  - (B) identify infection control standard and transmission-based precautions in the patient care setting, including hand hygiene, equipment sterilization, and the use of personal protective equipment (PPE); and
    - (i) identify infection control standard precautions in the patient care setting, including hand hygiene
    - (ii) identify infection control standard precautions in the patient care setting, including equipment sterilization
    - (iii) identify infection control standard precautions in the patient care setting, including the use of personal protective equipment (PPE)
    - (iv) identify transmission-based precautions in the patient care setting, including hand hygiene
    - (v) identify transmission-based precautions in the patient care setting, including equipment sterilization
    - (vi) identify transmission-based precautions in the patient care setting, including the use of personal protective equipment (PPE)
  - (C) identify industry safety standards, including standards for body mechanics, fire prevention, electrical safety, oxygen safety, and the handling of hazardous materials.
    - (i) identify industry safety standards, including standards for body mechanics
    - (ii) identify industry safety standards, including standards for fire prevention
    - (iii) identify industry safety standards, including standards for electrical safety
    - (iv) identify industry safety standards, including standards for oxygen safety
    - (v) identify industry safety standards, including the handling of hazardous materials
- (5) The student investigates the structure and function of cardiopulmonary anatomy. The student is expected to:
- (A) analyze the cardiovascular system, including ventricles, atrium, valves, blood vessels, nerves, blood flow, and cardiac conduction system;
    - (i) analyze the cardiovascular system, including ventricles
    - (ii) analyze the cardiovascular system, including atrium
    - (iii) analyze the cardiovascular system, including valves
    - (iv) analyze the cardiovascular system, including blood vessels
    - (v) analyze the cardiovascular system, including nerves
    - (vi) analyze the cardiovascular system, including blood flow
    - (vii) analyze the cardiovascular system, including cardiac conduction system

- (B) explain the respiratory system, including airways, trachea, lungs, and pulmonary vessels that aid the body in the exchange of gases;
    - (i) explain the respiratory system, including airways
    - (ii) explain the respiratory system, including trachea
    - (iii) explain the respiratory system, including lungs
    - (iv) explain the respiratory system, including pulmonary vessels that aid the body in the exchange of gases
  - (C) trace the blood flow through the cardiopulmonary system; and
    - (i) trace the blood flow through the cardiopulmonary system
  - (D) examine a variety of human diseases and disorders affecting the cardiopulmonary system such as chronic obstructive pulmonary disease (COPD), asthma, pneumonia, cystic fibrosis, and lung cancer.
    - (i) examine a variety of human diseases affecting the cardiopulmonary system
    - (ii) examine a variety of human disorders affecting the cardiopulmonary system
- (6) The student develops knowledge pertaining to respiratory therapy procedures. The student is expected to:
- (A) demonstrate the use of breathing exercises for patients with cardiopulmonary disease such as pursed lipped breathing and diaphragmatic breathing;
    - (i) demonstrate the use of breathing exercises for patients with cardiopulmonary disease
  - (B) explain the use of hyperinflation and



- (C) demonstrate patient care techniques used in high stress respiratory therapy situations such as non-compliant, combative, and distressed patients; and
  - (i) demonstrate patient care techniques used in high stress respiratory therapy situations
- (D)