

Emergency Medical Services

Primary Career Cluster:	Health Science
Course Content:	CTE.Standards@tn.gov
Course Code(s):	C14H13
Prerequisite(s):	<i>Health Science Education (C14H14), Medical Therapeutics (C14H15), and Anatomy & Physiology (G03H31 or C14H09)</i>
Credit:	1
Grade Level:	11-12 and students enrolled in this course must be 17 years old before the course concludes.
Student-Teacher Ratio:	12:1
Focus Elective Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other Health Science courses.
POS Concentrator:	This course satisfies one out of two required courses to meet the Perkins V concentrator definition, when taken in sequence in the approved program of study.
Programs of Study and Sequence:	This is the fourth course in <i>Emergency Services</i> program of study.
Aligned Student Organization(s):	HOSA: http://www.tennesseehosa.org
Coordinating Work-Based Learning:	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit https://www.tn.gov/education/career-and-technical-education/work-based-learning.html
Available Student Industry Credentials:	Credentials are aligned with postsecondary and employment opportunities and with the competencies and skills that students acquire through their selected program of study. For a listing of promoted student industry credentials, visit https://www.tn.gov/education/career-and-technical-education/student-industry-certification.html
Teacher Endorsement(s):	577, 720, 751
Required Teacher Certifications/Training:	Teachers must be WBL training certified. NOTE: If the teacher is not an authorized EMS Instructor at the EMR level, the teacher must partner with an authorized EMS Instructor at the EMR level who will provide 60 hours of instruction and coordinate with the local office of EMS for student certification.
Teacher Resources:	https://www.tn.gov/education/career-and-technical-education/career-clusters/cte-cluster-health-science.html Best for All Central: https://bestforall.tnedu.gov/

Course-at-a-Glance

CTE courses provide students with an opportunity to develop specific academic, technical, and 21st century skills necessary to be successful in career and in life. In pursuit of ensuring every student in Tennessee achieves this level of success, we begin with rigorous course standards which feed into intentionally designed programs of study.

Students engage in industry relevant content through general education integration and experiences such as career & technical student organizations (CTSO) and work-based learning (WBL). Through these experiences, students are immersed with industry standard content and technology, solve industry-based problems, meaningfully interact with industry professionals, and use/produce industry specific, informational texts.

Using a Career and Technical Student Organization (CTSO) in Your Classroom

CTSOs are a great resource to put classroom learning into real-life experiences for your students through classroom, regional, state, and national competitions, and leadership opportunities. Below are CTSO connections for this course, note this is not an exhaustive list.

- Participate in CTSO Fall Leadership Conference to engage with peers by demonstrating logical thought processes and developing industry specific skills that involve teamwork and project management
- Participate in contests that highlight job skill demonstration; interviewing skills; community service activities, extemporaneous speaking, and job interview
- Participate in leadership activities such as Organizational Leadership, Prepared Speaking, HOSA Service Project, Creative Problem Solving, and HOSA Service Project.

For more ideas and information, visit Tennessee HOSA at <http://www.tennesseehosa.org/>

Using Work-based Learning in Your Classroom

Sustained and coordinated activities that relate to the course content are the key to successful work-based learning. Possible activities for this course include the following. This is not an exhaustive list.

- **Standards 1.1-1.6** | Shadow an emergency medical responder
- **Standards 2.1-2.4** | Interview a mental health professional about stress in emergency response careers.
- **Standards 3.1-3.3** | Visit a 911 call center
- **Standards 4.1-4.4** | Invite a law enforcement officer to discuss preservation of evidence the scene.
- **Standards 5.1-5.7** | Partner with an EMS professional to practice using the equipment commonly used by emergency medical responders.

For more ideas and information, visit <https://www.tn.gov/education/career-and-technical-education/work-based-learning.html>.

Course Description

Emergency Medical Services is a capstone course in the Emergency Medical Services program of study and is designed to prepare students to pursue careers in the fields of emergency medicine. Upon completion of this course, proficient students will be able to: identify careers and features of the

EMS system; define the importance of workforce safety and wellness; maintain legal and ethical guidelines; correlate anatomy and physiology concepts to the patient with a medical or traumatic injury; and perform EMS skills with a high level of proficiency. If taught with an EMT instructor, students will be given the opportunity to sit for the National Emergency Medical Responder certification. In addition, students will continue to add artifacts to a portfolio, which they will continue to build throughout the program of study.

Each standard presumes that the expected knowledge and behaviors are within the scope of practice for that EMS licensure level, as defined by the National EMS Scope of Practice Model. Each competency applies to patients of all ages, unless a specific age group is identified. The standards also presume there is a progression in practice from the Emergency Medical Responder level to the Paramedic level. The descriptors used to illustrate the increasing complexity of knowledge and behaviors through the progression of licensure levels originate, in part, from the National EMS Scope of Practice Model.

Note: If this course is taught for EMR certification, the program must be approved by the TN Department of Health, Office of Emergency Medical Services. The student to teacher ratio for this course is 12:1.

Students enrolled in this course must be 17 years old before the course concludes.

Program of Study Application

This is the capstone course in the *Emergency Services* program 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/career-and-technical-education/career-clusters/cte-cluster-health-science.html>

Course Requirements

This capstone course aligns with the requirements of the Work-Based Learning Framework (established in Tennessee State Board High School Policy), with the Tennessee Department of Education's Work-Based Learning Policy Guide, and with state and federal Child Labor Law. As such, the following components are course requirements:

Course Standards

1. EMS Systems and Operations

- 1.1 EMS systems and operation: Compare and contrast the types of Emergency Medical Services (EMS) systems and operations, including ground, water, and air services. For each type of service, discuss how the public accesses EMS systems, the advantages and disadvantages, special considerations, and safety issues. Discuss the roles played by the state departments of EMS and the National Highway Traffic Safety Administration.

- 1.2 Geographic information systems and global positioning systems: Research the **history of mapping, geographic information systems (GIS), global positioning systems (GPS), remote sensing, and other geospatial technologies**. Examine how these technologies have evolved in the area of EMS and discuss their **impact on the EMS system**.
- 1.3 EMS careers: Differentiate between the **careers in various types of EMS**. Research and document educational requirements as well as state and national guidelines governing practicing professionals (such as licensing, initial certifications, re-certifications, training, and compliance). Identify **personal and physical characteristics required** of an EMS professional in a career portfolio.
- 1.4 Quality improvement in emergency care: Evaluate concepts of **quality improvement** to provide safe, high quality, and appropriate patient care and the impact of research on EMR care. Connect examples of research that has had an impact on **improvements in emergency care** for patients and/or victims of accidents/injuries.
- 1.5 Risks and responsibilities of EMS personnel: Outline the **risks and responsibilities** facing the **emergency response team** during **ambulance operations**. Address at minimum the following: apparatus and equipment readiness; pre-arrival considerations, especially for high-risk situations; scene safety of personnel and patient(s); traffic; 360-degree assessments; and how to leave a scene.
- 1.6 Vehicle extrication concepts and roles: Research and summarize the **concepts surrounding vehicle extrication**, including safe vehicle extrication, tools used, and patient considerations. Include in the summary **common guidelines** related to the following: roles of EMS; safety of staff, patients, and situation; vehicle stabilization; unique hazards; additional resources needed; and extrication considerations.

2. Safety and Wellness

- 2.1 Requirements for EMS personnel: Appraise physical, mental, and personal requirements for personnel in emergency and public safety services. Document what the “profile of proficiency” looks like for professionals in these fields—for example, what scores are needed on a physical, mental, or emotional fitness test, and what guidelines must be followed for personal disease/disorder control.
- 2.2 Stress management procedures, techniques, and strategies: Investigate **stress management procedures** for professionals in the emergency response and public service sectors. Identify **stressors and stress-inducing situations** through interviews with professionals in the field. Identify **techniques and strategies for managing and alleviating stress**. Communicate recommendations for the use of these strategies, citing the source(s) of information.
- 2.3 Infection control in EMS: Compare and contrast the difference in **Standard Precautions, personal protective clothing, and personal protective equipment (PPE) in EMS** from

other healthcare settings. Outline response steps if **exposed to hazardous or bloodborne pathogens**. Demonstrate **donning and doffing of all PPE** and the care of **soiled equipment or vehicles**.

2.4 Scene safety and management: Interpret **scene management and safety standards and/or protocols** for the following: (a) traffic or highway incidents, (b) violent encounters, (c) crowds, (d) nature of illness or mechanisms of injury, (e) number of patients and/or victims, and (f) personnel injury prevention. Identify the **appropriate responses from EMS professionals** and any additional resources that would be involved.

2.5 NIMS compliance courses: Complete the free **FEMA Emergency Management Institute's NIMS compliance courses** ICS-200 (Single Resources and Initial Action Incidents) and IS-5A (Introduction to Hazardous Materials). Review content from the IS-700, IS-800, and ICS-100 tests. Connect **roles and responsibilities of the EMR and other team members** with the **situations described in the FEMA courses**.

3. EMS and Communications

3.1 Medical Terminology: Analyze and interpret vocabulary related to emergency medicine, as well as abbreviations. Demonstrate mastery of **medical terminology** use and accurate spelling through verbal and written explanation.

3.2 Calling for additional assistance: Identify **situations in which an Emergency Medical Responder (EMR) would call for additional assistance** upon arrival at a scene including agencies that would be called. Demonstrate the **transfer of care of the patient**, incorporating pertinent information such as the patient's condition, history of what happened, care given, etc.

3.3 Effective therapeutic communication: Review the concepts of **effective therapeutic communication**. Examine **interview techniques** used during therapeutic communication and identify potential **hazards of interviewing**.

4. Legal/Ethical Guidelines

4.1 Pre-hospital care report and incident communication: Interpret the rules, guidelines, and legal ramifications related to **incident documentation** by EMS staff. Complete a **pre-hospital care** report utilizing **appropriate medical terminology** and the acronyms **SAMPLE, DCAP-BTLS, and OPQRST**.

4.2 HIPAA, consent, and legal directives: Summarize the **Health Insurance Portability and Accountability Act (HIPAA)**. Explain characteristics of consent, confidentiality, advanced directives, living wills, durable power of attorney, and other legal directives governing

medical treatment. Using appropriate **medical and legal terminology**, explain how the content of these legal documents impacts **patients' rights** for all aspects of care.

- 4.3 Ethics and professional conduct: Examine real-world situations that involve ethical dilemmas and the application of correct professional conduct as highlighted in recent news articles. Defend the importance of ethics and professional standards for persons working in Emergency Medical Services occupations. Argue the relevance of professional codes of conduct within scope of practice and the importance of following professional code guidelines.
- 4.4 Reservation of evidence and mandatory reporting: Research legal ramifications and responsibilities of the EMR associated with **evidence preservation and mandatory reporting requirements within the EMS system**. Identify the **process for reporting** specific situations to the appropriate authorities, such as child abuse and/or crimes.

5. Patient Assessment/Evaluation and Treatment

- 5.1 Illness and injury assessment: Accurately perform the **components of patient assessment** to identify and manage **immediate life-threatening illnesses and injuries** within the scope of practice of the EMR for pediatric, adult, and geriatric patients, utilizing rubrics from textbooks, National HOSA guidelines, or clinical standards of practice. Include the following areas:
- a. Scene Size-up
 - b. Primary Survey or Assessment
 - c. History Taking
 - d. Secondary Assessment
 - e. Vital Signs
 - f. Reassessment
- 5.2 Illness management: Identify and manage **life-threatening illnesses**. Identify and perform skills to manage life threatening illnesses based on assessment findings of a pediatric, adult, and geriatric patient with **medical emergencies** identifying **anatomical structures** involved. Utilize rubrics from textbooks, National HOSA guidelines, or clinical standards of practice in the following areas:
- a. Altered mental status
 - b. Seizures
 - c. Stroke
 - d. Gastrointestinal bleeding
 - e. Anaphylaxis
 - f. Infectious diseases
 - g. Diabetes
 - h. Psychological emergencies
 - i. Chest pain
 - j. Poisoning
 - k. Respiratory distress/Asthma

- l. Vaginal bleeding
- m. Nosebleeds

5.3 Shock and arrest recognition and management: Use assessment information to recognize **shock, respiratory failure or arrest, and cardiac arrest** based on assessment findings. Demonstrate the ability to **manage the situation** while awaiting additional emergency response.

5.4 CPR: Successfully perform American Red Cross or American Heart Association adult, child, and infant **Basic Life Support (BLS) cardiopulmonary resuscitation (CPR) for Healthcare Providers or BLS for Prehospital Providers**.

5.5 Trauma management recognition and management skills: Research and evaluate **National Trauma Triage Protocol**. Identify and perform **skills to manage life threatening injuries** based on assessment findings of a patient with **trauma emergencies**, identifying **anatomical structures** involved. Utilize rubrics from textbooks, National HOSA guidelines, or clinical standards of practice in the following areas:

- a. Internal and external bleeding
- b. Chest trauma such as sucking chest wound and impaled objects in chest
- c. Abdominal trauma such as eviscerations and impaled objects
- d. Orthopedic trauma such as fractures, dislocations, amputations
- e. Soft tissue trauma, burns, dressings, and bandages
- f. Head, facial, neck and spine trauma such as head injuries, scalp injuries, and injuries to spine
- g. Environmental emergencies such as submersion and exposure to heat and cold
- h. Multi-system trauma

5.6 Life threatening situations involving children, the elderly, and maternity patients: Recognize and manage **life threats** based on simple assessment findings for special population patients such as **children, the elderly, and maternity patients** while awaiting additional emergency response. Utilize rubrics from textbooks, National HOSA guidelines, or clinical standards of practice for the following situations:

- a. Vaginal bleeding in pregnant patients
- b. Signs of labor and delivery
- c. Steps in pre-hospital delivery
- d. Initial care of neonates
- e. Care of mother after delivery
- f. Pediatric respiratory distress, seizures, and Sudden Infant Death Syndrome (SIDS)
- g. Geriatric care
- h. Child, elderly, and domestic partner abuse

5.7 Human development and psychological norms: Discuss **developmental and psychological norms** for all ages, including pediatric and geriatric patients relating **normal vs abnormal psychological response to illness and injury**.

The following artifacts will reside in the student's portfolio:

- Skills performance rubrics
- Documentation of job shadowing hours
- Classroom contact hours, if applicable
- Examples of written, oral, or digital presentations

Standards Alignment Notes

*References to other standards include:

- National Highway Traffic Safety Administration National Emergency Medical Services Education Standards for Emergency Medical Responders (EMR).
 - All standards are aligned to the [National EMS Educational Standards](#) and [EMR Instructional Guidelines](#) and approved by the Tennessee Department of Emergency Medical Services.
 - Key for alignment: P-Preparatory, AP-Anatomy and Physiology, MT-Medical terminology, PT-Pathophysiology, LD- Life Span Development, PH-Public Health, Pharm-Pharmacology, AW-Airway Management, Respirations and Artificial Ventilation, A-Assessment, M-Medicine, S-Shock and Resuscitation, T-Trauma, SP-Special Patient Populations, EM-EMS Operations
- 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.
- Federal Emergency Management Agency, [National Incident Management Systems](#) Emergency Management Institute curriculum