



2024 Emergency Medical Services

Program CIP: 51.0904 — Emergency Medical Technology/Technician EMT Paramedic

Direct inquiries to:

Project Manager
Research and Curriculum Unit
P.O. Drawer DX
Mississippi State, MS 39762
662.325.2510
helpdesk@rcu.msstate.edu

Program Supervisor
Office of Career and Technical Education
Mississippi Department of Education
P.O. Box 771
Jackson, MS 39205
601.359.3974

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Research and Curriculum Unit
Mississippi State University
Mississippi State, MS 39762

The Research and Curriculum Unit (RCU), located in Starkville, as part of Mississippi State University (MSU), was established to foster educational enhancements and innovations. In keeping with the land-grant mission of MSU, the RCU is dedicated to improving the quality of life for Mississippians. The RCU enhances the intellectual and professional development of Mississippi students and educators while applying knowledge and educational research to the lives of the people of the state. The RCU works within the contexts of curriculum development and revision, research, assessment, professional development, and industrial training.

Table of Contents

Acknowledgments.....	3
Standards	5
Preface	6
Mississippi Teacher Professional Resources	7
Executive Summary	8
Course Outline	10
Career Pathway Outlook	11
Professional Organizations.....	14
Using This Document	15
Unit 1: Introduction to EMS Systems and Operations.....	16
Unit 2: Anatomy and Physiology.....	19
Unit 3: Airway	20
Unit 4: Pathophysiology, Shock, and Resuscitation	22
Unit 5: Patient Assessment	24
Unit 6: Medical Pharmacology	25
Unit 7: Trauma.....	27
Unit 8: Special Patient Populations.....	29
Unit 9: Technical Rescue Support Skills.....	31
Unit 10: Basic Life Support.....	32
Student Competency Profile.....	33
Appendix A: Industry Standards.....	35

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Standards

Standards and alignment crosswalks are referenced in the appendix. Depending on the curriculum, these crosswalks should identify alignment to the standards mentioned below, as well as possible related academic topics as required in the Subject Area Testing Program in Algebra I, Biology I, English II, and U.S. History from 1877, which could be integrated into the content of the units. Mississippi's CTE Emergency Medical Services is aligned to the following standards:

National Emergency Medical Services (EMS) Education Standards

Reprinted with permission, 2021. U.S. Department of Transportation. (2021). National EMS Educational Standards. Washington, D.C.: Author. naemse.org/page/Standards

The National Registry of Emergency Medical Technicians (NREMT), The Nation's Emergency Medical Service Certification Organization

Reprinted with permission, 2021. National Registry of Emergency Medical Technicians. (2021). Detroit, MI.: Author. nremt.org

International Society for Technology in Education Standards (ISTE)

Reprinted with permission from *ISTE Standards for Students* (2016). All rights reserved. Permission does not constitute an endorsement by ISTE (iste.org).

College- and Career-Readiness Standards

College- and career-readiness standards emphasize critical thinking, teamwork, and problem-solving skills. Students will learn the skills and abilities demanded by the workforce of today and the future. Mississippi adopted Mississippi College- and Career-Readiness Standards (MCCRS) to provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them.

mdek12.org/oae/college-and-career-readiness-standards

Framework for 21st Century Learning

In defining 21st-century learning, the Partnership for 21st Century Skills has embraced key themes and skill areas that represent the essential knowledge for the 21st century: global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; environmental literacy; learning and innovation skills; information, media, and technology skills; and life and career skills.

battelleforkids.org/networks/p21/frameworks-resources

Preface

Secondary CTE programs in Mississippi face many challenges resulting from sweeping educational reforms at the national and state levels. Schools and teachers are increasingly being held accountable for providing applied learning activities to every student in the classroom. This accountability is measured through increased requirements for mastery and attainment of competency as documented through both formative and summative assessments. This document provides information, tools, and solutions that will aid students, teachers, and schools in creating and implementing applied, interactive, and innovative lessons. Through best practices, alignment with national standards and certifications, community partnerships, and a hands-on, student-centered concept, educators will be able to truly engage students in meaningful and collaborative learning opportunities.

The courses in this document reflect the statutory requirements as found in Section 37-3-49, *Mississippi Code of 1972*, as amended (Section 37-3-46). In addition, this curriculum reflects guidelines imposed by federal and state mandates (Laws, 1988, Ch. 487, §14; Laws, 1991, Ch. 423, §1; Laws, 1992, Ch. 519, §4 eff. from and after July 1, 1992; Strengthening Career and Technical Education for the 21st Century Act, 2019 [Perkins V]; and Every Student Succeeds Act, 2015).

Mississippi Teacher Professional Resources

The following are resources for Mississippi teachers:

Curriculum, Assessment, and Professional Learning

Program resources can be found at the RCU's website, rcu.msstate.edu.

Learning Management System: An Online Resource

Learning management system information can be found at the RCU's website, under Professional Learning.

Should you need additional instructions, contact the RCU at 662.325.2510 or helpdesk@rcu.msstate.edu.

Executive Summary

Pathway Description

The Emergency Medical Services (EMS) is an enhancement course in the law, public safety, corrections, and security career cluster. This program is designed for students who wish to obtain the knowledge and skills required for competent practice by EMS professionals across various career paths and to maintain a registry of certification status. This pathway will prepare students to provide immediate lifesaving care to patients who can access the emergency medical services system. In addition, students will learn the necessary skills to assist higher-level personnel at the scene of emergencies and during transport.

College, Career, and Certifications

Students who successfully complete this course may begin the certification process to become a Nationally Registered Emergency Medical Responder (NREMR) or a Nationally Registered Emergency Medical Technician (NREMT). This course will prepare students for entry-level positions as EMS personnel across the state. Colleges and universities offer educational programs that enable students to obtain advanced degrees as emergency medical technicians or paramedics.

Grade Level and Class Size Recommendations

It is recommended that students enter this program as juniors or seniors. Exceptions to this are a district-level decision based on class size, enrollment numbers, student maturity, and CTE delivery method. This is a hands-on, lab- or shop-based course. Therefore, a maximum of 15 students is recommended per class with only one class with the teacher at a time.

Student Prerequisites

For students to experience success in the program, the following student prerequisites are suggested:

1. C or higher in English (the previous year)
 2. C or higher in high school-level math (last course taken or the instructor can specify the level of math instruction needed)
 3. C or higher in Law and Public Safety I and II or Health Science I and II
 4. Instructor approval and Test of Adult Basic Education (TABE) reading score (eighth grade or higher)
- or**
1. TABE reading and math score (eighth grade or higher)
 2. Instructor approval
- or**
1. Instructor approval

Assessment

The latest assessment blueprint for the curriculum can be found at <https://www.rcu.msstate.edu/curriculum>

Applied Academic Credit

The latest academic credit information can be found at mdek12.org/ese/approved-course-for-the-secondary-schools.

Teacher Licensure

The latest teacher licensure information can be found at mdek12.org/oel/apply-for-an-educator-license.

Professional Learning

If you have specific questions about the content of any training sessions provided, please contact the RCU at 662.325.2510 or helpdesk@rcu.msstate.edu.

Course Outline

One 1-Carnegie Unit Course

This curriculum consists of a one 1-credit course.

1. Emergency Medical Services—Course Code: XXXXX

Course Description: Emergency Medical Services

Presents an overview of the knowledge needed to function as a first responder in the out-of-hospital environment. This course provides the student with skills and knowledge to assess injuries and illnesses and provide emergency medical care. Students will learn how to respond to calls for medical assistance, administer treatment, and prepare patients for safe transport to medical facilities. Instruction in this course is provided through a comprehensive approach to include knowledge of anatomy, physiology, and pathophysiological processes. It also focuses on competency-based instruction in critical care assessment and critical care management skills. These skills are required for the care of complex critical care neonatal, pediatric, and adult patients.

Emergency Medical Services—Course Code: Insert number here

Unit	Unit Title	Hours
1	Introduction to EMS Systems and Operations	14
2	Anatomy and Physiology	14
3	Airway	14
4	Pathophysiology, Shock, and Resuscitation	14
5	Patient Assessment	14
6	Medical Pharmacology	14
7	Trauma	14
8	Special Patient Populations	14
9	Technical Rescue Support Skills	14
10	Basic Life Support	14
Total		140

Career Pathway Outlook

Overview

The law, public safety, corrections, and security (LPCS) career cluster covers the broad field of occupations related to planning, managing, and providing legal, public safety, protective, and homeland security services. Emergency medical services is a pathway within the LPCS cluster that includes first responder jobs such as emergency medical technicians (EMT) and paramedics.

Most careers in emergency medical services require at least an associate degree, although careers with the highest earning potential—EMTs and paramedics, for example—usually require advanced degrees. Emergency medical responders (EMRs), EMTs, and paramedics require state licenses to practice. Career and technical education (CTE) programs that offer EMR or EMT training in partnership with a postsecondary program can allow high school students early entry into the field. Emergency medical services programs are offered by technical programs, community colleges, universities, and facilities that specialize in emergency care training.

Needs of the Future Workforce

According to the U.S. Bureau of Labor Statistics employment projections program, the overall employment for EMTs and paramedics is projected to grow 7 percent by 2031. Over the decade, about 20,000 medical first responder jobs are estimated to open due to current workers transferring to other occupations or retirement. Demands for emergency medical services will continue to grow because of a growing older population and the population of people in general. These needs will continue to support the demand for individuals with the specialized skills of EMTs and paramedics.

Table 1.1: Current and Projected Occupation Report

Description	Jobs, 2020	Projected Jobs, 2030	Change (Number)	Change (Percent)	Average Hourly Earnings, 2023
Emergency Medical Technicians	2,580	3,050	470	18.2%	\$16.02
Paramedics	2,580	3,050	470	18.2%	\$21
Healthcare Technologists and Technicians	330	360	30	9.1%	\$17.69
Health Information Technologists and Medical Registrars	470	530	60	12.8%	\$22.67
Healthcare Support Occupations	46,400	57,030	10,630	22.9%	\$13.64
Healthcare Practitioners and Technical Occupations	80,570	92,520	11,950	14.8%	\$35.97

Source: Mississippi Department of Employment Security, mdes.ms.gov (2023).

Perkins V Requirements and Academic Infusion

The emergency medical services curriculum meets Perkins V's requirements of introducing students to and preparing them for high-skill, high-wage occupations in the emergency medical services field. It also offers students a program of study, including secondary, postsecondary, and institutions of higher learning courses, that will further prepare them for EMS careers. Additionally, this curriculum is integrated with academic college- and career-readiness standards. Lastly, it focuses on ongoing and meaningful professional development for teachers as well as relationships with industry.

Transition to Postsecondary Education

The latest articulation information for secondary to postsecondary can be found at the Mississippi Community College Board website, mccb.edu.

Best Practices

Innovative Instructional Technologies

Classrooms should be equipped with tools that will teach today's digital learners through applicable and modern practices. The EMS educator's goal should be to include teaching strategies that incorporate current technology. To make use of the latest online communication tools—wikis, blogs, podcasts, and social media platforms, for example—the classroom teacher is encouraged to use a learning management system that introduces students to education in an online environment and places more of the responsibility of learning on the student.

Differentiated Instruction

Students learn in a variety of ways, and numerous factors—students' background, emotional health, and circumstances, for example—create unique learners. By providing various teaching and assessment strategies, students with various learning preferences can have more opportunities to succeed.

CTE Student Organizations

Teachers should investigate opportunities to sponsor a student organization. There are several here in Mississippi that will foster the types of learning expected from the EMS curriculum. Health Occupations Students of America (HOSA), and SkillsUSA are examples of student organizations with many outlets for health-related skills. Student organizations provide participants and members with growth opportunities and competitive events. They also open the doors to the world of EMS careers and scholarship opportunities.

Cooperative Learning

Cooperative learning can help students understand topics when independent learning cannot. Therefore, you will see several opportunities in the EMS curriculum for group work. To function in today's workforce, students need to be able to work collaboratively with others and solve problems without excessive conflict. The EMS curriculum provides opportunities for students to work together and help each other complete complex tasks. There are many field experiences within the EMS curriculum that will allow and encourage collaboration with professionals currently in the EMS field.

Work-Based Learning

Work-based learning is an extension of understanding competencies taught in the EMS classroom. This curriculum is designed in a way that necessitates active involvement by the students in the community around them and the global environment. These real-world connections and applications link all types of students to knowledge, skills, and professional dispositions. Work-based learning should encompass ongoing and increasingly more complex involvement with local companies and EMS professionals. Thus, supervised collaboration and immersion into the EMS industry around the students are keys to students' success, knowledge, and skills development.

Professional Organizations

American Ambulance Association

ambulance.org

American Public Health Association

apha.org

National Association of Emergency Medical Technicians

naemt.org

National Association of State EMS Officials

nasemso.org

National EMS Management Association

nemsma.org

National EMS Memorial Service

national-ems-memorial.org

Using This Document

Competencies and Suggested Objectives

A competency represents a general concept or performance that students are expected to master as a requirement for satisfactorily completing a unit. Students will be expected to receive instruction on all competencies. The suggested objectives represent the enabling and supporting knowledge and performances that will indicate mastery of the competency at the course level.

Teacher Resources

All teachers should request to be added to the Canvas Resource Guide for their course. For questions or to be added to the guide, send a Help Desk ticket to the RCU by emailing helpdesk@rcu.msstate.edu.

Perkins V Quality Indicators and Enrichment Material

Some of the units may include an enrichment section at the end. This material will greatly enhance the learning experiences of students. If the EMS program is using a national certification, work-based learning, or another measure of accountability that aligns with Perkins V as a quality indicator, this material could very well be assessed on that quality indicator. It is the responsibility of the teacher to ensure all competencies for the selected quality indicator are covered throughout the year.

Unit 1: Introduction to EMS Systems and Operations

Competencies and Suggested Objectives	
1. Explain the purpose of the EMS system and the various roles and responsibilities that enable the system to function. ^{DOK2}	- Identify key terms that are essential to maintaining EMS systems and operations. - Explain the role of public health systems and their relationship to EMS, disease surveillance, and injury prevention. - Describe the difference between the various EMS systems and their functions in the United States. - Identify the role of regulatory agencies in shaping the EMS system: - National EMS Education Standards - National Highway Traffic Administration (NHTSA) - National Scope of Practice Model - List the responsibilities of the four types of EMS professionals and identify the education and training required for each level: - Emergency Medical Responder (EMR) - Emergency Medical Technician (EMT) - Advanced Emergency Medical Technician (AEMT) - Paramedic
2. Apply operational procedures that regulate the EMS systems. ^{DOK2}	- Describe the role of local and state agencies in providing credentials, medical oversight, and regulations for the EMS system and its professionals. - Explain the various methods to access the EMS system. - Assess the role of Disaster Medical Assistance Teams (DMAT) and how it integrates with the EMS system. - Explain the role of public health systems and their relationship to EMS, disease surveillance, and injury prevention. - Identify the different types of medical direction and how the EMS professional interacts with each one.
3. Demonstrate leadership skills and standards exhibited by EMS professionals. ^{DOK2}	- Describe the values that are required to uphold the responsibilities of EMS personnel (i.e., compassion, ethics, integrity, teamwork, etc.). - Explain the importance of maintaining a high degree of professionalism when performing the duties of an EMR. - Demonstrate the importance of providing the best possible care for all patients. - Model an attitude for continuous quality improvement both personally and professionally. - Explain the role of research in the EMS system and how it is utilized by an EMS professional.
4. Adhere to the legal standards and protocols necessary for the application of emergency medical services. ^{DOK2}	- Identify key medical and legal terms that are essential to the EMS field and professionals. - Differentiate the meaning between scope of practice and standard of care.

c. Discuss civil versus criminal litigation and how an EMS professional may deal with the two. d. Discuss the legal obligations and EMS procedures related to the following: • Advance directive • Breach of duty • Consent of minors • Do not resuscitate orders • Evidence preservation • Expressed consent • Good Samaritan law • Implied consent • Mandated reporter • Patient confidentiality (HIPPA) • Refusal of care	
5. Apply wellness and safety techniques designed to protect EMS providers. ^{DOK2} a. Identify the meaning and application of key terms related to the wellness and safety of professionals in the EMS field. b. Explain the importance of a baseline health assessment for new EMS providers. c. Describe the various immunizations recommended for health care providers. d. Explain how pathogens enter the body and the proper procedure to follow if an EMS provider is exposed or in the event of possible exposure. e. Explain body substance isolation precautions and the appropriate time that they should be used. f. Demonstrate the proper application and removal of various types of personal protective equipment. g. Identify common hazards at the scene of an emergency and steps to mitigate danger. h. Describe sources of stress commonly encountered by EMS providers, common responses (i.e., physical, emotional, and psychological), and strategies for stress reduction. i. Explain the key components of critical, incident stress management. j. Describe the characteristics and importance of communication and proper body mechanics when lifting and moving patients. k. Demonstrate the purpose and proper techniques for lifting and moving patients in the following: • Emergent move • Fowler's position • Logrolling • Patient restraint • Recovery position • Semi-Fowler's • Shock • Standard move • Urgent move	
6. Demonstrate effective communication techniques essential for EMS providers. ^{DOK2} a. Identify the meaning and application of terms essential for effective communication.	

- b. Describe components of effective communication and common barriers.
- c. Apply specific communication strategies for special populations (i.e., pediatric, geriatric, special needs, etc.).
- d. Apply elements of an appropriated verbal transfer of care.
- e. Identify common communication devices used in EMS and demonstrate the proper technique on how to use each.

Enrichment
1. Complete the certification process for Heartsaver First Aid. 2. Train and become involved in a local community emergency response team (CERT) or the Mississippi Youth Preparedness Initiative (MYPI). 3. Utilize HOSA competitive event guidelines for CERT, first aid, and EMT.

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 2: Anatomy and Physiology

Competencies and Suggested Objectives
1. Apply fundamental knowledge of the anatomy and function of human systems to the practice of EMS. ^{DOK3} a. Explain the meaning and application of basic medical terminology. b. Explain the body's topographic anatomy, anatomical positions, and planes of the body. c. Identify the anatomy and physiology of the following body systems: • Skeletal • Musculoskeletal • Respiratory • Circulatory • Nervous • Integumentary • Digestive • Lymphatic • Endocrine • Urinary • Genital

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.
Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 3: Airway

Competencies and Suggested Objectives

1. Relate the functions of the respiratory system, airway, and ventilatory management in the practice of EMS. ^{DOK3}
 - a. Identify the major structures and pathophysiology of the respiratory system.
 - b. Distinguish the signs and processes to detect adequate versus inadequate breathing.
 - c. Explain the purpose and demonstrate the techniques for the use of the following:
 - Head-tilt chin lift
 - Jaw thrust
 - Suctioning
 - d. Relate mechanism of injury to opening the airway.
 - e. Demonstrate the process of artificial ventilation using the following:
 - Pocket mask
 - Bag-valve-mask with jaw thrust
 - Bag-valve-mask with one, two, and three rescuers
 - Flow-restricted, oxygen-powered device
 - Mouth-to-mask
 - BVM-to-stoma
 - f. Explain the purpose and demonstrate the techniques for the following:
 - Head-tilt chin lift
 - g. Describe how to measure and insert an oropharyngeal (oral) and a nasopharyngeal (nasal) airway.
 - h. Explain the components of an oxygen delivery system including pulse oximetry.
 - i. Explain the significance and technique of providing proper ventilation for infants, young children, and patients with neurological conditions.
 - j. Explain the significance of providing adequate oxygenation through high inspired oxygen concentrations to patients who received low concentrations during previous procedures.
 - k. Distinguish the priority of basic life support, artificial ventilation, and airway protective skills.
 - l. Describe the indications for using a nasal cannula versus a nonrebreather face mask.
 - m. Demonstrate the administration of nebulized medication, including beta agonists and anticholinergic medications.
 - n. Explain the purpose and proper operation of the following:
 - Nasal cannula
 - Venturi mask
 - Partial rebreather mask
 - Pulse oximeter
 - Oxygen tanks and regulators
 - Automated transport ventilators
 - Nebulizers

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Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 4: Pathophysiology, Shock, and Resuscitation

Competencies and Suggested Objectives

1. Apply general concepts of pathophysiology for the assessment and management of emergency patients. ^{DOK4}
 - a. Describe the structure and function of a cell, including adaptation and the cell environment.
 - b. Explain the composition of a cell membrane and its significance.
 - c. Describe cellular respiration, injury, and death.
 - d. Discuss the difference between aerobic and anaerobic metabolism.
 - e. Explain the significance of maintaining a patient's airway and breathing for aerobic metabolism.
 - f. Explain the role of basic life support care from the occurrence of the incident until the availability of advanced care.
 - g. Explain adenosine triphosphate (ATP) and identify the components of cellular respiration that make ATP.
 - h. Identify common diseases associated with the following:
 - Respiratory system
 - Cardiovascular system
 - Gastrointestinal system
 - Genitourinary system
 - Endocrine system
 - Immune system
 - Reproductive system
 - Musculoskeletal system
 - Nervous system
 - Integumentary system
2. Apply general concepts of the central and peripheral nervous system for the assessment and management of emergency patients. ^{DOK4}
 - a. List the types of tissues, organs, organ systems, and organisms.
 - b. Explain the difference between the central and peripheral nervous system.
 - c. Illustrate the structure and function of a neuron or nerve cell.
 - d. Define shock and explain what happens as it occurs in the following:
 - Hypoperfusion
 - Cardiogenic
 - Hypovolemic
 - Neurogenic
 - Anaphylactic
 - Septic
 - e. Define edema and explain the process that occurs in the circulation system and body tissue during the process.
 - f. Explain free radicals, the cause of their instability, and the impact on other cells.
 - g. Describe how and why carbon dioxide is transported away from tissues while oxygen is transported from the lungs to tissues.

3. Apply general concepts of the autonomic nervous systems for the assessment and management of emergency patients. ^{DOK4}
 - a. Explain the function of agonists and antagonists on cell receptors or neurotransmitters.
 - b. Describe the difference between the two divisions of the autonomic nervous system: sympathetic and parasympathetic.
 - c. Explain how mimetic and lytic apply to drugs or other substances that interact with the autonomic nervous system.
 - d. Describe the effects of an overstimulated sympathetic or parasympathetic nervous system.
 - e. Identify the function of the components of blood: red blood cells, platelets, white blood cells, and plasma.
 - f. Explain how the body controls bleeding and the type of interventions used by EMS providers to aid the process.

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 5: Patient Assessment

Competencies and Suggested Objectives

1. Apply patient assessment techniques to the emergency care of medical and trauma patients.
DOK2
 - a. Assess scene safety and identify signs that indicate the need for additional resources.
 - b. Perform components of an initial patient assessment based on the following:
 - Mechanism of injury
 - Nature of illness
 - Mental status
 - Airway or breathing
 - Pulse
 - Skin color
 - Temperature
 - c. Demonstrate how to obtain a SAMPLE (signs and symptoms of the present illness, allergy, medications, past medical history, last oral intake, and events leading to present illness or injury).
 - d. Explain when and how to perform a rapid trauma assessment and provide care based on the findings.
 - e. Describe reasons for prioritizing a patient for care and transport.
 - f. Differentiate between the physical examinations performed for responsive patients with no prior history and responsive patients with a known history.
 - g. Compare the assessment process for an unresponsive patient or one who has an altered mental status to other medical patients in need of assistance.
 - h. Perform a detailed physical examination and explain what additional care should be provided based on assessment findings.
 - i. Discuss the components and reasons for repeating the initial assessment as part of the ongoing assessment.
2. Apply communication techniques to assessment and management process of emergency care patients.
DOK2
 - a. Complete a written report that includes essential components of patient information, assessment findings, and the emergency care provided by the EMS provider.
 - b. Demonstrate effective verbal communication skills with patients, bystanders, health care providers, and family members while providing patient care.
 - c. Demonstrate proper and effective radio communication skills.

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Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 6: Medical Pharmacology

Competencies and Suggested Objectives

1. Apply knowledge of the basic principles of how medical drugs interact on the human body. ^{DOK2}
 - a. Identify the types and purpose of medications utilized by EMS responder (i.e., activated charcoal, oral glucose, and oxygen).
 - b. Identify the types and purpose of generic and trade brands of medications.
 - c. Discuss the significance of indications and contraindications for the use of drugs.
 - d. List the steps involved in medication metabolism and excretion.
 - e. Explain the purpose of the following medication forms and their effect on the body:
 - Compressed powders or tablets
 - Liquids for injection
 - Gels
 - Suspensions
 - Fine powder for inhalation
 - Gasses
 - Sublingual spray
 - Liquids for vaporized fixed dosages
2. Demonstrate the ability to properly administer medication as an EMS responder. ^{DOK2}
 - a. Explain the six rights of medication administration.
 - b. Demonstrate how to read a medicine bottle label and inspect each type of medication.
 - c. Indicate how much of a medication should be administered based on specific criteria.
 - d. Identify medications based on how they are named, classified, and stored for safety and security.
 - e. Identify the appropriate routes of administration of medication used by EMS responders.
 - f. Demonstrate how to administer medication using the following methods:
 - Cross check procedure
 - Autoinjector
 - Unit-dose
 - Premeasured intranasal device
 - Oral
 - Intravenous
 - Topical
 - Respiratory (inhalation)
 - Nasal
 - Subcutaneous

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be

distributed over the entire year.

Unit 7: Trauma

Competencies and Suggested Objectives	
1. Demonstrate techniques to effectively assess and manage care for trauma patients. ^{DOK2}	- List the structure and function of the circulatory system. - Differentiate between arterial, venous, and capillary bleeding. - State methods of emergency medical care for external bleeding. - Establish the relationship between the following: - Body substance isolation and bleeding - Airway management and the trauma patient - Mechanism of injury and internal bleeding - List the signs and symptoms of internal bleeding, different types of shock, and the steps for emergency medical care.
2. Explain the process of care for patients who are bleeding and showing signs of shock. ^{DOK2}	- Display the ability to diffuse pressure, apply pressure, and use tourniquets as a method of addressing external bleeding. - Demonstrate how to complete a prehospital care report for patients suffering from bleeding or shock.
3. Demonstrate techniques to effectively assess and manage care for patients with soft tissue injuries. ^{DOK2}	- State the major functions and layers of the skin. - Explain the relationship between body substance isolation (BSI) and soft tissue injuries. - Identify the types of injuries and medical care considerations of the following: - Soft tissue - Closed tissue - Open soft tissue - Penetrating chest injury - Open abdomen wound - Open chest wound
4. Demonstrate techniques to effectively assess and manage care for patients with burns. ^{DOK2}	- List the classifications of burns. - Define and list the characteristics of superficial, partial thickness, and full thickness burns. - Describe the emergency medical care process of patients with superficial, partial thickness, and full thickness burns. - Explain the purpose, functions, and process of dressing and bandaging. - Establish the relationship between airway management and the patient with chest injury, burns, blunt, and penetrating injuries. - Describe the effects of improperly applied dressings, splints, and tourniquets. - Describe the emergency care of patients with an amputation, impaled object, chemical burn, and electrical burn.
5. Demonstrate techniques to effectively assess and manage the musculoskeletal care of patients. ^{DOK2}	Describe the function of the muscular and skeletal system.

b. List the major bones or bone groupings of the spinal column, the thorax, the upper and lower extremities. c. Distinguish between an open, closed, painful, swollen, and deformed extremity and the types of medical care needed to address them. d. List the reasons, general rules, and complications of splinting. e. Explain the purpose for splinting at the scene versus load and go. f. Demonstrate how to complete a prehospital care report for patients with musculoskeletal injuries.
6. Demonstrate techniques to effectively assess and manage injuries to the head and spine. DOK2 a. State the components and functions of the central nervous system. b. Describe the structure of the skeletal system as it relates to the nervous system. c. Relate mechanism of injury to potential injuries of the head and spine. d. State the signs and symptoms of a potential spine injury and the implications of not properly caring for them. e. Determine how to recognize a spine injury in an unresponsive patient. f. Relate the airway emergency medical care techniques to the patient with a suspected spine injury. g. Describe the indications and methods for the following when dealing with patients with suspected head or spine injuries: • Stabilization • Immobilization device • Log roll • Long spine board • Short spine board • Rapid extrication • Helmet removal • Airway management h. Demonstrate how to complete a prehospital care report for patients with head and spinal injuries.

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 8: Special Patient Populations

Competencies and Suggested Objectives

1. Demonstrate techniques to effectively assess and manage medical care related to obstetrics and gynecological emergencies. ^{DOK 4}
 - a. Identify and explain the significance of the relationships among the following:
 - Uterus
 - Vagina
 - Fetus
 - Placenta
 - Umbilical cord
 - Amniotic sac
 - Perineum
 - b. Describe the contents of an obstetrics kit and the purpose of each item.
 - c. Distinguish between normal, pre-, and imminent childbirth, including symptoms of preeclampsia, eclampsia, and premature rupture of membranes.
 - d. Demonstrate the procedures involved in a normal pre- and post-delivery care of the mother and baby.
 - e. Describe steps to assist in the delivery of the baby as the head appears, cutting the umbilical cord, and delivery of the placenta.
 - f. Establish the relationship between body substance isolation and childbirth.
 - g. Describe implications and processes involved in the following:
 - Neonatal resuscitation
 - Meconium
 - Premature
 - Multiple births
 - Breech
 - Prolapsed cord
 - Limb presentation
 - Vaginal bleeding
 - h. Explain the medical care of a patient with a gynecological emergency, sexually transmitted disease, and pelvic inflammatory disease.
 - i. Illustrate how to complete an out-of-hospital care report for patients with obstetrical and gynecological emergencies.
2. Demonstrate techniques to effectively care for pediatric patients. ^{DOK 4}
 - a. Explain the development process of infants, toddlers, preschool and school age children, and adolescents.
 - b. Contrast the anatomy and pathophysiology of an infant, child, and adult patient.
 - c. Detail the assessment and management of the following for infants and young children:
 - Respiratory distress and failure
 - Foreign body airway obstruction
 - Hypoperfusion
 - End organ perfusion
 - Cardiac arrest

• Seizures • Child abuse and neglect • Bag-valve-mask artificial ventilation • Oxygen delivery • Sudden infant death syndrome • Gastrointestinal diseases
3. Demonstrate techniques to effectively assess and manage emergency medical care associated with the geriatric population. ^{DOK 4} a. Describe the changes associated with aging and the psychosocial aspects of aging. b. Describe the age-related assessment and treatment modifications for common emergency geriatric illnesses (i.e., respiratory, neurological, endocrine, Alzheimer's and dementia). c. Describe the health care implications of the following: • Abuse • Neglect • Homelessness • Poverty • Bariatrics • Technology dependent • Hospice or terminally ill • Tracheostomy care/dysfunction • Home care • Sensory deficit or loss • Developmental disability
4. Demonstrate knowledge and awareness to effectively manage patients with behavioral and psychiatric emergencies. ^{DOK 4} a. Define behavioral emergencies relative to the potential for harm and identify appropriate interventions. b. Discuss the general factors that may cause an alteration in a patient's behavior. c. State the various reasons for psychological crises. d. Discuss the characteristics of behavior that suggest a risk for suicide or violence to others. e. Explain the medical and legal considerations for managing patients with behavioral problems. f. Demonstrate methods to calm or restrain patients during a behavioral emergency. g. Describe the proper assessment and management of acute psychosis or agitate delirium.

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Unit 9: Technical Rescue Support Skills

Competencies and Suggested Objectives	
1. Prepare for search and rescue operations. ^{DOK 3}	
a. Analyze emergency situations to determine search and rescue methods.	
b. Discuss various types of victim extrication, including building collapse, auto extrication, and the proper use of technical rescue equipment.	
c. Practice search and rescue methods in simulated emergency situations.	
2. Demonstrate incident-management skills in emergency situations. ^{DOK 4}	
a. Explore the elements included in the NIMS incident command system.	
b. Demonstrate proper incident management for the following:	
• Disaster response and recovery	
• Hazardous weather operations	
• Incidents of terrorism	
• Handling of hazardous materials	
3. Review methods for interacting and supporting other emergency service providers. ^{DOK 4}	
a. Explain the cooperative relationship between dispatch, law enforcement, fire, and emergency medical services.	
b. Illustrate geographical reasoning and decision-making skills using maps and global positioning system (GPS) applications.	
c. Practice basic radio operations and resource management skills.	
d. Demonstrate the fire size-up process and how to extinguish a small fire using a portable fire extinguisher.	
Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.	
Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.	

Unit 10: Basic Life Support

Competencies and Suggested Objectives

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|---|
| <ol style="list-style-type: none">1. Demonstrate competency in basic life support knowledge and skills as defined by current American Heart Association BLS guidelines. ^{DOK 4}<ol style="list-style-type: none">a. Describe the importance of high-quality CPR and its impact on survival.b. Describe the steps of the chain of survival.c. Apply the BLS concepts of the chain of survival.d. Recognize the signs of someone in need of CPR.e. Perform high-quality CPR for an infant, child, and adult.f. Describe the importance of quickly administering an AED and the appropriate method.g. Demonstrate a team approach in multi-rescuer resuscitation attempts and CPR.h. Describe the techniques for relief of foreign-body airway obstruction for an adult, child, and an infant. |
|---|

Note: Safety is to be taught as an ongoing part of the program. Students are required to complete a written safety test with 100% accuracy before entering the shop for lab simulations and projects. This test should be documented in each student's file.

Note: This unit will be ongoing throughout the year. Time allotted for this unit will be distributed over the entire year.

Student Competency Profile

Student's Name: _____

This record is intended to serve as a method of noting student achievement of the competencies in each unit. It can be duplicated for each student, and it can serve as a cumulative record of competencies achieved in the course.

In the blank before each competency, place the date on which the student mastered the competency.

Unit 1: Introduction to EMS Systems and Operations		
	1.	Explain the purpose of the EMS system and the various roles and responsibilities that enable the system to function.
	2.	Apply operational procedures that regulate the EMS systems.
	3.	Demonstrate leadership skills and standards exhibited by EMS professionals.
	4.	Adhere to the legal standards and protocols necessary for the application of emergency medical services.
	5.	Apply wellness and safety techniques designed to protect EMS providers.
	6.	Demonstrate effective communication techniques essential for EMS providers.
Unit 2: Anatomy and Physiology		
	1.	Apply fundamental knowledge of the anatomy and function of human systems to the practice of EMS.
Unit 3: Airway		
	1.	Relate the functions of the respiratory system, airway, and ventilatory management in the practice of EMS.
Unit 4: Pathophysiology, Shock, and Resuscitation		
	1.	Apply general concepts of pathophysiology for the assessment and management of emergency patients.
	2.	Apply general concepts of the central and peripheral nervous system for the assessment and management of emergency patients.
	3.	Apply general concepts of the autonomic nervous systems for the assessment and management of emergency patients.
Unit 5: Patient Assessment		
	1.	Apply patient assessment techniques to the emergency care of medical and trauma patients.
	2.	Apply communication techniques to assessment and management process of emergency care patients.
Unit 6: Medical Pharmacology		
	1.	Apply knowledge of the basic principles of how medical drugs interact on the human body.
	2.	Demonstrate the ability to properly administer medication as an EMS responder.

Unit 7: Trauma		
	1.	Demonstrate techniques to effectively assess and manage care for trauma patients.
	2.	Explain the process of care for patients who are bleeding and showing signs of shock.
	3.	Demonstrate techniques to effectively assess and manage care for patients with soft tissue injuries.
	4.	Demonstrate techniques to effectively assess and manage care for patients with burns.
	5.	Demonstrate techniques to effectively assess and manage the musculoskeletal care of patients.
	6.	Demonstrate techniques to effectively assess and manage injuries to the head and spine.
Unit 8: Special Patient Populations		
	1.	Demonstrate techniques to effectively assess and manage medical care related to obstetrics and gynecological emergencies.
	2.	Demonstrate techniques to effectively care for pediatric patients.
	3.	Demonstrate techniques to effectively assess and manage emergency medical care associated with the geriatric population.
	4.	Demonstrate knowledge and awareness to effectively manage patients with behavioral and psychiatric emergencies.
Unit 9: Technical Rescue Support Skills		
	1.	Prepare for search and rescue operations.
	2.	Demonstrate incident-management skills in emergency situations.
	3.	Review methods for interacting and supporting other emergency service providers.
Unit 10: Basic Life Support		
	1.	Demonstrate competency in basic life support knowledge and skills as defined by current American Heart Association BLS guidelines.

Appendix A: Industry Standards

	Units	1	2	3	4	5	6	7	8	9	10
Standards											
NEMSES 1		X		X	X	X	X		X		X
NEMSES 2		X	X		X	X	X		X		X
NEMSES 3		X	X	X	X			X			
NEMSES 4		X	X	X	X	X		X	X	X	X
NEMSES 5		X	X	X	X	X	X	X			
NEMSES 6		X	X		X	X	X	X	X	X	X
NEMSES 7		X	X	X	X	X	X	X	X	X	X
NEMSES 8		X	X		X						X
NEMSES 9		X	X	X	X	X	X	X	X	X	X
NEMSES 10		X	X	X	X	X	X	X	X	X	X
NEMSES 11		X	X	X	X	X	X				
NEMSES 12		X	X	X	X	X		X	X		X
NEMSES 13		X		X			X				
NEMSES 14		X		X	X	X		X	X	X	X
NEMSES 15		X	X	X	X	X		X	X	X	X

EMS Education Standards-Emergency Medical Responder (EMR)

NEMSES 1 Preparatory

1. Uses knowledge of the EMS system, safety/well-being of the EMR, medical/legal issues and ethical issues at the scene of an emergency while awaiting a higher level of care.

NEMSES 2 Anatomy and Physiology

1. Uses knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles, and bones as the foundation of emergency care.

NEMSES 3 Medical Terminology

1. Uses medical and anatomical terms.

NEMSES 4 Pathophysiology

1. Uses knowledge of shock and respiratory compromise to respond to life threats.

NEMSES 5 Life Span Development

1. Uses knowledge of age-related differences to assess and care for patients.

NEMSES 6 Public Health

1. Has an awareness of local public health resources and their role in public health.

NEMSES 7 Pharmacology

1. Uses knowledge of the medications that the EMR may administer in an emergency.

NEMSES 8 Airway Management, Respiration, and Artificial Ventilation

1. Applies knowledge of anatomy and physiology to assure a patent airway, adequate mechanical ventilation and respiration while awaiting additional EMS response for patients of all ages.

NEMSES 9 Assessment

1. Use scene information and patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR.

NEMSES 10 Medicine

1. Recognizes and manages life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response.

NEMSES 11 Shock and Resuscitation

1. Uses assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.

NEMSES 12 Trauma

1. Uses knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

NEMSES 13 Special Patient Populations

1. Recognizes and manages life threats based on simple assessment findings for a patient with special needs while awaiting additional emergency response.

NEMSES 14 EMS Operations

1. Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety.

NEMSES 15 Clinical Behavior/Judgment

1. Perform a simple assessment to identify life threats, identify injuries requiring spinal motion restriction and conditions requiring treatment within the scope of practice of the EMR.