

E.M.T. Miner

Certification Program

Course Out-Line and Objectives

The attached course outline and objectives were designed to assist instructors in the development of lesson plans only.

Instructors must follow the E.M.T. Miner Certification Course Curriculum authorized by the Director in consultation with the West Virginia Board of Miner Training, Education and Certification when teaching the EMT-Miner Certification Class.

*“The E.M.T. Miner certification curriculum follows the core components of the US DOT EMT-Miner Course with the additions of Cardiac Emergencies and the Mining Supplement.”*

A copy of the Approved EMT-Miner Course Curriculum is available at any MHS&T Field office

You can download a copy of the DOT EMT-Miner Curriculum at: www.nhtsa.gov/.../frnsc

** West Virginia Office of Miners Health, Safety and Training**

**Emergency Medical Technician-Mining**

**Initial 60 Class Outline**

 **LESSON HOURS**

|  |  |
| --- | --- |
| 1. Introduction
 | 2 |
| 1. Cardiac Emergencies/AED
 | 4 |
| 1. Cardiac Emergencies/AED (cont.)

Cardiopulmonary ResuscitationsEvaluation | 2 |
| 1. Introduction to Emergency Care

Well Being of the EMT-MMedical/Legal IssuesThe Human Body | 4 |
| 1. The Human Body (cont.)

Vital Signs & Sample HistoryVitals Practical LabLifting and Moving Patients | 4 |
| 1. Evaluation Lifting and Moving Patients

 Airway ManagementPractical Lab | 4 |
| 1. Evaluation Airways

Scene Size-Up  | 4 |
| 1. Initial Assessment

Patient Assessment/Vital SignsFocused History & Physical Exam – Trauma Patient | 3 |
| 1. Focused History & Physical Exam –

Medical PatientDetailed Physical ExamOngoing AssessmentPractical Lab | 4 |
| 1. Medical Emergencies

Diabetic EmergenciesAltered Mental StatusRespiratory Emergencies | 4 |
| 1. Allergies

Poisoning and Overdose | 4 |
| 1. Musculoskeletal Injuries

Injuries to Head and SpineBleeding and ShockSoft Tissue Injuries  | 5 |
| 1. Behavioral Emergencies

 Childbirth | 3 |
| 1. EMS Operations

Evaluation/EMS Operations Practical Labs | 4 |
| 1. Gaining Access

Mining SupplementReview | 4 |
| 15. FINAL WRITTEN EXAMINATION  | 2 |
| FINAL PRACTICAL EXAMINATION | 3 |
|  **TOTAL HOURS** | **60** |

EMT-Miner CERTIFICATION CLASS (60 Hour)

**Lesson Objectives**

**Lesson 1**

**Cardiac Emergencies – CPR/AED**

At the completion of this lesson, the EMT Miner student will be able to:

* List the reasons for the heart to stop beating.
* Define the components of cardiopulmonary resuscitation.
* Describe each link in the chain of survival and how it relates to the EMS system
* List the steps of one-rescuer adult CPR
* List the steps of two person CPR
* Describe the technique of external chest compressions on an adult patient.
* Describe the technique of external chest compressions on an infant.
* Describe the technique of external chest compressions on a child.
* Define the use and technique of using an Automatic External Defibrillator (AED)
* List the hazards of using an AED
* Explain when the EMT Miner is able to stop CPR.
* List the steps of two-rescuer adult CPR.
* List the steps of infant CPR.
* List the steps of child CPR.

SKILLS: (Follow steps in approved skill sheets)

* + Provide One Person CPR
	+ Provide Two Person CPR
	+ Use of Automatic External Defibrillator

(Certification in CPR/AED by a Nationally Recognized Certification Organization “American Heart Association, American Red Cross, Etc.” required prior to taking Certification Examination)

**Lesson 2-1**

**Introduction to EMS System**

This lesson familiarizes the EMT-Miner with the introductory aspects of emergency medical care. Topics include the Emergency Medical Services system, roles and responsibilities of the EMT- Miner, quality improvement, and medical oversight.

At the completion of this lesson, the EMT Miner student will be able to:

* + Define the components of Emergency Medical Services (EMS) systems.
	+ Differentiate the roles and responsibilities of the EMT Miner from other out-of-hospital care providers.
	+ Define medical oversight and discuss the EMT Miner role in the process.
	+ Discuss the types of medical oversight that may affect the medical care of the EMT Miner.

**Lesson 2-2**

**The Well-Being of the EMT-Miner**

Covers the emotional aspects of emergency medical care, stress management, introduction to Critical Incident Stress Debriefing (CISD), scene safety, body substance isolation (BSI), personal protection equipment (PPE), and safety precautions that can be taken prior to performing the role of a EMT Miner

At the completion of this lesson, the EMT Miner candidate will be able to:

* + List possible emotional reactions that the EMT-Miner may experience when faced with trauma, illness, death and dying.
	+ Discuss the possible reactions that (co-workers) a family member may exhibit when confronted with death and dying. .
	+ State the steps in the EMT-Miner’s approach to the (co-worker) family confronted with death and dying.
	+ State the possible reactions that the (co-worker) family of the EMT Miner may exhibit.
	+ Recognize the signs and symptoms of critical incident stress.
	+ State possible steps that the EMT-Miner may take to help reduce/alleviate stress.
	+ Explain the need to determine scene safety.
	+ Discuss the importance of body substance isolation (BSI) .
	+ Describe the steps the EMT-Miner should take for personal protection from airborne and blood borne pathogens.

**Lesson 2-3**

**Legal and Ethical Issues**

Explores the scope of practice, ethical responsibilities, advance directives, consent, refusals, abandonment, negligence, duty to act, confidentiality, medical identification symbols, and accident scenes.

At the completion of this lesson, the EMT Miner will be able to:

* + Define the EMT Miner scope of care.
	+ Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or state provisions regarding EMS application.
	+ Define consent and discuss the methods of obtaining consent.
	+ Differentiate between expressed and implied consent.
	+ Explain the role of consent of minors in providing care.
	+ Discuss the implications for the EMT Miner in patient refusal of transport.
	+ Discuss the issues of abandonment, negligence, and battery and their implications to the EMT Miner.
	+ State the conditions necessary for the EMT Miner to have a duty to act.
	+ Explain the importance, necessity and legality of patient confidentiality.
	+ List the actions that a EMT Miner should take to assist in the preservation of a accident scene.

**Lesson 2-4**

**The Human Body**

Enhances the EMT-Miner’s knowledge of the human body. A brief overview of body systems, anatomy, and physiology will be given in this session.

At the completion of this lesson, the EMT Miner will be able to:

* + Describe the anatomy and function of the respiratory system.
	+ Describe the anatomy and function of the circulatory system.
	+ Describe the anatomy and function of the musculoskeletal system.
	+ Describe the components and function of the nervous system.

**Lesson 2-5**

**Lifting and Moving Patients**

Provides students with knowledge of body mechanics, lifting and carrying techniques, and principles of moving patients.

At the completion of this lesson, the EMT Miner student will be able to:

* Define body mechanics.
* Discuss the guidelines and safety precautions that need to be followed when l ifting a patient
* Describe the indications for an emergency move.
* Describe the indications for assisting in non-emergency moves
* Describe lifting and moving in mining environment (Mining Supplement)

**Skills – Hands-On**

 (No skill sheet, refer to mining curriculum, EMT-Miner manual or mining supplement)

* + - Demonstrate an emergency move.
		- Demonstrate a non-emergency move.
		- Demonstrate the use of equipment utilized to move patient's in coal mine environment. (Mining Supplement)

**Lesson 3-1**

**Airway**

Addresses airway anatomy and physiology, how to maintain an open airway, pulmonary resuscitation, variations for infants and children, as well as patients with laryngectomies. The use of airways, suction equipment, and barrier devices will be dis-cussed in this lesson. Also included is the management of foreign body airway obstructions

At the completion of this lesson, the EMT-Miner student will be able to:

* + Name and label the major structures of the respiratory system on a diagram.
	+ List the signs of adequate breathing.
	+ List the signs of inadequate breathing.
	+ Describe the steps in performing the head-tilt chin-lift.
	+ Relate mechanism of injury to opening the airway.
	+ Describe the steps in performing the jaw thrust.
	+ State the importance of having a suction unit ready for immediate use when providing emergency care.
	+ Describe the techniques of suctioning.
	+ Describe how to artificially ventilate a patient with a pocket mask.
	+ Describe the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask while using the jaw thrust
	+ List the parts of a bag-valve-mask system.
	+ Describe the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask for one and two rescuers.
	+ Describe the signs of adequate artificial ventilation using the bag valve-mask

**Skills - Hands-On**

* + - The student will be able to open the airway with the head-tilt chin lift maneuver.
		- The student will be able to open the airway with the jaw thrust.
		- The student will be able to provide mouth-to-mouth artificial ventilation.
		- The student will be able to provide artificial ventilation of a patient with a pocket mask with oxygen.
		- The student will be able to assembly of a bag-valve-mask.

**Lesson 3-1**

**Airway (Cont.)**

* + - The student will be able to use a bag-valve-mask to artificially ventilate a non-neck injured patient (adult, child, and infant) with and without assistance.
		- The student will be able to insert an oropharyngeal (oral) airway (adult, child, and infant) with and without tongue blade.
		- The student will be able to insert a nasopharyngeal (nasal) airway.
		- The student will be able to use a suction unit.
		- The student will be able to use a nasal cannula.
		- The student will be able to use a nonrebreather mask.
		- The student will be able to set up oxygen tanks, regulators, and flowmeters. And administer oxygen

**Skill Sheet - Airway Management**

**Lesson 4-1**

**Patient Assessment**

Enhances the EMT-Miner’s ability to evaluate a scene for potential hazards, to determine the number of patients, whether additional help is necessary, and to evaluate the mechanism of injury or nature of illness. This lesson provides the knowledge and skills to properly perform the initial assessment. In this session, the student will learn about forming a general impression, determining responsiveness, and assessing the airway, breathing, and circulation. Students will discuss how to determine priorities of patient care. This lesson also teaches the knowledge and skills required to continue the assessment and management of the ill or injured patient.

* At the completion of this lesson, the EMT Miner student will be able to:
* Discuss the components of scene size-up.
* Describe common hazards found at the scene of a trauma and a medical patient.
* Determine if the scene is safe to enter.
* Discuss common mechanisms of injury/nature of illness.

**Lesson 4-1**

**Patient Assessment (Cont.)**

* + Discuss the reason for identifying the total number of patients at the scene.
	+ Explain the reason for identifying the need for additional help or assistance.
	+ Summarize the reasons for forming a general impression of the patient.
	+ Discuss methods of assessing mental status.
	+ Differentiate between assessing mental status in the adult, child, and infant patient.
	+ Describe methods used for assessing if a patient is breathing.
	+ Differentiate between shallow, labored and noisy breathing.
	+ Describe the methods used to assess circulation.
	+ Describe the methods to obtain a pulse rate.
	+ Identify the information obtained when assessing a patient’s pulse.
	+ Differentiate between a strong, weak, regular and irregular pulse.
	+ Describe the methods to assess blood pressure.
	+ Define systolic pressure.
	+ Define diastolic pressure.
	+ Explain the difference between auscultation and palpation for obtaining a blood pressure.
	+ Differentiate between obtaining a pulse in an adult, child, and infant patient.
	+ Discuss the need for assessing the patient for external bleeding.
	+ Explain the reason for prioritizing a patient for care and transport.
	+ Discuss the components of the physical exam.
	+ State the areas of the body that are evaluated during the physical exam.
	+ Explain what additional questioning may be asked during the physical exam.
	+ Explain the components of the SAMPLE history.
	+ Discuss the components of the on-going assessment.
	+ Describe the information included in the EMT Miner "hand-off" report.

**Skill Sheets:**  Patient Assessment – Trauma Patient

Patient Assessment – Medical Patient

Vital Signs

**Lesson 5-1**

**Medical Emergencies**

Discusses the recognition and management of general medical complaints, seizures, altered mental status, environmental emergencies, behavioral emergencies, psychological crisis, and typical patient situations.

At the completion of this lesson, the EMT Mining student will be able to:

* + Identify the patient who presents with a general medical complaint.
	+ Explain the steps in providing emergency medical care to a patient with a general medical complaint.
	+ Identify the patient who presents with a specific medical complaint of altered mental status.
	+ Explain the steps in providing emergency medical care to a patient with an altered mental status.
	+ Identify the patient who presents with a specific medical complaint of seizures.
	+ Explain the steps in providing emergency medical care to a patient with seizures.
	+ Identify the patient who presents with a specific medical complaint of exposure to cold.
	+ Explain the steps in providing emergency medical care to a patient with an exposure to cold
	+ Identify the patient who presents with a specific medical complaint of exposure to heat.
	+ Explain the steps in providing emergency medical care to a patient with an exposure to heat.
	+ Identify the patient who presents with a specific medical complaint of behavioral change.
	+ Explain the steps in providing emergency medical care to a patient with a behavioral change.
	+ Identify the patient who presents with a specific complaint of a psychological crisis.
	+ Explain the steps in providing emergency medical care to a patient with a psychological crisis

**Lesson 5-2**

**Bleeding and Soft Tissue Injuries**

Reviews the cardiovascular system, describes the care of the patient with internal and external bleeding, and teaches the management of soft tissue injuries and burns. Techniques of dressing and bandaging wounds will also be taught in this lesson

At the completion of this lesson, the EMT Mining student will be able to:

* + Differentiate between arterial, venous, and capillary bleeding.
	+ State the emergency medical care for external bleeding.
	+ Establish the relationship between body substance isolation and bleeding.
	+ List the signs of internal bleeding.
	+ List the steps in the emergency medical care of the patient with signs and symptoms of internal bleeding.
	+ Establish the relationship between body substance isolation (BSI) and soft tissue injuries.
	+ State the types of open soft tissue injuries.
	+ Describe the emergency medical care of the patient with a soft tissue injury.
	+ Discuss the emergency medical care considerations for a patient with a penetrating chest injury
	+ State the emergency medical care considerations for a patient with an open wound to the abdomen.
	+ Describe the emergency medical care for an impaled object.
	+ State the emergency medical care for an amputation.
	+ Describe the emergency medical care for burns.
	+ List the functions of dressing and bandaging.

**Skill Sheet**

* Bleeding and Shock Skill Sheet

**Lesson 5-3**

**Injuries to Muscles and Bones**

Reviews the anatomy of and injuries to the musculoskeletal system. Presents information about injuries of the skeletal system. Reviews the anatomy of the nervous system and the skeletal system. Discusses injuries to the spine and head, including the mechanism of injury, signs and symptoms of injury, and assessment.

At the completion of this lesson, the EMT Mining student will be able to:

* + Describe the function of the muscular system.
	+ Describe the function of the skeletal system.
	+ List the major bones or bone groupings of the spinal column; the thorax; the upper extremities; the lower extremities.
	+ Differentiate between an open and a closed painful, swollen, deformed extremity.
	+ State the reasons for splinting.
	+ List the general rules of splinting.
	+ List the complications of splinting.
	+ List the emergency medical care for a patient with a painful, swollen, deformed extremity.

**Skills Sheets:**

Short Bone Fracture Skill Sheet

Long Bone Fracture Skill Sheet (Traction Splint)

Long Spine Board Skill Sheet

Short Spine Board Skill Sheet (KED)

**Lesson 6-1**

**Childbirth**

Reviews the anatomical and physiological changes that occur during pregnancy. Demonstrates deliveries and newborn care.

At the completion of this lesson, the EMT Mining student will be able to:

* + Identify the following structures: birth canal, placenta, umbilical cord, amniotic sac.
	+ Define the following terms: crowning, bloody show, labor, abortion.
	+ State indications of an imminent delivery.
	+ State the steps in the pre-delivery preparation of the mother.
	+ Establish the relationship between body substance isolation and childbirth.
	+ State the steps to assist in the delivery.
	+ Describe care of the baby as the head appears.
	+ Discuss the steps in delivery of the placenta.
	+ List the steps in the emergency medical care of the mother post-delivery.
	+ Discuss the steps in caring for a newborn.

**Lesson 7-1**

**EMS Operations**

The EMT Miner will be functioning as part of the EMS System. This lesson is designed to provide the student with a brief overview of some of the operational aspects of out-of-hospital care.

The EMT Miner should be familiar with the medical and non-medical equipment for use in patient care. The EMT Miner should also be aware of the phases of a response and his/her role in each.

Although the EMT Miner is not usually responsible for rescue and extrication, a fundamental understanding of the process is required.

At the completion of this lesson, the EMT Mining student will be able to:

* Discuss the medical and non-medical equipment needed to respond to a call.
* List the phases of a out-of-hospital call.
* Discuss the role of the EMT Miner in extrication.
* List various methods of gaining access to the patient.
* Distinguish between simple and complex access.

**Lesson 7-1**

**EMS Operations**

* + Describe what the EMT Miner should do if there is reason to believe that there is a hazard at the scene.
	+ State the role the EMT Miner should perform until appropriately trained personnel arrive at the scene of a hazardous materials situation.
	+ Describe the criteria for a multiple casualty situation.
	+ Discuss the role of the EMT Miner in the multiple casualty situation.
	+ Summarize the components of basic triage.

**EMT MINING SUPPLEMENT TO BE USED IN THIS MODULE**