

**Northwest Arkansas Community College**

**Division of Health**

**Paramedic Science Program**

**Discipline Code**

EMTP

**Course Number**

1031

**Course Title**

EMS Environment II

**Catalog Description**

Recognition and management of a mass casualty scene will be taught/demonstrated. Each student will be expected to participate in a mock disaster drill as set forth by the county and to utilize knowledge gained from class and the drill in a final disaster scenario. Rescue operations and stress management in emergency services will also be covered.

**Prerequisites**

**Credit Hours**

1 credit hours

**Contact hours**

16 hours

**Load hours**

1 load hours

**Semesters Offered**

Fall

**ACTS Equivalent**

Non-Transferable Course

**Grade Mode**

A-F

**Learning Outcomes**

Upon completion of course, the paramedic student will be able to:

- 1) Discuss the importance of completing an ambulance equipment/supply

checklist

- 2) Discuss the factors to be considered when determining ambulance stationing within a community.
- 3) Describe the advantages and disadvantages of air medical transport
- 4) Identify the condition/situations in which air medical transport should be considered.
- 5) Describe the role of the paramedics and EMS systems in planning for MCIs and disasters
- 6) Describe the role of the following exercises in preparation for MCIs
- 7) Define the following types of incidents and how they affect medical management
- 8) Explain the need for the incident management system, incident command system in management emergency medical services incidents
- 9) Describe the functional components of the incident management system in terms of the following: Command, finance, logistic, operations, planning.
- 10) Describe the methods and rationale for identifying specific functions and leaders for these functions in ICS
- 11) List and describe the essential equipment needed to provide logistical support to MCI operations to include airway, respiratory and hemorrhage control; burn management and patient packaging/immobilization
- 12) List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents: Safety, logistics, rehabilitation, tagging, treatment, triage, transportation, extrication/rescue, disposition of deceased (morgue) communications.
- 13) Describe the role of the physician at multiple casualty incidents.
- 14) Describe the need for and techniques used in tracking patients during multiple casualty incidents
- 15) Describe techniques used to allocate patients to hospitals and track them.
- 16) Describe modifications of telecommunications procedures during multiple casualty incidents.
- 17) Define triage and describe the principles of triage
- 18) Define primary triage and secondary triage
- 19) Describe when primary and secondary triage techniques should be implemented.
- 20) Describe the START (simple triage and rapid treatment) method of initial triage.
- 21) Given a list of 20 patients with various multiple injuries, determine the appropriate triage priority with 90% accuracy.
- 22) Given color coded tags and numerical priorities, assign the following terms to each, Immediate, Delayed, Hold, Deceased.
- 23) List the physical and psychological signs of critical incident stress.
- 24) Describe the role of critical incident stress management sessions in MCIs.
- 25) Explain the medical and mechanical aspects of rescue situations.
- 26) Explain the role of the paramedic in delivering care at the site of the injury, continuing through the rescue process and to definitive care.
- 27) Describe the phases of a rescue operation.
- 28) List and describe the types of personal protective equipment needed to safely operate in the rescue environment needed to safely operate in the rescue environment to include head protection, eye protection, hand protection,

personal flotation devices, and thermal protection layering systems, high visibility clothing, and specialized footwear.

- 29) Explain the differences in risk between moving water and flat-water rescue.
- 30) Given a picture of moving water, identify and explain the features and hazards associated with hydraulics, strainers, and dams/hydroelectric site.
- 31) Identify the risks associated with low head dams, and the rescue complexities they pose.
- 32) Explain the effects of immersion hypothermia on the ability to survive sudden immersion and self-rescue.
- 33) Explain the phenomenon of the cold protective response in cold water drowning situations.
- 34) Given a list of rescue scenarios, identify the victim survivability profile and which are rescue versus boy recovery situations.
- 35) Explain why water entry or go techniques are methods of last resort
- 36) Explain the rescue techniques associated with reach-throw-row-go.
- 37) Explain the self-rescue position if unexpectedly immersed in moving water.
- 38) Given a series of pictures, identify which would be considered "confined spaces" and potentially oxygen deficient.
- 39) Identify the hazards associated with confined spaces and risks posed to potential rescuers to include; oxygen deficiency, chemical/toxic exposure/explosion, engulfment, machinery, entrapment, electricity.
- 40) Identify components necessary to ensure site safety before confined-space rescue attempts.
- 41) Identify the poisonous gases commonly found in confined spaces: hydrogen sulfide, carbon dioxide, carbon monoxide, low/high oxygen concentrations, methane, ammonia, nitrogen dioxide.
- 42) Explain the pathophysiology of "crush trauma" syndrome.
- 43) Explain the hazard of cave-in during trench rescue operations.
- 44) Describe the effects of traffic flow on the highway rescue incident, including limited access superhighways and regular access highway.
- 45) List and describe the following techniques to reduce scene risk at highway incidents; apparatus placement, headlight and emergency vehicle lighting, cones, flares, reflective and high visibility clothing.
- 46) List and describe the hazards associated with the following auto/truck components: energy absorbing bumpers, air bag/supplemental restraint systems, catalytic converters and conventional fuel systems, stored energy alternate fuel systems.
- 47) Describe methods for emergency stabilization's using rope, cribbing, jacks, spare tire, wheels, side, road, or on inclines.
- 48) Describe the electrical hazards commonly found at highway incidents (above and below ground)
- 49) Develop specific skill in emergency stabilization of vehicles and access procedures and an awareness of specific extrication strategies.
- 50) Given a diagram of a passenger auto, identify the following structures: A,B,C,D posts, fire wall, uni-body versus frame designs.
- 51) Explain the differences between tempered and safety glass, identify its locations on a vehicle and tell how to break it safely.
- 52) Explain typical door anatomy and methods to access though stuck doors.
- 53) Explain SRS or "airbag" systems and methods of neutralizing them.

- 54) Define the following terms: low angle, high angle, belay, rappel, scrambling, hasty rope slide
- 55) Describe the procedure for Stokes litter packaging for low-angle evacuations.
- 56) Develop proficiency in patient packaging and evacuation techniques that pertain to hazardous or rescue environments.
- 57) Explain the different types of "Stokes" or basket stretchers and the advantages and disadvantages associated with each.
- 58) Explain the procedures for low-angle litter evacuation to include anchoring, litter/rope attachment, lowering and raising procedures
- 59) Explain techniques to be used in nontechnical litter carries over rough terrain
- 60) Explain nontechnical high-angle rescue procedures using aerial apparatus.
- 61) Explain assessment procedures and modifications necessary when caring for entrapped patients.
- 62) List equipment necessary for an "off road" medical pack
- 63) Develop an understanding of the medical issues involved in providing care for a patient in a rescue environment.
- 64) Explain the need for and techniques of thermal control for entrapped patients.
- 65) Explain specific methods of improvisation for assessment, spinal immobilization and extremity splinting.
- 66) Explain the indications, contraindications and methods of pain control for entrapped patients.
- 67) Identify resources for substance identification, decontamination, and treatment information including the following: Poison control center, medical control, material safety data sheets (MSDS), reference textbooks, computer databases (CAMEO), CHEMTREC, technical specialists, agency for toxic substances, and disease registry.
- 68) Given a simulated hazardous substance, use reference material to determine the appropriate actions.
- 69) Explain the use and limitations of personal protective equipment in hazardous material situations.
- 70) List and describe the following routes of exposure: topical, respiratory, gastrointestinal, and parental.
- 71) Explain the following toxicological principles: acute and delayed toxicity, route of exposure, local versus systemic effects, dose response, and synergistic effects.
- 72) Determine the hazards that are present to the patient and paramedic, given an incident involving hazardous materials.
- 73) Determine the factors that determine where and when to treat a patient, including substance toxicity, patient condition, and availability of decontamination.
- 74) List and explain the common signs, symptoms, and treatment for the following substances: corrosives, pulmonary irritants, pesticides, chemical asphyxiates, hydrocarbon solvents.
- 75) Explain the role of the paramedic or EMS responder in terms of the following: incident size-up, assessment of toxicological risk, appropriate decontamination methods, treatment of semi-decontaminated patients, and transportation of semi-decontaminated patients.
- 76) Define the following and explain their importance to the risk assessment process: boiling point, flammable/explosive limits, flash point, ignition

temperature, specific gravity vapor density, vapor pressure, water solubility, alpha radiation, beta radiation, gamma radiation.

- 77) Define these toxicological terms and their use in the risk assessment process: threshold limit value, lethal concentration and doses, parts per million/billion, immediately dangerous to life and health, permissible exposure limit, short term exposure limit, ceiling level.

### **General Education Outcomes Supported**

- Students develop higher order thinking skills.
- Students can employ a variety of sources to locate, evaluate, and use Information.

### **Standard Practices Topics List**

N/A

### **Learning Activities**

N/A

### **Assessments**

Students will be assessed by written exams.

### **Grading guidelines**

Grades are cumulative from chapter exams.