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Course Outline for EMS 20

EMERGENCY MEDICAL TECHNICIAN

Effective: Fall 2016

I. CATALOG DESCRIPTION:
EMS 20 — EMERGENCY MEDICAL TECHNICIAN — 6.50 units

Provides training in the foundation skills and knowledge required of the EMT scope of practice. The EMT certification is the minimum requirement for ambulance attendants and most entry-level firefighter positions. EMT certification is also required for entry into paramedic training. This training program is accredited by the Alameda County Emergency Medical Services District.

5.00 Units Lecture 1.50 Units Lab

Prerequisite
EMS 30 - Emergency Medical Responder
with a minimum grade of B

Grading Methods:
Letter Grade

Discipline:

	MIN
Lecture Hours:	90.00
Lab Hours:	81.00
Total Hours:	171.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:
Before entering the course a student should be able to:

A. EMS30

IV. MEASURABLE OBJECTIVES:
Upon completion of this course, the student should be able to:

A. explain the roles and responsibilities of the EMT
B. describe how an EMT functions within the Alameda County EMS System and the established policies, procedures, and protocols
C. recognize conditions and situations that require pre-hospital care and/or stabilization
D. perform rapid, comprehensive, and accurate patient assessments
E. demonstrate psychomotor competencies of all skills and interventions within the EMT scope of practice according to the standards of the National Registry of Emergency Medical Technicians
F. manage a multi-casualty incident
G. demonstrate the proper use and maintenance of all biomedical equipment used by the EMT
H. explain the medical/legal aspects of emergency care and issues related to proper documentation, confidentiality statutes such as HIIPAA and ethics
I. assist paramedics with the delivery of advanced life support within the EMT scope of practice
J. prevent disease transmission through the use of body substance isolation principles
K. discuss wellness issues such as stress management, body mechanics, lifting techniques, and use of personal protective equipment
L. differentiate communication strategies for different ages, stage of development, patients with special needs, and diverse cultures
M. demonstrate principles of safely and correctly administering medications within the EMT scope of practice and identifying those medications

V. CONTENT:
A. Preparatory
1. Roles and responsibilities of the EMT, medical direction, quality improvement, and continuing education.
2. Well being of the EMT, body substance isolation, protective equipment, and scene safety.
3. Medical, legal and ethical issues; review of Federal, State and local laws pertinent to EMT scope of practice. Confidentiality, advance directives and ethical/moral issues are discussed.
4. Basic anatomy, physiology, pathophysiology, and medical terminology.
5. Vital signs and patient history, review and development of skills learned in prerequisite coursework.
6. Techniques for lifting and moving patients with a focus on body mechanics and injury prevention.

B. Airway Management

1. Ventilation and oxygen therapy.
2. Comprehensive study of respiratory function and anatomy of adult and pediatric patients.
3. Utilization of airway adjuncts including oral airways, oxygen administration techniques, continuous positive airway pressure ventilation, and utilization for infants and C.O.P.D. patients.

C. Patient Assessment
1. Scene Evaluation - Determination of mechanism of injury, resource needs, and identification of scene hazards.
2. Patient Evaluation - Assessment based approach to patient evaluation; integration of patient assessment techniques into overall scene management and treatment modalities.
3. Assessment of Geriatric Patients - Understand the differences between the average adult, geriatric, and pediatric patient.
4. Communications - Skills, equipment, and systems used by the EMT. Emphasis on medical direction and on-line communications.
5. Documentation - Utilization of the "Prehospital Care Report" and standardized data set established by the 1994 DOT EMT curriculum.

D. Medical, Behavioral, and Obstetrics/Gynecology
1. General Pharmacology - Medication terminology, indications, contraindications, dosage, actions, and side effects of the six medications within the EMT scope of practice.
2. Respiratory Emergencies - Signs and symptoms of breathing difficulty and respiratory distress. Pathophysiology of common respiratory conditions. Review of adult and pediatric anatomy, training in treatment modalities for respiratory distress and failure.
3. Cardiac Emergencies - Signs and symptoms of cardiac compromise. Pathophysiology of cardiovascular disease. Recognition of acute coronary syndrome.
4. Automated External Defibrillation - Awareness level training in the use of A. E. D. equipment by EMT.
5. Altered Mental Status, Diabetic Emergencies - Recognition of the signs and symptoms of altered mental status and the relationship to life threatening conditions. Pathophysiology of diabetic emergencies and prehospital treatment.
6. Altered Mental Status with Loss of Function - Understanding of the cause, nature and care of patients with stroke and transient ischemic attacks.
7. Altered Mental Status, Seizures and Syncope - Review the causes, nature and treatment of patients experiencing a loss of consciousness or seizure activity.
8. Allergic Reactions - Recognition of the signs and symptoms of anaphylaxis and prehospital care of these patients including the use of an epinephrine auto-injector with medical direction.
9. Poisoning Emergencies - Recognition of the signs and symptoms of accidental or intentional poisonings and the management of these patients. Use of activated charcoal for poisonings under medical direction.
10. Drug and Alcohol Emergencies - Recognition of the signs and symptoms of alcohol and drug emergencies and the management of these patients.
11. Acute Abdominal Pain - Discussion of the pathophysiology of acute abdominal pain and recognition of urgent situations requiring management and rapid transport.
12. Environmental Emergencies - Recognition of the signs and symptoms of hypothermia and hyperthermia and related conditions. Management of these patients in the prehospital environment.
13. Drowning, Near-Drowning and Diving Emergencies - Understanding of water related emergencies with an emphasis on rescuer safety.
14. Behavioral Emergencies - Awareness, recognition and management of behavioral emergencies with an emphasis on scene and rescuer safety.

E. Trauma
1. Mechanism of Injury - Kinetics of trauma, study of the physics of motion that may produce injury, patterns of injury produced by vehicle accidents, falls, projectiles.
2. Bleeding and Shock - Recognition and management of internal and external bleeding and decreased perfusion states.
3. Soft Tissue Injuries - Management of various types of soft tissue injuries with emphasis on bleeding control and hypoperfusion.
4. Burn Emergencies - Recognition and management of thermal, chemical, and electrical burns with emphasis on inhalation injuries and rescuer safety.
5. Musculoskeletal Injuries - Recognition and management of sprains, strains, and fractures. Review of splinting techniques and assessment.
6. Injuries to the Head - Recognition and management of head injury patients with an emphasis on airway management and altered mental status.
7. Injuries to the Spine - Utilizing scene size-up and mechanism of injury considerations to maintain a high index of suspicion of spinal injury. Utilize various methods of spinal immobilization and patient extrication.
8. Eye, Face and Neck Injuries - Recognition and management of facial injuries with emphasis on airway management and spinal stabilization.
9. Chest, Abdomen and Genitalia Injuries - Recognition and management of chest, abdominal, and genitalia emergencies and identification of life threatening injuries.
10. Agricultural and Industrial Emergencies - Special situations that require specialized teams of rescuers or equipment. Review of scene safety and evaluation.

F. Infants and Children
1. Anatomical and physiological differences between children and adults.
2. Injuries and illnesses in infants and children.

G. Operations
1. Moving Patients - Study of the various techniques and equipment for moving patients. Identify the need for emergency, urgent and non-urgent moves.
2. Ambulance Operations - Maintenance and operation of the ambulance as well as cleaning, disinfection and disposal of contaminated items.
3. Gaining Access and Extrication - Awareness of rescue procedures and recognition of the need for special training and equipment for technical rescue situations.
4. Hazardous Materials Emergencies - First responder awareness training as required by Title 22. Recognition of Haz-mat incidents and rescuer safety.
5. Multiple Casualty Incidents - Utilizing the incident command system and standardized triage systems for the management of multiple casualties.

VI. METHODS OF INSTRUCTION:

A. **Lecture** - Lectures in basic concepts and skills
B. Reading assignment in text and other sources
C. Written assignment on topic of prehospital care
D. **Clinical** - Use of skills in supervised clinical rotation
E. **Lab** - Scenario based skills lab

VII. TYPICAL ASSIGNMENTS:

A. Lecture
1. Respiratory Emergencies

B. Reading
1. Read chapter 14 in text, Respiratory Emergencies.

2. Review airway management skills in skills book.

C. Skills Lab
1. patient evaluation skills in small groups with assistant instructor.
2. As a team, manage a simulated gunshot victim and critique performance with assistant instructor.

D. Written Assignment
1. Complete a case study on three patients. One from each clinical experience.
2. Complete a two page written analysis of a current issue affecting EMS.

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Other:
    a. Objective Examinations and Quizzes
        1. A total of 15 quizzes typically consist of 20 multiple choice questions on the previous week's topic.
        2. A 50 question multiple choice midterm exam is given which covers the first four modules and topics from EMS 61.
        3. A 120 question multiple choice final examination is given at the completion of the course.
    b. Skills Evaluation
        1. Skills are evaluated as they are mastered. Skill evaluations are graded on a pass/fall based on criteria established by the National Registry of Emergency Medical Technicians
        2. A final certifying skills evaluate. Students are responsible for all skills within the EMT scope of practice.
        3. Performance in the clinical environment is subjectively evaluated by the nurse/preceptor.

B. **Frequency**

1. Quizzes--weekly
2. One mid-term
3. Final Exam
4. Skills evaluations are periodic throughout semester
5. Final skills evaluation is done at the completion of the program.

IX. TYPICAL TEXTS:

1. American Academy of Orthopedic Surgeons (AAOS). *Emergency Care and Transportation of the Sick and Injured.* 11th ed., Jones and Bartlett Learning, 2017.
2. Mistovich, Joseph. *Prehospital Emergency Care.* 10th ed., Pearson Education, 2013.
3. Limmer, Daniel. *Emergency Care.* 13th ed., Pearson Education, 2016.
4. Emergency Care and Transportation of the Sick and Injured - Navigate. Jones and Bartlett Learning, (11th).

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. Penlight - Type of student’s choice
B. Stethoscope - Inexpensive style, student choice
C. Watch with second hand - student's choice