Fire & Rescue Academy

Class Syllabus

Program Information

Lead Instructor: Chris Franklin, Training Officer – Trussville Fire & Rescue
HTHS: Joy Young, Assistant Principal/CTE Administrator – HTHS

Instructor Contact Information

Office Location: Trussville Fire & Rescue
Fire Administration
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Course Overview

This program provides high school students an opportunity to immerse themselves in the exciting and rewarding career field of Emergency Services. Instruction is led by certified instructors from Trussville Fire & Rescue in cooperation with Trussville City Schools. Students will learn a variety of topics in Emergency Medicine as well as Fire Fighting and Fire Science. Upon successful completion of this course, students are certified as an Nationally Registered Emergency Medical Responder.

Course Prerequisites/Corequisites

Membership in the Trussville Fire & Rescue Explorer Post

Course Requirements

a. Students taking this course should have a strong GPA. This course is heavy in content and may require a lot of study time outside of class to be successful.
b. This course will be two (2) periods in length, 1st and 2nd, and run the full length of the TCS calendar school year.
c. Students are expected to attend all classes promptly and for the scheduled time. It is imperative that students attend and obtain the required course hours required. This course may require additional time outside of the assigned periods. This may include some early mornings, evenings, or weekends to obtain the needed hours of instruction.
d. Students will be required to have transportation or have arrangements for transportation. Instruction and drills will be held at various locations, including HTHS, Trussville Fire & Rescue facilities, or other locations determined by the instructor.
e. This is a physically demanding course and students should be in good physical shape.

Required Text

Schottke, David (2011). *Emergency medical responder,* Your first response in emergency care 6th edition. A.N. Pollak (Ed.). Burlington, MA: Jones & Bartlett Learning

Required Materials for Class

Uniform (provided)
Black belt
Dark shoes; no tall heels, sandals or open toe shoes
Firefighting PPE (provided)
Textbook(s) (provided)
Materials for taking notes
Pen, Pencil

Successful Course Certification

To be eligible for certification as an NREMT Emergency Medical Responder:

a. Successfully complete a state-approved EMR course that meets or exceeds the National Emergency Medical Services Education Standards for the Emergency Medical Responder
b. Have a current CPR-BLS for Healthcare Provider or equivalent credential
c. Completion of a state-approved EMR psychomotor exam
d. Successful completion of the NREMT EMR Cognitive Exam

Specific Goals & Objectives

For Emergency Medical Responder:

1. Preparatory
    a. Uses simple knowledge of the emergency medical services (EMS) system, safety/well-being of the emergency medical responder (EMR), medical/legal issues at the scene of an emergency while awaiting a higher level of care
    b. Uses simple knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles, and bones as the foundation of emergency care
2. Airway
    a. Applies knowledge (fundamental depth, foundational breadth) of general anatomy and physiology to assure a patent airway, adequate mechanical ventilation, and respiration while awaiting additional EMS response for patients of all ages
    b. 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
3. Patient Assessment
    a. Use scene information and simple patient assessment findings to identify and manage immediate life threats and injuries within the scope and practice of the emergency medical responder (EMR)
4. Medical
    a. Recognizes and manages life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response
    b. Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response
5. Trauma
    a. Uses simple knowledge of shock and respiratory compromise to respond to life threats

    b. Uses simple knowledge to recognize and mange life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response
6. Special Patient Populations
    a. Recognizes and manages life threats based on simple assessment findings for a patient with special needs while awaiting additional emergency response
    b. Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response
7. EMS Operations
    a. Uses simple knowledge of the EMS system, safety/well-being of the EMR, medical/legal issues at the scene of an emergency while awaiting a higher level of care
    b. Knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety

For Firemanship:

1. History of the Fire Service
    a. Define the importance of the mission of the fire service
    b. Identify the major events that have altered the history of the fire service
2. Fire Department Organization, Command, and Control
    a. Describe a typical fire department organization
    b. Define and describe the role of the Firefighter I in the fire service
    c. Explain what a standard operating procedure is
3. Firefighter Safety
    a. Describe potential accidents that may occur during structural firefighting operations
    b. List individual actions and attitudes that can help reduce firefighter injuries and death
    c. Describe the primary purpose of NFPA 1500
    d. Describe procedures for safely functioning on an emergency scene
4. Fire Behavior
    a. Describe the properties of solid, liquid, and gas fuels associated with structural fires
    b. Define combustion
    c. Identify products of combustion
    d. Name the parts of the fire tetrahedron
    e. Explain the four sources of heat
    f. Identify the classes of fire
    g. Describe the effects of oxygen on fire
    h. List and describe the four phases of fire
    i. List and describe the three modes of heat transfer
    j. Describe the principles of thermal layering in a structure fire
    k. Describe the methods for extinguishing a fire

    l. Explain how the effects of fire can create a hazardous condition in a structure
    m. Describe hostile fire events including flashover and backdraft and the methods for preventing them from occurring
5. Personal Protective Clothing, Equipment, and Ensembles
    a. Describe the role of personal protective clothing for firefighters
    b. Identify the various types of personal protective equipment (PPE) used in the fire service
    c. Given a spedific piece of equipment, list and describe various tools and inspection and cleaning methods used to return the equipment back to service
    d. Demonstrate proper donning, doffing, and reuse posture for personal protective clothing
    e. Demonstrate a team check following PPE donning
    f. Given a PPE ensemble, appropriately don the ensemble within one minute
6. Self-Contained Breathing Apparatus
    a. List conditions requiring respiratory protection
    b. Describe the effects of oxygen deficiency and toxic gases on the human body
    c. Describe the limitations of SCBA
    d. Describe methods for conserving air at the emergency scene
    e. Name the components of the SCBA used in the fire service
    f. Demonstrate the ability to don an SCBA and activate the system within 1 minute
    g. Demonstrate proper breathing techniques while wearing an SCBA
    h. Demonstrate the ability to maneuver through restricted passages while wearing an SCBA
    i. List the three steps that should be taken when entrapment occurs
    j. Explain emergency procedures that responders take when an air supply is depleted
    k. Demonstrate proper exchange of an SCBA air cylinder
    l. Demonstrate rescue techniques for locating and removing a downed firefighter with a functioning or malfunctioning SCBA
7. Portable Fire Extinguishers
    a. Explain the five classes of fire and the risks associated with each class
    b. List and describe the kinds of fire extinguishers used for each class
    c. Explain how the rating systems of portable extinguishers are utilized for proper extinguisher selection
    d. Discuss the limitations of portable extinguishers
    e. Given a Class A, B, or C fire, select the appropriate extinguisher; make a safe approach and completely extinguish the fire
8. Fire Hose and Appliances
    a. Describe the construction, care, and maintenance of fire hose and hose couplings
    b. Explain fire hose cleaning techniques
    c. Identify the types of hose couplings and threads

    d. Demonstrate connecting and disconnecting various sizes and types of couplings on hose
    e. List and describe fire hose rolls and loads and their use
    f. Demonstrate the proper methods of rolling fire hose and loading fire hose back on apparatus
    g. Demonstrate hose carries
    h. Demonstrate the ability to advance charged and uncharged hoselines in various firefighting situations to include ladders and stairwells
    i. Identify hydrant connections and their proper operation
9. Nozzles and Fire Streams
    a. List and explain the properties of a fire stream
    b. Describe the various types of fire streams and their purposes
    c. Given a selection of nozzle types, identify a solid, fog, and broken stream nozzle
    d. Describe the characteristics of the various sizes of hoseline
    e. List the observable interior and exterior changes that indicate proper application and effect of a fire stream on a fire
    f. Demonstrate the opening and closing of nozzles to prevent a water hammer from occurring
    g. Describe the methods of fire stream application: direct, indirect, and combination
    h. Demonstrate the methods for accomplishing each type of fire attack
10. Ground Ladders
    a. Name the parts of different types of ground ladders and describe their functions
    b. Describe the ladder selection process and the functions for which different types of ground ladders can be used
    c. Demonstrate the ability to place a ladder at the proper height and angle
    d. Choose the proper ladder length needed for various job functions or situations in an emergency operation
    e. Identify proper ladder placement and raising techniques
    f. Recognize hazards prior to placement of the ladder
    g. Demonstrate skills associated with ladders, to include carrying and raising ladders and extending and locking flies
11. Forcible Entry
    a. Identify forcible entry tools by common name and use
    b. Demonstrate proper techniques for carrying and operating selected hand and power tools
    c. List the basic door construction types
    d. Describe forcible entry techniques on a variety of doors
    e. List the types of wall construction
    f. Describe procedures for breaching both interior and exterior walls and floors
12. Ventilation
    a. Identify the principles, advantages, and effects of ventilation
    b. Identify the various types of ventilation

c. Discuss the factors affecting vertical and horizontal ventilation
d. List and describe safety considerations required for ventilation operations

13. Salvage and Overhaul
    a. Explain the purpose of salvage and overhaul operations and how "customer service" factors into the procedures
    b. Describe methods of property conservation during salvage and overhaul operations
    c. Given a specific piece of equipment, list and describe various tools, inspection, and cleaning methods used to return the equipment back to service
    d. Describe the proper manufacturer's or department's procedures for tool and equipment cleaning
    e. Identify tools and equipment and describe how they are used in overhaul operations
    f. Explain how fire attack and ventilation affects the overhaul effort
    g. Explain the importance of fire scene preservation
14. Ropes and Knots
    a. Identify materials and styles of construction for fire service rope
    b. Define the basic terminology used when discussing ropes, knots, and hitches
    c. Identify the basic knots and hitches used in the fire service
    d. List conditions that would cause a rope to be placed out of service
15. Rescue Procedures
    a. Describe hazardous conditions found on an emergency scene
    b. Describe the critical elements alerting responders to a hazardous situation
    c. Describe safety equipment used by emergency responders to safely function at an emergency scene
    d. List indicators of the presence of victims in a rescue situation
    e. Describe the purpose and operational characteristics of the primary and secondary search
    f. Describe the proper procedures for victim drags and carries
16. Fire Control
    a. Describe safety equipment used by emergency responders to safely function at an emergency scene
    b. Identify hazards that may develop while fighting a vehicle fire
    c. Describe the methods of fire stream application
    d. Demonstrate the methods for accomplishing each type of fire attack
    e. Explain the difference between offensive and defensive modes of fire attack
    f. Discuss the properties, principles, and safety concerns associated with utilities
    g. Recognize various types of fuel used in automobiles

Evaluation of Student Performance

The following assessment instruments will be utilized:

		1st Semester	2nd Semester
1.	Class/Lab Participation	20%	20%
2.	Quizzes	20%	0%
3.	Course Exams/Tests	40%	30%
4.	Job Shadowing	0%	30%
5.	Term Exams	20%	20%
	Semester Total	100%	100%

Class/Lab Participation: Class/Lab participation is required for this course. This course utilizes lecture, open discussions, and hands on skills practice/labs to achieve the learning objectives. Students may have times designated for class activities outside of the normal school hours. Every student is expected to:

a. Participate in all class activities
b. Come to class prepared to participate in discussions
c. Come to class prepared to participate in skills practice/labs
d. Complete all assignments on time
e. Be respectful of the beliefs, opinions, and values of the instructors and other students

Quizzes: Unannounced quizzes may be given periodically to assure that students are keeping up with the assigned material. Students who miss quizzes will not be allowed to make them up, unless the absence was deemed excusable. Quizzes may consist of essay, multiple choice, word problems, fill-in-the-blank, diagrams, and short answer. Quizzes may be comprehensive and cumulative from previous material. The content may be derived from the following sources: class lecture notes; class texts and reading assignments; additional supplemental disseminated materials in class; guest presentations; visual presentations; and, internet material. Students may drop the lowest quiz grade once per semester.

Course Exams/Tests: Exams/Tests may be given at the end of each chapter, unit, or at the instructor's discretion. The lead instructor may schedule other exams/tests to ensure student comprehension of material.

Job Shadowing: As part of this course, students will also be enrolled in the Trussville Fire & Rescue Explorer Post. Through this post, students will be required to ride-along/job shadow at Trussville Fire & Rescue for a time determined by the course lead instructor. The purpose of this program is to provide hands-on career activities so that potential candidates can gain insight into the field of the fire service.

Term Exams: Students will take a term exam at the end of each semester. Term exams will count as 20% of the student's semester average per TCS policy.

Attendance Policy

Each student must complete the required hours as stated by the lead instructor, the National Registry of Emergency Technicians and the Alabama Fire College for certification. Students will be required to make-up, if necessary, certain portions of this course that are missed, regardless of the reason. Students are also to adhere to the attendance policy of the Trussville City Schools as outlined in the TCS Code of Student Conduct.

Late Work/Make-up Work

Missed course exams, tests, quizzes, and labs will receive a zero. Also, missed activities may impede the individual from being eligible for certification. The lead instructor may grant the student ability to make up work under certain circumstances, e.g. excused absences or illness. If a student has advanced knowledge of an absence, the student should notify the instructor as soon as possible to schedule any make-up work or activity. Make-up exams, tests, or assignments may be different from the one given at the scheduled time.

Student Assistance

At any point during this course, if the student needs assistance, he or she is encouraged to seek assistance as soon as possible. Students may contact the instructor after class or during office hours. You may call the instructor by cell phone if needed. If there is a request for academic accommodation, a request should be made within the first two weeks of class. If there is a formal request for assistance, then the student should send the appropriate documentation to Assistant Principal Joy Young.

Students with Disabilities: It is the responsibility of any student with an identified and verified disability to notify the instructor at the beginning of the semester or upon diagnosis, if during the semester, of their disability.

Academic Dishonesty

Cheating, which includes plagiarism, shall not be tolerated and disciplinary action will be taken according to the TCS Student Code of Conduct. If it is found that a student has cheated, the grade(s) for which the student cheated will receive a zero.

Student Conduct

This course will provide many opportunities for students to interact with each other and the instructors. It is important that all participants act in an appropriate manner. Also, during drills, practical exercises, and evolutions there will be times when safety will be of the utmost importance and disruption will not be tolerated. Furthermore, as students in a program of public safety, students will be held to a higher standard of conduct.

Disclaimer

As circumstances dictate, the instructor may need to modify the above requirements or their timings. This may include the number and frequency of assignments, tests, quizzes, homework, or drills and exercises.