



SFFMA
SPECIALIZED
CERTIFICATION
PROGRAMS

Revised July 2009



State Firemen's and Fire Marshals' Association of Texas
Texas Volunteer Firefighters' and Fire Marshals' Certification Board

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TO: Texas Fire Chiefs and Certification Coordinators

FROM: Texas Volunteer Firefighters' and Fire Marshals' Certification Board

RE: SFFMA Specialized Certification Programs

Enclosed is a copy of the Specialized Programs for Volunteer Firefighters. Included in this packet are the necessary forms and required training for: Driver/Operator, Fire Prevention Specialist Level I and II, Fire and Arson Investigator, and Fire Officer I and II, Incident Safety Officer, Public Information Officer, Public Fire Educator I and II, Wildland, Technical Rescue Apprentice, Wilderness Rescue Technician I & II, Rope Rescue Technician I & II, Vehicle Extrication Technician. The program is administered by SFFMA staff in Austin, under the guidance of the Texas Volunteer Firefighters' and Fire Marshals' Certification Board.

Included in the materials are forms necessary to apply for certification, along with training requirements which must be completed in order to obtain certification. As you will note, applications for certification must be sent to the Austin office for approval. Proper fees and sufficient documentation must also be included to substantiate training indicated on the applications.

The Texas Volunteer Firefighters' and Fire Marshals' Certification Board welcomes you to these programs and urges you to help us upgrade the training standards for Volunteer Fire Prevention and Investigation personnel.

An information packet on the Firefighter Certification Program is available upon request from the Austin office or from the Certification page of the SFFMA website (www.sffma.org/certification.html).

WE ARE SENDING ONLY ONE COPY OF EACH FORM AND SUGGEST THAT YOU REPRODUCE THE NUMBER YOU NEED. If you have no means of reproducing these forms, please contact the Austin office and we will supply the number of forms you need.

Each of the Association's member departments has access to the SFFMA Online program which enables the department to: maintain current contact information and membership rosters; track and report training hours; generate dues invoices and certification applications. Access information can be obtained by contacting the Austin office.

If you have any questions regarding any of these programs, contact your Area Board Member or the Austin office at the above address.

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I. RECOMMENDATION

That Certification Programs for volunteer firefighters be established in the State of Texas on a voluntary basis and said programs be administered through the State Firemen's and Fire Marshals' Association of Texas (SFFMA) office: Volunteer Fire Prevention and Investigation Personnel programs updated effective January 1, 2000; Driver/Operator program effective August 1, 2000; Fire Officer I, Public Information Officer, Incident Safety Officer and Public Fire Educator programs effective January 27, 2006; Fire Officer II program effective June 9, 2007; Wildland and Search & Rescue programs implemented January 31, 2009; Vehicle Extrication Technician effective August 1, 2009. Additional programs will be implemented as deemed necessary by the Certification Board.

II. BOARD MEMBERS

That a Board of no more than twenty-five (25) members, appointed by the President of the SFFMA and known as the Texas Volunteer Firefighters' and Fire Marshals' Certification Board, administer the program.

- A. Board Members will be appointed to serve four-year terms on the board.
- B. Vacancies of the Board will be filled by the President of the SFFMA to fill unexpired terms caused by any reason.
- C. No two Board Members are to be from the same zone area.
- D. Board Member must be an active member of a regularly organized volunteer or combination fire department that holds current membership in the SFFMA.
- E. Board Member must maintain a current individual membership in the SFFMA.
- F. Board Member must have at least eight (8) years experience with a recognized fire department or combination of recognized fire departments and meet the criteria for Certification Coordinator.
- G. Board Member must reside in the zone that is to be represented.
- H. Prospective new Board Member's name and resume must be submitted in writing by the SFFMA District to the President and Executive Director of the SFFMA.
- I. There may be up to two (2) assistants per zone, designated by the Board Member from that zone. Assistants will be non-voting members.
- J. Board Member must hold at least an SFFMA Basic Accredited Firefighter certification.
- K. One Board Member (Zone 20) shall represent Texas Engineering Extension Service (TEEX).
- L. One Board Member (Zone 21) shall represent Texas Forest Service (TFS).

III. PROCEDURES OF THE BOARD

- A. Meetings
 - 1. The Board shall meet at such times and places in the State of Texas as it deems necessary.
 - 2. Meetings shall be called by the Chairman upon his own motion, or upon the written request of five members.
- B. Quorum – A majority of members shall constitute a quorum.
- C. Orders of Business – Robert's Rules of Order shall prevail for all meetings.
- D. Officers:
 - 1. Officers of the Board shall consist of a Chairman, Vice Chairman, Secretary and Assistant Secretary.
 - 2. The Board shall elect its officers from the appointed members at its first meeting succeeding the June State Convention.

IV. CERTIFICATION IMPLEMENTATION METHOD

A. General Statement

1. It shall be understood that the suggested minimum standards herein described are designated as minimum programs. Participating Fire Departments are encouraged to exceed the minimum programs wherever possible. Continuous training beyond the minimum standards and testing on a regular basis for volunteer firefighters is strongly recommended. Nothing in these regulations shall limit or be construed as limiting the powers of the fire department or other agency or department of any Texas city, town, county, or municipal corporation to enact rules and regulations which establish a higher standard of training above the minimum.

Although the Board strongly endorses and supports adequate physical ability and good moral character as entrance requirements into a fire department, the matter of establishing entrance requirements is left to the respective local department.

2. Each participating fire department must have access to current set of books from the library of any of the approved publishers, and must maintain current editions as they become available. Contact the SFFMA office for a current list of manuals required, or refer to our website at www.sffma.org.

Lesson plans, binders and all approved training manuals, slides, multimedia, and current prices are available from the SFFMA office in Austin at discounted prices. Purchase programs may be arranged on an individual need basis.

3. Training provided under this certification program should include facilities, apparatus, equipment, reference materials and records to support a quality volunteer firefighter education and training program. The resources should provide for classroom instruction, demonstrations and practical exercises for Trainee to develop the knowledge and skills required for volunteer firefighter certification.
4. Forms to apply for certification or to maintain progress of each member will be furnished upon request and are available online (www.sffma.org/certification.html). Forms shall be returned to the Association office in Austin for processing.

B. Objectives

1. The objective of the Board is to raise the level of competence of volunteer fire fighting and prevention personnel by establishing minimum standards.
2. The Board has the authority to certify volunteer fire protection training and educational programs as having attained the minimum required standards suggested by the Board.

C. Definitions

1. Certain definitions are used in describing the minimum standards and related requirements as suggested by the Board.
2. Definitions used include the following:
 - a. Board – is the Texas Volunteer Firefighters' and Fire Marshals' Certification Board.
 - b. Chairman – is the presiding officer of the Board.
 - c. Fire Chief – is the head of the fire department.
 - d. Active Firefighter – is 18 years of age or older who participates in a minimum of 40% of the drills, 25% of the fire/emergency calls, and the certification program approved by the SFFMA by the submission of an annual progress report of training hours earned.
 - e. Certification Coordinator – is the official person in charge of setting up, maintaining and validating all of the certification records.
 - f. Trainee – is a member of the fire department who has not satisfied the requirements of the certification in question.
 - g. Department – is a fire department that utilizes fire suppression and prevention personnel.
 - h. School – is any school, college, university, academy or local training program which offers fire service training and includes within its meaning the combination of course curriculum, instructors, and facilities.
 - i. Requirement – is a description of a provision, which relates to suggested minimum standards.
 - j. Specification – is a description of a requirement supplementing a section of the regulations.

- k. Examination – is a Board approved test administered by the Board and/or a Board approved examiner, which an individual must pass as one of the requirements for accredited certification.
- l. Curriculum – The objectives established by the Board as a minimum requirement for certification as an SFFMA approved Basic, Intermediate, and Advanced Volunteer Firefighter.
- m. Objective – The criteria required for mastery of each numbered statement.
- n. Eligibility – A determination of whether or not an individual has met the requirements set by the Board and would therefore be allowed to take a Board examination.
- o. Endorsement of Eligibility – A signed statement testifying to the fact that an individual has met the training hour requirements and objectives of specific levels of the Board approved curriculum and is qualified to take a Board approved examination of such level.
- p. Examinee – An individual who has met the Board requirements and therefore qualifies to take a Board approved examination.
- q. Examiner – An individual appointed and/or approved by the Board or Board member to administer a Board approved examination.
- r. Certificate of Successful Completion – A document supplied by the SFFMA which identifies and shall be used as proof that an individual has completed the required training hours and has successfully passed the Board approved examination(s) for a specific level of the SFFMA Volunteer Firefighter Curriculum.
- s. AHJ – Authority Having Jurisdiction
- t. FEMA – Federal Emergency Management Agency
- u. ICS – Incident Command System
- v. IFSTA – International Fire Service Training Association
- w. NFIRS – National Fire Incident Reporting System
- x. NIMS – National Incident Management System
- y. NFA – National Fire Academy
- z. NFPA – National Fire Protection Association
- aa. NWCG – National Wildfire Coordinating Group
- ab. TCFP – Texas Commission on Fire Protection
- ac. Fire Prevention Specialist – one who is trained to a minimal acceptable level to participate in review and examine buildings, equipment, and processes for fire and life safety rule compliance. It is not necessary to be appointed or elected a Fire Marshal to obtain this certification.
- ad. Fire Investigator – one who is responsible for determining the cause of a fire.
- ae. Arson Investigator – a commissioned law enforcement officer who is charged with the responsibilities of investigating arson.
- af. Fire Officer I – a first-line supervisory officer who has met all the job performance and certification requirements of Fire Officer I as defined in NFPA 1021: *Standard for Fire Officer Professional Qualification*.
- ag. Fire Officer II – a midlevel supervisor who performs both supervisory and first-line managerial functions who has met the certification requirements for Fire Officer II, in addition to previously meeting all the job performance and certification requirements of Fire Officer I as defined in NFPA 1021: *Standard for Fire Officer Professional Qualifications*.
- ah. Search Technician – personnel trained and qualified to locate missing, lost or trapped persons in diverse situations and environments
- ai. Rescue Technician – personnel trained and qualified to extricate and stabilize individuals in diverse situations and environments
- aj. Search and Rescue Apprentice – personnel trained to the minimum level required to perform as a trainee in any of the identified Search or Rescue specialties

V. MINIMUM STANDARDS FOR FIRE PREVENTION AND INVESTIGATION PERSONNEL

Fire Prevention and Investigation Personnel who have received training prior to passage of this program may, upon proof to the Board member and his approval, apply the training for certification. Any training hours received prior to January 1, 1993 must be approved by the Board.

A. Reference Materials

The jurisdictional entity in which the volunteer Fire Prevention and Investigation Personnel serves must have access to a set of training manuals, as follows:

IFSTA

- Forcible Entry* (7th Ed.)
- Fire Service Ground Ladders* (9th Ed.)
- Hose Practices* (7th Ed.)
- Fire Service Loss Control* (1st Ed.)
- Pumping Apparatus Driver/Operator Handbook* (1st Ed.)
- Fire Service Rescue* (6th Ed.)
- Fire Inspection and Code Enforcement* (6th Ed.)
- Aircraft Rescue & Fire Fighting* (4th Ed.)
- Fundamentals of Wildland Fire Fighting* (3rd Ed.)
- Introduction Fire Origin and Cause* (2nd Ed.)
- Fire Investigator* (1st Ed.)

Brady

- 1st Responder* (1st Ed.)

NFPA

- NFPA 30: Flammable and Combustible Liquids*
- NFPA 921: Guide for Fire and Explosion Investigations*
- NFPA 1901: Pumper Fire Apparatus*

Locally Adopted Fire Building, Life Safety and Electrical Codes of Participants Jurisdiction

B. Fire Prevention Specialist

The Certification Program offers two levels of Fire Prevention Specialist Certification:

1. Fire Prevention Specialist I

- a. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty-five dollar (\$25.00) application processing fee.
- b. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

2. Fire Prevention Specialist II

- a. Applicants must meet requirements as follows:
 - 1. All requirements for Fire Prevention Specialist I
 - 2. Completion of all required hours/objectives for SFFMA Advanced Firefighter level
- b. Applicants must hold the following SFFMA certification:
 - 1. Basic Firefighter
- c. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, accompanied by the twenty-five dollar (\$25.00) application processing fee and sent to the Austin office.
- d. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

3. Training Requirements

SECTION	SUBJECT	HOURS FOR PREV SPEC I	HOURS FOR PREV SPEC II
1	Oral and Written Communication	8	
2	Legal Aspects	8	
3	Fire and Hose Streams		4
4	Ventilation		2
5	Fire Science	6	10
6	Flammable and Combustible Liquid	4	20
7	Compressed and Liquefied Gas	3	13
8	Explosives, Including Fireworks	4	4
9	Hazardous Materials	3	13
10	Portable Fire Extinguishers		8
11	Fire Protection Systems	3	7
12	Water Supplies		4
13	Fire Alarm Systems and Devices	4	4
14	Heating and Cooking Equipment		2
15	Industrial Ovens and Furnaces		2
16	Principles of Electricity	1	3
17	General Fire Safety	28	26
18	Inspection and Code Enforcement	8	16
19	Plans Review	4	4
20	SFFMA Rules and Regulations	1	
	TOTAL	85	142

4. Credit for SFFMA Firefighter Certification

The applicant may utilize hours obtained in the Firefighter curriculum, documented through progress reports or certifications, for credit towards Fire Prevention Specialist certification.

SECTION	SUBJECT	BASIC	INTER	ADV	TOTAL
6	Fire Streams	4			4
8	Ventilation Practices	2			2
11	Inspection Practices	4	8	12	24
12	Water Supplies	2	2		4
13	Fire Protection System	2	6	2	10
15	Fire Behavior (Fire Science)	8	2	6	16
16	Fire Alarms & Communications	4	2	2	8
26	Hazardous Materials	8	8		16
29	Portable Extinguisher	2	2	4	8
30	Building Construction			12	12
	TOTAL	36	30	38	104

5. Curriculum for Fire Prevention Specialist

SECTION 1 ORAL AND WRITTEN COMMUNICATIONS - 8 HOURS

1-01 Trainee shall demonstrate the ability to communicate both orally and in writing.

1-01.01 Trainee shall demonstrate an ability to clearly express himself/herself orally. Trainee shall demonstrate an ability to clearly express himself/herself in writing.

1-01.02 Trainee shall demonstrate through tests, or interview, or both, the ability to interact with the public, under conditions of code enforcement or fire prevention duties, with tact, discretion, and without loss of authority.

SECTION 2 LEGAL ASPECTS - 8 HOURS

2-01 Trainee shall identify legally established responsibilities and empowerment related to the performance of the inspector's duties.

2-01.01 Trainee shall demonstrate established procedures for modification of code requirements.

2-01.02 Trainee shall identify established appeal procedures and judicial review process for the jurisdiction in which the inspector is employed.

2-01.03 Trainee shall identify agencies that may be referred to for assistance in correcting hazards.

2-01.04 Trainee shall identify other jurisdictional authorities having requirements, or conduct inspections involving life safety or fire protection.

2-01.05 Trainee shall identify procedures for testifying at legal proceedings, given the findings of an inspection, a plan review, or a complaint and consultation with legal counsel, so that all information is presented accurately and the inspector's demeanor is appropriate to the proceedings.

2-02 Trainee shall identify the organization of the fire department or the entity for which duties will be performed.

2-02.01 Trainee shall identify the applicable organizational rules and regulation

2-02.02 Government Code 417.008: Inspection authority of the State Fire Marshal Office

2-02.03 Health and Safety Code 753: Storage and handling of flammable liquids at retail service stations

2-02.04 Health and Safety Code 792: Smoke detectors in hotels, motels or other overnight accommodations

2-02.05 Insurance Code 5.43-1: Regulation of the fire extinguisher industry

2-02.06 Insurance Code 5.43-2: Regulation of the fire alarm industry

2-02.07 Insurance Code 5.43-3: Regulation of the fire sprinkler industry

2-02.08 Insurance Code 5.43-4: Regulation of the fireworks industry and the sale of fireworks at retail

SECTION 3 FIRE HOSE AND FIRE STREAMS - 4 HOURS

3-01 Trainee shall identify the principles of fire hose, appliances, and hydrants.

3-01.01 Trainee shall identify the sizes, types, amounts, and use of hose carried on a pumper, according to NFPA 1901: Pumper Fire Apparatus, as amended.

3-01.02 Trainee shall identify the use of nozzles, hose adapters, and hose appliances.

3-01.03 Trainee shall identify procedures for inspection and maintenance of fire hose, couplings, and nozzles.

3-01.04 Trainee shall demonstrate the procedures for connecting a fire hose to a hydrant, and fully opening and closing the hydrant.

A. Trainee shall define water hammer and the methods for its prevention.

SECTION 4 VENTILATION - 2 HOURS

4-01 Trainee shall identify the principles and effects of ventilation.

4-01.01 Trainee shall identify the advantages of ventilation.

4-01.02 Trainee shall identify the disadvantages of ventilation.

4-01.03 Trainee shall identify the effects of ventilation.

4-01.04 Trainee shall define the term back draft explosion.

4-01.05 Trainee shall identify the term mushrooming.

4-01.06 Trainee shall define chimney effect.

4-01.07 Trainee shall define the term flashover.

SECTION 5 FIRE SCIENCE - 16 HOURS

5-01 Trainee shall define the process of combustion.

5-01.01 Trainee shall identify the four products of combustion.

5-01.02 Trainee shall define the following terms:

A. Flash point

E. Boiling Point

B. Ignition temperature

F. Endothermic & exothermic heat reaction

C. Fire point

G. Oxidation

D. Flammable or explosive limits

H. Pyrolysis

5-01.03 Trainee shall define describe thermal balance and imbalance

5-02 Trainee shall define "Fire Theory."

5-02.01 Trainee shall define "Fire Triangle."

5-02.02 Trainee shall define "Fire Tetrahedron."

5-03 Trainee shall identify the four (4) sources of heat energy.

5-03.01 Trainee shall identify the various types of chemical heat energy.

5-03.02 Trainee shall identify the various types of electrical heat energy.

5-03.03 Trainee shall identify the various types of mechanical heat energy.

5-03.04 Trainee shall identify the various types of nuclear heat energy.

5-04 Trainee shall identify the stages of fire and describe the appropriate action to be taken for extinguishment.

5-04.01 Trainee shall identify and describe the following conditions:

A. Incipient phase of a fire

B. Roll over

C. Steady state, free burning, or flame spread phase of a fire

D. Back draft

5-04.02 Trainee shall identify and describe the free burning phase of a fire.

5-04.03 Trainee shall identify and describe the smoldering phase of a fire.

5-04.04 Trainee shall identify and describe flame spread.

- 5-04.05 Trainee shall identify and describe flashover.
- 5-04.06 Trainee shall identify and describe the steady state.
- 5-05 Trainee shall define the three (3) methods of heat transfer.
 - 5-05.01 Conduction
 - 5-05.02 Convection
 - 5-05.03 Radiation
- 5-06 Trainee shall identify the three (3) physical states of fuel
 - 5-06.01 Trainee shall identify three (3) types of solid fuel.
 - 5-06.02 Trainee shall identify three (3) types of liquid fuel.
 - 5-06.03 Trainee shall identify three (3) types of gaseous fuel.
- 5-07 Trainee shall identify the chemical and physical properties of fuels.
 - 5-07.01 Trainee shall define specific gravity.
 - 5-07.02 Trainee shall define vapor density.
 - 5-07.03 Trainee shall define the theory of fuel to mass ratio as it relates to the combustion process.
 - 5-07.04 Trainee shall define the diffusion flame process.
- 5-08 Trainee shall identify chemical by-products of combustion.
 - 5-08.01 Trainee shall define fire gas.
 - 5-08.02 Trainee shall identify fire gases and their characteristics.
- 5-09 Trainee shall define the units of heat measurement.
 - 5-09.01 British Thermal Unit (BTU)
 - 5-09.02 Fahrenheit (F°)
 - 5-09.03 Celsius (C°)
 - 5-09.04 Calorie (C)
- 5-10 Trainee shall define the flame extinguishment theory.
 - 5-10.01 Trainee shall describe extinguishment by temperature reduction.
 - 5-10.02 Trainee shall describe extinguishment by fuel removal
 - 5-10.03 Trainee shall describe extinguishment oxygen dilution
 - 5-10.04 Trainee shall describe extinguishment by inhibiting chemical reaction.
- 5-11 Trainee shall identify the characteristic of water as it relates to its fire extinguishing potential
 - 5-11.01 Trainee shall identify the physical characteristics of water.
 - 5-11.02 Trainee shall define the Law of Specific Heat.
 - 5-11.03 Trainee shall define the Law of Latent Heat.
 - 5-11.04 Trainee shall identify the advantages and disadvantages of water as an extinguishing agent.

SECTION 6 FLAMMABLE AND COMBUSTIBLE LIQUID - 24 HOURS

- 6-01 Trainee shall define the properties of flammable and combustible liquids.
 - 6-01.01 Trainee shall identify the basic effects of temperature and pressure on flammable and combustible liquids, flammable and explosive limits, specific gravity, and boiling point.
 - 6-01.02 Trainee shall define flammable and explosive limits.
 - 6-01.03 Trainee shall define specific gravity.
 - 6-01.04 Trainee shall define boiling point.
 - 6-01.05 Trainee shall identify and define the classes of flammable and combustible liquids as defined by NFPA 30: Flammable and Combustible Liquids Code.
 - A. Class IA
 - B. Class IB
 - C. Class IC
 - D. Class II
 - E. Class IIIA
 - F. Class IIIB
- 6-02 Trainee shall identify the fire hazards associated with the storage, handling, and use of flammable and combustible liquids.
 - 6-02.01 Trainee shall identify regulations and hazards attendant to the transfer of flammable and combustible liquids.
 - 6-02.02 Trainee shall identify regulations and fire hazards attendant to finishing processes that involve flammable and combustible liquids.
 - 6-02.03 Trainee shall identify what conditions constitute possible sources of ignition during storage, handling, and use of flammable and combustible liquids.
 - 6-02.04 Trainee shall identify conditions that might be conducive to creating explosive atmospheres in the storage, handling, and use of flammable liquids.
 - 6-02.05 Trainee shall identify the regulations or code provisions related to the storage, handling, and use of flammable and combustible liquids.
 - 6-02.06 Trainee shall identify the procedures for investigating flammable or combustible liquid leaks or suspected leaks.

- 6-03** Trainee shall identify regulations and acceptable installations practices relative to underground storage tanks for flammable and combustible liquids.
 - 6-03.01 Trainee shall identify venting procedures and devices installed on underground storage tanks for flammable and combustible liquids.
 - 6-03.02 Trainee shall identify normal requirements and acceptable installation practices relative to piping and valves attendant to underground storage tanks for flammable and combustible liquids.
 - 6-03.03 Trainee shall identify testing methods and requirements for underground storage tanks and piping as specified in NFPA 30: Flammable and Combustible Liquids Code or other applicable sources.
- 6-04** Trainee shall identify the regulations and acceptable installations practices relative to inside storage of flammable and combustible liquids.
 - 6-04.01 Trainee shall identify how to determine whether normal and emergency venting devices are being properly installed.
 - 6-04.02 Trainee shall identify drainage, diking systems, or both, that may be required for above ground storage of flammable and combustible liquids.
 - 6-04.03 Trainee shall identify requirements for an installation of piping and valves attendant to above ground storage tanks for flammable and combustible liquids.
 - 6-04.04 Trainee shall identify testing methods and requirements for above ground storage tanks and piping as specified in NFPA 30: Flammable and Combustible Liquids Code or other applicable sources.
- 6-05** Trainee shall identify the regulations and acceptable installations practices relative to inside storage of flammable and combustible liquids.
 - 6-05.01 Trainee shall identify how to determine if normal and emergency venting devices are being properly maintained.
 - 6-05.02 Trainee shall identify drainage or containment systems that may be required for the inside storage of flammable and combustible liquids.
 - 6-05.03 Trainee shall identify requirements and acceptable installation practices relative to piping and valves attendant to the inside storage of flammable and combustible liquids.
- 6-06** Trainee shall identify the regulations or code requirements relative to the outside container storage of flammable and combustible liquids.
 - 6-06.01 Trainee shall identify acceptable flammable and combustible liquid containers for outside storage.
 - 6-06.02 Trainee shall identify acceptable locations and storage parameters such as aisle spacing, stacking, storing of containers in vertical or horizontal positions, etc., relative to the outside storage of flammable and combustible liquids container venting devices and venting practices.
- 6-07** Trainee shall identify the regulations, including quantity limitations, that may exist for different occupancies relative to the inside storage of flammable and combustible liquids.
 - 6-07.01 Trainee shall identify the acceptable flammable and combustible liquid containers for inside storage.
 - 6-07.02 Trainee shall identify storage parameters such as aisle spacing, stacking, storage containers in vertical or horizontal positions, etc., relative to the inside storage of flammable and combustible liquids.
 - 6-07.03 Trainee shall identify normal and emergency venting devices or procedures acceptable for the inside storage of flammable and combustible liquids.
- 6-08** Trainee shall identify techniques for flammable and combustible liquids fire extinguishment.
 - 6-08.01 Trainee shall identify portable fire extinguisher installation requirements for areas involving flammable and combustible liquids storage, handling, and use.
- 6-09** Trainee shall identify regulations relative to the transportation of flammable and combustible liquids within the jurisdiction.
 - 6-09.01 Trainee shall identify which agencies regulate the transportation of flammable and combustible liquids within the jurisdiction.
 - 6-09.02 Trainee shall identify which agencies offer assistance in handling flammable and combustible liquids emergencies within the jurisdiction.
 - 6-09.03 Trainee shall identify regulations relative to flammable and combustible liquids within the local jurisdiction.
 - 6-09.04 Trainee shall identify the regulatory labeling and placarding systems use for flammable and combustible liquids identification.

SECTION 7 COMPRESSED AND LIQUEFIED GASES - 16 HOURS

- 7-01 Trainee shall identify the general properties of compressed and liquefied gases.
- 7-02 Trainee shall identify the fire hazards associated with the typical storage, handling, and use of compressed and liquefied gases.
- 7-03 Trainee shall identify the regulations relative to the transportation of compressed and liquefied gases.
- 7-04 Trainee shall identify fire extinguishment practices and procedures for compressed and liquefied gases emergencies.

SECTION 8 EXPLOSIVES, INCLUDING FIREWORKS - 8 HOURS

- 8-01 Trainee shall identify the general properties of explosives.
- 8-02 Trainee shall identify the regulations relative to the transportation of explosives, including fireworks, within the local AHJ.
- 8-03 Trainee shall identify regulatory labeling and placarding systems relative to explosives, including fireworks.
- 8-04 Trainee shall identify code requirements and regulations for the storage of explosives including fireworks.

SECTION 9 HAZARDOUS MATERIALS - 16 HOURS

- 9-01 Trainee shall identify the characteristics of various hazardous materials and code requirements and regulations for the storage, handling, and use of various types and quantities of hazardous materials.
- 9-02 Trainee shall identify combustible metal characteristics.
- 9-03 Trainee shall identify combustible dust characteristics.

SECTION 10 PORTABLE FIRE EXTINGUISHERS - 8 HOURS

- 10-01 Trainee shall be able to describe the purpose of the NFPA standard applicable to portable fire extinguishers.
- 10-02 Trainee shall identify the classification of types of fires as they relate to the use of portable fire extinguishers and the materials involved in each class of fire.
- 10-03 Trainee shall define and describe the Underwriter's Laboratories, Inc. portable fire extinguisher rating system.
- 10-04 Trainee shall identify the appropriate fire extinguisher for each class of fire.
- 10-05 Trainee shall identify the extinguishing effects needed for each class of fire.
- 10-06 Trainee shall describe and demonstrate the operation of fire extinguishers.

SECTION 11 FIRE PROTECTION SYSTEMS - 10 HOURS

- 11-01 Trainee shall be able to describe the purpose of the NFPA standard applicable to fire protection systems.
- 11-02 Trainee shall identify the features and characteristics of automatic sprinkler systems.
- 11-03 Trainee shall identify various automatic sprinkler heads.
- 11-04 Trainee shall identify the types, components, and operation of automatic sprinkler systems.
- 11-05 Trainee shall identify the types, components, and operation of standpipe systems.
- 11-06 Trainee shall identify various types of special extinguishing systems.
- 11-07 Trainee shall identify system initiating devices.

SECTION 12 WATER SUPPLIES - 4 HOURS

- 12-01 Trainee shall identify the various types of pressure in a water system.
- 12-02 Trainee shall identify water sources available for fire fighting.
- 12-03 Trainee shall identify typical water supply systems and their components.
- 12-04 Trainee shall identify common types of fire hydrants.
- 12-05 Trainee shall identify conditions interfering with the normal operations of fire hydrants.
- 12-06 Trainee shall identify the following types of water valves associated with water supply systems.
- 12-07 Trainee shall identify the different suggested minimum water main sizes and approximate discharge capacities of each.
- 12-08 Trainee shall determine available water supply.

SECTION 13 FIRE ALARM SYSTEMS AND DEVICES - 8 HOURS

- 13-01 Trainee shall identify the characteristics of fire alarms systems and devices.
- 13-02 Trainee shall identify the procedures for emergency and non-emergency telephone calls.

SECTION 14 HEATING AND COOKING EQUIPMENT - 2 HOURS

- 14-01 Trainee shall identify and describe the fire hazards related to the various types of heating and cooking equipment.

SECTION 15 INDUSTRIAL OVENS AND FURNACES - 2 HOURS

- 15-01 Trainee shall identify fire hazards of industrial ovens and furnace systems.

SECTION 16 PRINCIPLES OF ELECTRICITY - 4 HOURS

- 16-01 Trainee shall identify the principles of electricity and associated hazards.

SECTION 17 GENERAL FIRE SAFETY - 54 HOURS

- 17-01 Trainee shall identify code requirements, regulations, and fire hazards.
- 17-02 Trainee shall identify general fire safety code requirements and regulations.
- 17-03 Trainee shall identify occupant loads and means of egress.
- 17-04 Trainee shall identify characteristics of interior finishes.
- 17-05 Trainee shall identify fire safety features related to building construction.
- 17-06 Trainee shall identify the types of and installation requirements for building service equipment that affect fire protection and life safety.
- 17-07 Trainee shall identify hazards of decorations, decorative materials, and furnishings.
- 17-08 Trainee shall identify the requirements and purpose of emergency evacuation plans.
- 17-09 Trainee shall identify procedures and elements for the inspection of portable fire extinguishers.

SECTION 18 INSPECTION AND CODE ENFORCEMENT PROCEDURES - 24 HOURS

- 18-01 Trainee shall conduct inspections of various occupancies.
- 18-02 Trainee shall identify code enforcement procedures.
- 18-03 Trainee shall demonstrate proper report preparation.
- 18-04 Trainee shall identify supplemental equipment for code enforcement.
- 18-05 Trainee shall identify state agencies, licensing, and support.

SECTION 19 PLANS REVIEW - 8 HOURS

- 19-01 Trainee shall identify views of architectural drawings.
- 19-02 Trainee shall identify typical components of a plans review system.
- 19-03 Trainee shall review plans for meeting the intent of applicable local codes and standards.
- 19-04 Trainee shall review mechanical plans for meeting the intent of applicable local codes and standards.
- 19-05 Trainee shall review electrical plans for meeting the intent of applicable local codes and standards.
- 19-06 Trainee shall review plans for fire protection features.

SECTION 20 RULES AND REGULATIONS - 1 HOUR

- 20-01 Trainee shall become familiar with the procedures related to certification of Fire Prevention Specialist I & II.

TOTAL HOURS 227

C. Fire/Arson Investigator

1. The Board requires that applicants for Fire Investigator meet the current minimum standards as set by the TCFP for Fire Investigation Certification.
2. Applicants must hold, as a minimum, Accredited Basic Volunteer Firefighter certification from the SFFMA.
3. Applicants for Arson Investigator must also hold a current Basic Peace Officer license from the Texas Commission on Law Enforcement Officer Standards and Education (TCLEOSE) or documentation that the individual is a federal law enforcement officer.
4. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty-five dollar (\$25.00) application processing fee.
5. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

VI. MINIMUM STANDARDS FOR DRIVER/OPERATOR CERTIFICATION

The duties of an Emergency Vehicle Operator are extremely dangerous, as well as mentally and physically exhausting, when responding to, returning from, or operating at an emergency scene. In order to render proper service to his/her department, and in keeping with this concept, an Emergency Vehicle Operator must be physically sound and free from any defect which may adversely affect his/her performance of duty. An Emergency Vehicle Operator's personal safety and the lives of others will be endangered without appropriate training and driving skills. If these skills and training are not applied at regular intervals, competency decreases, hence the need for continual driver re-certification. Driver re-certification is a vital element in maintaining a valid and professional emergency vehicle driver program.

A. Reference Materials

The jurisdictional entity in which the Driver/Operator Personnel serves must have access to the following training manuals:

NFPA

NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications

NFPA 1451: Standard for a Fire Service Vehicle Operations Training Program

NFPA 1500: Standard on Fire Department Occupational Safety and Health Program

B. Applicants must complete one of the following:

1. SFFMA Driver/Operator Curriculum
2. TCFP Driver/Operator Curriculum

C. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty-five dollar (\$25.00) application processing fee.

D. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

E. Curriculum for Driver/Operator

SECTION 1 PUMP OPERATIONS/HYDRAULICS - 24 HOURS

- 1-01** Trainee shall identify the operating principles of single stage and multi-stage centrifugal fire pumps as follows:
- 1-01.01 Trainee shall list the percentages of rated capacity, rated pressures, and capacity in gallons per minute at the rated pressures of a fire department pump.
 - 1-01.02 Trainee, given a pump model/diagram, shall identify the main components indicating pump capacity, number of discharges and number of suction inlets.
 - 1-01.03 Trainee shall explain the difference between series/parallel operations of centrifugal fire pumps.
 - 1-01.04 Trainee, given the proper information, shall list three (3) advantages of a centrifugal fire pump as compared to other types of fire pumps (i.e. positive displacement, rotary vane).
- 1-02** Trainee shall demonstrate the use of mathematical calculations as required to solve fire department pumper hydraulic problems as follows:
- 1-02.01 Trainee shall list the mathematical orders of operation concerning addition, subtraction, multiplication, and division.
 - 1-02.02 Trainee shall solve mathematical problems finding the square root, and decimal/fraction conversions.
 - 1-02.03 Trainee shall list formulas used in finding GPM rates, friction loss of fire hose, engine pressure for hose layouts of nozzles, standpipe/sprinkler, master streams, and elevation operations.
 - 1-02.04 Trainee, given the proper information, shall list conversion factors of fire hose that are smaller/larger than 2½ inches.
 - 1-02.05 Trainee shall calculate the correct engine pressures for a specific situation.
- 1-03** Trainee shall set up and perform pumping operations as follows:
- 1-03.01 Trainee shall list conditions that may result in pump damage.
 - 1-03.02 Trainee, given a pump model or diagram, shall demonstrate the proper test/check inspection routines required to assure operational readiness.
 - 1-03.03 Trainee, given a pump panel or diagram, shall identify all gauges and valves, and demonstrate their usage.
 - 1-03.04 Trainee, given a pump panel or diagram, shall identify the proper usage of valves and gauges to obtain a flow of water from the following:
 - a. a 1" (booster line) discharge outlet;
 - b. a 1½" or 1¾" discharge outlet;
 - c. a 2½" discharge outlet; and
 - d. master stream discharge outlet (if applicable)
 - 1-03.05 Trainee, given a pump panel or diagram, shall demonstrate the proper technique of hooking up or connecting intake hoses to the pumps.

- 1-03.06 Trainee, given an engine apparatus or diagram, shall demonstrate/list the engagement procedure of the power take-off (PTO) systems for the pumping apparatus.
- 1-03.07 Trainee, given a pump panel or diagram, shall demonstrate the proper procedure of valve manipulation to produce water from:
 - a. a positive water source
 - b. a static water source by drafting
 - c. booster tank
- 1-04 Trainee shall identify the type, design, operation, nozzle pressure and flow in GPM of various types of nozzles.
- 1-05 Trainee shall list the different types of fire streams.
- 1-06 Trainee, given a 2½" straight stream nozzle, shall demonstrate the proper opening and closing techniques and line movement procedures.
- 1-07 Trainee shall calculate nozzle reaction for various nozzle pressures.
- 1-08 Trainee, given the proper information, shall list advantages and disadvantages of various nozzles:
 - 1-08.01 straight stream
 - 1-08.02 fog
 - 1-08.03 master stream
- 1-09 Trainee shall define water hammer and list ways of preventing water hammer.
- 1-10 Trainee shall calculate the water flow rate needed to control fire in a room that is 20'x20'x8'.
- 1-11 Trainee, given a diagram of various nozzles, shall list major parts and trace flow routes through each.
- 1-12 Trainee shall list factors that influence fire streams.
- 1-13 Trainee shall list the proper procedures for inspection and maintenance of fire fighting nozzles.
- 1-14 Trainee shall demonstrate the operations of the pumper pressure relief system and/or pressure control valve as follows:
 - 1-14.01 Trainee, given a pump panel, shall identify a pressure relief system.
 - 1-14.02 Trainee shall list the reasons a pressure relief system is used.
 - 1-14.03 Trainee shall list the different types of pressure relief systems used in the fire service.
 - 1-14.04 Trainee shall list three (3) reasons of how excessive pressure develops in the fire hose.
- 1-15 Trainee shall identify terms relating to the principles of fire service hydraulics as follows:
 - 1-15.01 Trainee shall list the forms water takes and advantages water exhibits as an extinguishing agent.
 - 1-15.02 Trainee shall list six (6) types of pressure which affect the properties of water in fire service hydraulics.
 - 1-15.03 Trainee, given a pump diagram and flow chart, shall explain the theory of drafting and principle component uses in a drafting operation.
 - 1-15.04 Trainee shall calculate the available water supply from a fire hydrant.
 - 1-15.05 Trainee shall demonstrate assembly and connection of the equipment necessary for drafting from a static water supply source and demonstrate drafting operations.

SECTION 2 APPARATUS FAMILIARIZATION - 2 HOURS

- 2-01 Trainee shall be able to identify various types of automotive fire apparatus.
- 2-02 Trainee shall identify various types of fire apparatus pumps, pumps components, and their function.
- 2-03 Trainee shall identify various types of aerial apparatus components and their function.
- 2-04 Trainee shall identify various types of tools and appliances, and their location on the fire department apparatus.

SECTION 3 EMERGENCY VEHICLE OPERATIONS - 6 HOURS

- 3-01 Trainee shall define and demonstrate the departmental policy and prescribed procedures for emergency vehicle response.
- 3-02 Trainee shall define and explain the authority and responsibility of the emergency vehicle operator.
- 3-03 Trainee shall identify and explain state and local laws governing emergency vehicle response.
- 3-04 Trainee shall identify the prescribed methods used in driver selection, training, testing and licensing of emergency vehicle operators.
- 3-05 **Trainee shall have a thorough knowledge of applicable federal, state and local regulations governing the operation of fire service vehicles.** NFPA 1451 4-01.1
- 3-06 Trainee shall identify the water distribution system, and other alternate water sources in the area of responsibility.
- 3-07 Trainee shall define, explain, and demonstrate where applicable, the use of a rural dry fire hydrant system and static water supply source.
- 3-08 Trainee shall define a tanker shuttle.
- 3-09 Trainee shall identify the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large diameter hose, or a tanker shuttle.

SECTION 4 DRIVING APPLICATIONS - 4 HOURS

- 4-01 Trainee shall identify the acquired abilities to operate a fire department vehicle while responding to and returning from an emergency.
- 4-02 Trainee shall identify administrative rules and regulations governing the performance of the fire vehicle while responding to and returning from emergencies.
- 4-03 Trainee shall identify the proper driver's licenses for the operation of fire department vehicles.
- 4-04 Trainee shall identify the legal terms:
- | | |
|------------------------|--------------------|
| 4-04.01 true emergency | 4-04.03 negligence |
| 4-04.02 due regard | |
- 4-05 Trainee shall identify the national standards addressing the fire department vehicle driver:
- | | |
|-------------------|-------------------|
| 4-05.01 NFPA 1002 | 4-05.03 NFPA 1451 |
| 4-05.02 NFPA 1500 | |
- 4-06 Trainee shall identify the affects that physical forces have on a fire department vehicle:
- | | |
|------------------|------------------------------|
| 4-06.01 friction | 4-06.03 momentum and inertia |
| 4-06.02 velocity | 4-06.04 centrifugal force |
- 4-07 Trainee shall identify the areas where gross axle weight ratings and gross vehicle weight may be found on a fire department vehicle.
- 4-08 Trainee shall identify the types of primary and secondary braking systems on a fire department vehicle:
- | | |
|----------------------------------|---|
| 4-08.01 air | 4-08.04 automatic transmission retarder |
| 4-08.02 hydraulic | 4-08.05 driveline retarder |
| 4-08.03 antilock braking systems | |
- 4-09 Trainee shall identify baffling systems and how they affect the physical forces of a fire department vehicle.
- 4-10 Trainee shall identify an inspection and maintenance program of a fire department vehicle.
- 4-11 Trainee shall identify major components of a fire department vehicle:
- | | |
|-----------------|---------------------------------|
| 4-11.01 chassis | 4-11.03 primary functions/tasks |
| 4-11.02 body | 4-11.04 auxiliary systems |
- 4-12 Trainee shall identify pre and post inspections.
- 4-13 Trainee shall identify the checklist of a fire department vehicle.
- 4-14 Trainee shall identify components of a fire department vehicle checklist:
- | | |
|----------------------------------|--------------------------------|
| 4-14.01 vehicle overview | 4-14.05 walk-round inspections |
| 4-14.02 engine compartment | 4-14.06 pump panel components |
| 4-14.03 cab area | 4-14.07 brake system(s) |
| 4-14.04 lights and audio devices | |
- 4-15 Trainee shall identify automotive gauges and controls and demonstrate the operation of automotive gauges and proper operation limits.
- 4-16 Trainee shall demonstrate the operation of all systems and equipment on a fire department vehicle.
- 4-17 Trainee shall identify types of maintenance programs:
- | | |
|------------------|----------------|
| 4-17.01 routine | 4-17.03 crisis |
| 4-17.02 schedule | |
- 4-18 Trainee shall identify the recording keeping process of a fire department vehicle.
- 4-19 Trainee shall identify safe road operation of a fire department vehicle:
- | | |
|----------------------------------|----------------------------|
| 4-19.01 defensive driving skills | 4-19.04 startup procedures |
| 4-19.02 route planning | 4-19.05 emergency driving |
| 4-19.03 driver readiness | |
- 4-20 Trainee shall identify and demonstrate:
- | | |
|--------------------------|-----------------------|
| 4-20.01 space management | 4-20.05 lane changing |
| 4-20.02 speed management | 4-20.06 turning |
| 4-20.03 basic maneuvers | 4-20.07 passing |
| 4-20.04 backing up | |
- 4-21 Trainee shall identify operating a fire department vehicle under adverse conditions:
- | | |
|-------------------------------|--|
| 4-21.01 traction implications | |
| 4-21.02 vision implications | |
| 4-21.03 crash avoidance | |
- 4-22 Trainee shall identify placement of fire department vehicles at emergency incidents, on and off roadways.
- 4-23 Trainee shall identify hand signals of a spotter while backing a fire department vehicle.

SECTION 5 DRIVING PRACTICES – 4 HOURS

- 5-01** Trainee shall operate a fire department vehicle incorporating various maneuvers:
 - 5-01.01 four left and four right turns
 - 5-01.02 a straight section of roadway one mile long or more
 - 5-01.03 one through intersection and two intersections where a stop has to be made
 - 5-01.04 one railroad crossing
 - 5-01.05 one curve
 - 5-01.06 a section of limited-access highway that includes a conventional ramp entrance and exit and a section of road long enough for two lane changes
 - 5-01.07 one underpass or low clearance or bridge; as applicable to the local jurisdiction
- 5-02** Trainee shall demonstrate vehicle dimension knowledge and turning characteristics while using mirrors for backing.
- 5-03** Trainee shall demonstrate backing from a roadway into restricted space, requiring 90-degree right and left hand turns from the roadway, so that the vehicle is parked within the restricted areas without having to stop and pull forward and without striking obstructions.
- 5-04** Trainee shall demonstrate maneuvering a vehicle around an obstruction.
- 5-05** Trainee shall maneuver a vehicle around obstructions while moving forward and in reverse, so that the vehicle is maneuvered through the obstructions without stopping to change the direction of travel and without striking the obstruction.
- 5-06** Trainee shall demonstrate backing a vehicle within a confined space.
- 5-07** Trainee shall turn a vehicle 180 degrees within a confined space in an area in which the vehicle cannot perform a U-turn without stopping and backing up, so that the vehicle is turned 180 degrees without striking obstructions within the given space.
- 5-08** Trainee shall maneuver a vehicle in areas with restricted horizontal and vertical clearances.

VII. MINIMUM STANDARDS FOR FIRE OFFICER

A. Reference Materials

The jurisdictional entity in which the Fire Officer Personnel serves must have access to the following training manuals:

Jones & Bartlett

Fire Officer Principles and Practice (1st ed.)

NFPA

NFPA 921: Guide for Fire and Explosion Investigations

NFPA 1021: Standard for Fire Officer Professional Qualifications (2003 ed.)

B. The Certification Program offers two levels of Fire Officer Certification:

1. Fire Officer I

- a. Applicants must hold the following SFFMA certifications:
 - i. Accredited Advanced Firefighter
 - ii. Instructor I
- b. Applicants must be a first-line supervisory officer, and must meet all the job performance and certification requirements of Fire Officer I as defined in NFPA 1021, as follows:
 - i. Uses human resources to accomplish assignments in accordance with safety plans in an efficient manner and evaluates member task performance and supervises personnel during emergency and non-emergency work periods
 - ii. Deals with inquiries from the community and projects the role of the department to the public and delivers safety, injury, and fire prevention education programs
 - iii. Performs general administrative functions and implements departmental policies and procedures at the unit/company level
 - iv. Performs a fire investigation to determine preliminary cause, secures the incident scene, and preserves evidence
 - v. Supervises emergency operations, conducts pre-incident planning, and deploys assigned resources in accordance with the local emergency plan
 - vi. Integrates safety plans, policies, and procedures into the daily activities as well as on the emergency scene, including the donning of appropriate levels of personal protective equipment to ensure a work environment, in accordance with health and safety plans, for all assigned members
- c. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty-five dollar (\$25.00) application processing fee.
- d. Upon review, the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

2. Fire Officer II

- a. Applicants must hold the following SFFMA certifications:
 - i. Accredited Advanced Firefighter
 - ii. Instructor I
 - iii. Fire Officer I
- b. Applicant must be a midlevel supervisor, and must meet all the job performance and certification requirements of Fire Officer II as defined in NFPA 1021, as follows:
 - i. Evaluates member job performance
 - ii. Prepares a project or divisional budget, news releases, and/or new policy or changes in existing policies
 - iii. Conducts inspections to identify hazards and addresses violations and conducts fire investigations to determine origin and preliminary causes
 - iv. Supervises multi-unit emergency operations, deploys assigned resources, and develops and conducts post-incident analysis
 - v. Reviews injury, accident, and health exposure reports, identifies unsafe work environments or behaviors, and takes approved action to prevent their reoccurrence
- c. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty-five dollar (\$25.00) application processing fee.

- d. Upon review, the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

D. Training Requirements

SECTION	SUBJECT	HOURS FOR OFFICER I	HOURS FOR OFFICER II
1	General	4	1
2	Human Resources Management	6	10
3	Community and Government Relations	6	
4	Administration	4	10
5	Inspection and Investigation	4	10
6	Emergency Service Delivery	10	8
7	Health and Safety	8	9
	Performance Skills *	18	12
	TOTAL RECOMMENDED HOURS	60	60

* The recommended hours for skills evaluation is based on 12 students. Actual hours needed depends on the number of students, the number of examiners, availability of equipment, and the student skill level

E. Curriculum Reference

1. This supplement is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives of the Fire Officer I & II curriculum in Jones & Bartlett's *Fire Officer Principles and Practice* (1st ed.). This supplement is **not** an all-inclusive list and does not in any way limit development and use of questions to test the objectives of the curriculum.

Fire Officer I Objective	Page Number
1-01	2-18, 22-36, 40-58, 62-74, 78-94, 122-136, 140-156, 160, 170, 244-262, 266-286, 290-312
1-02	266-286, 290-312
2-01	2-18, 62-74, 100-118, 160, 170, 194-210, 266-286, 290, 312, 316-336
2-02	2-18, 40-58, 62-74, 100-118, 160-170, 194, 210, 266-286
2-03	62-74, 100-118, 122-136
2-04	2-18, 40-58, 100-118, 140, 156, 194-210, 362-376
2-05	2-18, 40-58, 62-74, 78-94, 140-156, 194, 210, 266-286, 362-376
2-06	62-74, 160-170, 194-210, 362-376
3-01	174-190, 194, 210, 266-286
3-02	194-210
3-03	174-190
3-04	174-190
4-01	2-18, 40-58, 62-74, 194-210, 266-286
4-02	2-18, 40-58, 160-170, 266-286
4-03	244-262
5-01	214-240, 340-358
5-02	340-358
6-01	214-240, 290-312
6-02	100-118, 214, 240, 290-312, 316-336, 362-376
6-03	100-118, 266, 286, 290-312, 316-336
6-04	100-118, 214, 240, 290-312, 316-336
7-01	2-18, 100-118, 140-156, 290-312
7-02	100-118

Fire Officer II Objective	Page Number
1-01	2-18, 78-94, 290-312
2-01	2-18, 62-74, 78-94, 122-136, 140-156, 160, 170, 194-210, 266-286, 362-376
2-02	22-36, 140-156
4-01	2-18, 78-94, 194-210
4-02	244-262
4-03	244-262
4-04	174-190, 266-286
4-05	160-171, 266-286
5-01	2-18, 214-240, 340-358
5-02	214-240, 340-358
6-01	2-18, 100-118, 214-240, 290, 312, 316-336
6-02	100-118, 194, 210, 214-240, 290-312, 316, 336, 340-358

F. Curriculum for Fire Officer I

SECTION 1 GENERAL – 4 HOURS

- 1-01** Trainee shall have knowledge of the following
- 1-01.01 The organizational structure of the department
 - 1-01.02 Geographical configuration and characteristics of response districts
 - 1-01.03 Departmental operating procedures for administration, emergency operations, incident management systems, and safety
 - 1-01.04 Departmental budget process
 - 1-01.05 Information management and record keeping
 - 1-01.06 The fire prevention and building safety codes and ordinances applicable to the jurisdiction
 - 1-01.07 Current trends, technologies, and socioeconomic and political factors that impact the fire service
 - 1-01.08 Cultural diversity
 - 1-01.09 Methods used by supervisors to obtain cooperation within a group of subordinates
 - 1-01.10 The rights of management and members
 - 1-01.11 Agreements in force between the organization and members
 - 1-01.12 Generally accepted ethical practices, including a professional code of ethics
 - 1-01.13 Policies and procedures regarding the operation of the department as they involve supervisors and members
- 1-02** Trainee shall be able to:
- 1-02.01 Effectively communicate in writing utilizing technology provided by the AHJ
 - 1-02.02 Write reports, letters, and memos utilizing word processing and spreadsheet programs
 - 1-02.03 Operate in an information management system
 - 1-02.03 Effectively operate at all levels in the incident management system utilized by the AHJ

SECTION 2 HUMAN RESOURCE MANAGEMENT – 6 HOURS

- 2-01** Trainee shall utilize human resources to accomplish assignments in accordance with safety plans and in an efficient manner.
- 2-02** Trainee shall evaluate member performance and supervising personnel during emergency and non emergency work periods, according to the following job performance requirements.
- 2-02.01 Assign tasks or responsibilities to unit members
 - 2-02.02 Give an assignment at an emergency operation, so that the instructions are complete, clear, and concise; safety considerations are addressed; and the desired outcomes are conveyed.
- 2-03** Trainee shall have the knowledge required to be able to perform/apply the following:
- 2-03.01 Verbal communications during emergency situations utilizing the NIMS standards including but not limited to the following:
 - A. Command presence
 - B. Calm
 - C. Clear
 - D. Concise
 - E. Accurate
 - F. Clear text (no ten codes)
 - G. Standard resource typing
 - H. Standard terminology for facilities, equipment and resources
 - I. State the desired outcome
 - 2-03.02 Techniques used to make assignments under stressful situations
 - A. Standard operating procedures/guidelines
 - B. Maintain span of control
 - C. Safety considerations
 - D. Accountability
 - E. Develop an incident action plan
 - F. Establish tactical priorities considering, Life safety, Incident stabilization, Environmental conservation, and Property conservation
 - 2-03.03 Methods of confirming understanding
 - A. Feedback (repeat message)
 - B. Ask for any questions/clarifications
- 2-04** Trainee shall assign tasks or responsibilities to unit members, given an assignment under non emergency conditions at a station or other work location, so that the instructions are complete, clear, and concise; safety considerations are addressed; and the desired outcomes are conveyed. Firefighter shall have the knowledge to be able to perform/apply the following:
- 2-04.01 Verbal communications under non emergency situations
 - A. Calm
 - B. Clear
 - C. Concise
 - D. Accurate
 - E. State the desired outcome

- 2-04.02 Techniques used to make assignments under routine situations
 - A. Verbal
 - B. Written
- 2-04.03 Methods of confirming comprehension
 - A. Feedback (repeat message)
 - B. Ask for any questions/clarifications
- 2-05** Trainee shall be able to direct unit members during a training evolution, given a company training evolution and training policies and procedures, so that the evolution is performed in accordance with safety plans, efficiently, and as directed. Trainee shall have the knowledge to be able to perform/apply the following:
 - 2-05.01 Verbal communication techniques to facilitate learning
 - A. Communication model consisting of:
 - 1. Sender
 - 2. Message
 - 3. Instructional medium
 - 4. Receiver
 - 5. Feedback
 - 6. Environment
 - B. Factors in effective delivery:
 - 1. Voice inflection
 - 2. Eye contact
 - 3. Common/appropriate terminology
 - 4. Appropriate terminology
 - 5. Body language
 - 6. Facial expressions
 - 7. Tone of voice
 - 8. Appropriate appearance
 - C. Basic rules of effective spoken communication:
 - 1. Be adaptive to audience
 - 2. Have a specific purpose
 - 3. Be clear and concise
 - 4. Be focused
- 2-06** Trainee shall recommend action for member-related problems, given a member with a situation requiring assistance and the member assistance policies and procedures, so that the situation is identified and the actions taken are within the established policies and procedures. Trainee shall have the knowledge to be able to recognize the following:
 - 2-06.01 The signs and symptoms of member-related problems
 - A. Substance abuse
 - B. Health problems
 - 1. Mental
 - 2. Physical
 - C. Financial problems
 - D. Personal/family problems
 - E. Behavioral problems
 - 2-06.02 Causes of stress in emergency services personnel
 - A. Environmental
 - 1. Weather
 - 2. Workplace conditions/expectations
 - 3. Emergency scenes
 - B. Physiological
 - 1. Interrupted meals/sleep
 - 2. Shift work
 - 3. Constant heightened sense of awareness
 - C. Psychological
 - 1. Multiple casualty incidents
 - 2. Gruesome injuries
 - 3. Co-worker injuries or deaths
 - 4. Injuries or deaths involving children
 - D. Cultural
 - 1. Age
 - 2. Gender
 - 3. Ethnicity
 - 4. Religion
 - E. Personal
 - 1. Financial
 - 2. Issues outside of work
 - 2-06.03 Adverse effects of stress on the performance of emergency service personnel
 - A. Failure to meet job performance requirements
 - B. Injuries/illnesses
 - C. Death
- 2-07** Trainee shall apply human resource policies and procedures, given an administrative situation requiring action, so that policies and procedures are followed.
- 2-08** Trainee should be able to deal with administrative procedures that might include transfers, promotions, compensation/member benefits, sick leave, vacation, requests for pay or benefits while acting in a temporary position, change in member benefits, commendations, disciplinary actions, and grievances.

- 2-09** Trainee shall have the knowledgeable of:
- 2-09.01 Human resource policies and procedures
- A. Federal laws
 - B. State laws
 - C. Local AHJ (e.g. Employee Assistance Program)
 - D. Departmental (e.g. Wellness/fitness program)
- 2-10** Trainee shall coordinate the completion of assigned tasks and projects by members, given a list of projects and tasks and the job requirements of subordinates, so that the assignments are prioritized, a plan for the completion of each assignment is developed, and members are assigned to specific tasks and supervised during the completion of the assignments.
- 2-11** Trainee shall be knowledgeable of:
- 2-11.01 Principles of supervision
- A. Delegate responsibility
 - B. Consistent management
 - C. Motivate
 - D. Communicate
 - E. Train
 - F. Decision making
 - G. Resource management
 - H. Time management
 - I. Coach/counsel
 - J. Discipline (positive and negative)
 - K. Accountability
 - L. Employee performance appraisals
 - M. Conflict resolution
 - N. Risk management
 - O. Leadership styles
 1. Autocratic
 2. Democratic
 3. Laissez-faire
- 2-11.02 Basic human resource management
- A. Managerial theories
 - B. Human resource planning
 - C. Employee relations
 - D. Staffing
 - E. Performance management
 - F. Human resource development
 - G. Compensation and benefits
 - H. Employee health, safety and security
 - I. Risk benefit analysis

SECTION 3 COMMUNITY AND GOVERNMENT RELATIONS – 6 HOURS

- 3-01** Trainee shall be able deal with inquiries of the community and projecting the role of the department to the public and delivering safety, injury, and fire prevention education programs. Initiate action on a community need, given policies and procedures, so that the need is addressed.
- 3-02** Trainee shall be knowledgeable of the following:
- 3-02.01 Community demographics and service organizations
- A. Community demographics and service organizations
 1. Statistical analysis
 - a. Age
 - b. Income
 - c. Ethnic
 - d. Sex
 - e. Educational level
 - f. Special needs
 2. Service organizations
 - a. Civic (e.g. Lions, Rotary)
 - b. Religious (e.g. Knights of Columbus, Salvation Army)
 - c. Volunteer (e.g. Red Cross, Community Emergency Response Team (CERT), Fire Corps)
 - B. Verbal and nonverbal communication
 1. Verbal communication
 - a. Voice inflection
 - b. Appropriate/common terminology
 - c. Tone of voice
 - d. Have a specific purpose
 - e. Be clear and concise
 - f. Be focused
 2. Nonverbal communication
 - a. Eye contact
 - b. Body language
 - c. Facial expressions
 - d. Appropriate appearance
- 3-03** Trainee shall initiate action to a citizen's concern, given policies and procedures, so that the concern is answered or referred to the correct individual for action and all policies and procedures are complied with.
- 3-04** Trainee shall be knowledgeable of the following:
- 3-04.01 Interpersonal relationships
- A. Blake and Mouton's Managerial Grid
 - B. Maslow's Hierarchy of Needs

- 3-04.02 Verbal and nonverbal communication
 - A. Verbal communication
 - 1. Voice inflection
 - 2. Appropriate/common terminology
 - 3. Tone of voice
 - B. Nonverbal communication
 - 1. Eye contact
 - 2. Body language
- 4. Have a specific purpose
- 5. Be clear and concise
- 6. Be focused
- 3. Facial expressions
- 4. Appropriate appearance
- 3-05** Trainee shall respond to a public inquiry, given policies and procedures, so that the inquiry is answered accurately, courteously, and in accordance with applicable policies and procedures.
- 3-06** Trainee shall be knowledgeable of the following:
 - 3-06.01 Written communication techniques
 - A. Consider the reader
 - B. Emphasis
 - C. Concise
 - 3-06.02 Oral communication techniques
 - A. Voice inflection
 - B. Appropriate/common terminology
 - C. Tone of voice
- D. Simplicity
- E. Summarize
- D. Have a specific purpose
- E. Be clear and concise
- F. Be focused
- 3-07** Trainee shall deliver a public education program, given the target audience and topic, so that the intended message is conveyed clearly.
- 3-08** Trainee shall be knowledgeable of fire department's public education program as it relates to the target audience according to the AHJ.

SECTION 4 ADMINISTRATION - 4 HOURS

- 4-01** Trainee shall recommend changes to existing departmental policies and/or implement a new departmental policy at the unit level, given a new departmental policy, so that the policy is communicated to and understood by unit members.
- 4-02** Trainee shall have knowledge of the following:
 - 4-02.01 Written communication techniques
 - A. Consider the reader
 - B. Emphasis
 - C. Concise
 - 4-02.02 Oral communication techniques
 - A. Voice inflection
 - B. Appropriate/common terminology
 - C. Tone of voice
- D. Simplicity
- E. Summarize
- D. Have a specific purpose
- E. Be clear and concise
- F. Be focused
- 4-03** Trainee shall execute routine unit-level administrative functions, given forms and record-management systems, so that the reports and logs are complete and files are maintained in accordance with policies and procedures.
- 4-04** Trainee shall be knowledgeable of the following:
 - 4-04.01 Administrative policies and procedures
 - A. AHJ
 - 4-04.01 Records management
 - A. Paper-based
 - B. Electronic
 - C. Record retention requirements
 - D. Storage and security
- 4-05** Trainee shall prepare a budget (purchase) request, given a need and budget (purchase) forms, so that the request is in the proper format and is supported with data.
- 4-06** Trainee shall be knowledgeable of policies and procedures and the revenue sources and budget process.
 - 4-06.01 Policies and procedures
 - A. AHJ
 - 4-06.02 Revenue sources
 - A. Operating Budget (e.g. program, line item)
 - 4-06.03 Budget process
 - A. AHJ

SECTION 5 INSPECTION AND INVESTIGATION – 4 HOURS

- 5-01** Trainee shall be able to perform a fire investigation to determine preliminary cause, securing the incident scene, and preserving evidence, according to the following job performance requirements.
- 5-01.01 The NFPA's intent is to instill an awareness of those areas that officers might address in the performance of their duties. Organizations that desire higher levels of competency in these areas should refer to the applicable NFPA professional qualifications standards: NFPA 1031 and NFPA 1033.
 - 5-01.02 Evaluate available information, given a fire incident, observations, and interviews of first-arriving members and other individuals involved in the incident, so that a preliminary cause of the fire is determined, reports are completed, and, if required, the scene is secured and all pertinent information is turned over to an investigator.
- 5.02** Trainee shall have knowledge of the following:
- 5-02.01 Common causes of fire
 - A. Accidental
 - B. Natural
 - C. Incendiary/Suspicious
 - D. Undetermined
 - 5-02.02 Fire growth and development
 - A. Basic fire chemistry/sciences
 - B. Area of origin
 - 5-02.03 Policies and procedures for calling for investigators
 - A. AHJ
- 5.03** Trainee shall secure an incident scene, given rope or barrier tape, so that unauthorized persons can recognize the perimeters of the scene and are kept from restricted areas, and all evidence or potential evidence is protected from damage or destruction.
- 5.04** Trainee shall have knowledge of the following:
- 5-04.01 Types of evidence
 - A. Demonstrative
 - B. Documentary/circumstantial
 - C. Testimonial
 - 5-02.02 The importance of fire scene security
 - A. Evidence protection
 - B. Public safety
 - 5-02.03 Evidence preservation
 - A. Chain of custody
 - B. Contributes to prosecution
 - C. Use of caution during salvage and overhaul

SECTION 6 EMERGENCY SERVICE DELIVERY – 10 HOURS

- 6-01** Emergency service delivery is the component of fire department organization providing mitigation of responses to emergency incidents, such as those involving fires, emergency medical situations, mass casualties, hazardous materials, weapons of mass destruction, and terrorism, as well as other emergency events. Trainee shall be trained to supervise emergency operations, conduct pre-incident planning, and deploy assigned resources in accordance with the local emergency plan and according to job performance requirements.
- 6-02** Trainee shall develop a pre-incident plan, given an assigned facility and preplanning policies, procedures, and forms, so that all required elements are identified and the approved forms are completed and processed in accordance with policies and procedures.
- 6-03** Trainee shall be knowledgeable of the following
- 6-03.01 Elements of the local emergency plan
 - A. AHJ
 - 6-03.02 A pre-incident plan
 - 6-03.03 Basic building construction
 - A. Construction type
 - B. Occupancy type
 - 6-03.04 Basic fire protection systems and features
 - A. Sprinkler systems
 - B. Standpipe systems
 - C. Alert/detection systems
 - D. Other special extinguishing systems

- 6-03.05 Basic water supply
 - A. Determine location(s) of water supplies
 - B. Fire Department Connections (FDC)
 - C. Determine required fire flow
 - 6-03.06 Basic fuel loading
 - A. Based on hazard class
 - 6-03.07 Fire growth and development
 - A. Basic fire chemistry/science
 - 6-04** Trainee shall develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency.
 - 6-05** Trainee shall be knowledgeable of the following:
 - 6-05.01 Elements of a size-up
 - A. Size-up includes the many variables that the officer observes from the time of the alarm, during response, and upon arrival, in order to develop an initial action plan to control an emergency incident.
 - 1. Size up processes
 - a. Layman's 5-step process
 - b. NFA size-up system
 - 2. Size-up elements
 - a. Building type and occupancy
 - b. Demographics
 - c. Fire and smoke conditions
 - d. Materials spilled or involved in fire
 - e. Modes of action
 - i. Defensive
 - ii. Offensive
 - iii. Transition
 - f. Number of occupants
 - g. Time of day
 - h. Water supply
 - i. Weather
 - j. Other hazards
 - B. Standard operating procedures for emergency operations
 - 1. AHJ
 - C. Fire behavior
 - 1. Basic fire chemistry/science
- 6-06** Trainee shall implement an action plan at an emergency operation, given assigned resources, type of incident, and a preliminary plan, so that resources are deployed to mitigate the situation.
This requirement takes into consideration the officer's ability to give orders, direct personnel, evaluate information, and allocate resources to respond to the wide variety of emergency situations the fire service encounters.
- 6-07** Trainee shall have knowledge of the following:
 - 6-07.01 Standard operating procedures
 - A. AHJ
 - 6-07.02 Resources available for the mitigation of fire and other emergency incidents
 - A. Single company
 - B. One alarm
 - C. Multiple alarm
 - D. Mutual/automatic aid
 - 6-07.03 An incident management system
 - A. NIMS
 - B. ICS
 - 6-07.04 Scene safety
 - A. Rapid intervention/backup team
 - B. Two-in/two-out
 - C. Incident safety officer
 - 6-07.05 Personnel accountability system
- 6-08** Trainee shall develop and conduct a post-incident analysis, given a single unit incident and post-incident analysis policies, procedures, and forms, so that all required critical elements are identified and communicated and the approved forms are completed and processed in accordance with policies and procedures.

- 6-07 Trainee shall have knowledge of the following:
 - 6-07.01 Elements of a post-incident analysis
 - A. Reconstruct the incident to establish a clear picture of the events surrounding the incident
 - B. Non-punitive
 - C. Focus on improving emergency response
 - 6-07.02 Basic building construction
 - A. Construction type
 - B. Occupancy type
 - 6-07.03 Basic fire protection systems and features
 - A. Sprinkler systems
 - B. Standpipe systems
 - C. Alert/detection systems
 - D. Other special extinguishing systems
 - 6-07.04 Basic water supply
 - A. Determine location(s) of water supplies
 - B. Fire Department Connections (FDC)
 - C. Determine required fire flow
 - 6-07.05 Basic fuel loading
 - A. Based on hazard class
 - 6-07.06 Fire growth and development
 - A. Basic fire chemistry/science
 - 6-07.07 Departmental procedures relating to dispatch response tactics and operations
 - A. AHJ
 - 6-07.08 Customer service
 - A. AHJ

SECTION 7 HEALTH AND SAFETY – 8 HOURS

- 7-01 Trainee shall be able to integrate safety plans, policies, and procedures into the daily activities as well as the emergency scene, including the donning of appropriate levels of personal protective equipment to ensure a work environment, in accordance with health and safety plans, for all assigned members, according to the following job performance requirements
 - 7-01.01 Apply safety regulations at the unit level, given safety policies and procedures, so that required reports are completed, in-service training is conducted, and member responsibilities are conveyed.
- 7-02 Trainee shall have knowledge of the following:
 - 7-02.01 The most common causes of personal injury and accident to members
 - 7-02.02 Safety policies and procedures
 - 7-02.03 Basic workplace safety
 - 7-02.04 The components of an infectious disease control program.
- 7-03 Trainee shall be able to identify safety hazards and to communicate orally and in writing.
- 7-04 Trainee shall conduct an initial accident investigation, given an incident and investigation forms, so that the incident is documented and reports are processed in accordance with policies and procedures.
- 7-05 Trainee shall have knowledge of the following:
 - 7-05.01 Procedures for conducting an accident investigation
 - 7-05.02 Safety policies and procedures.
- 7-06 Trainee shall be able to communicate orally and in writing and to conduct interviews.

G. Curriculum for Fire Officer II

SECTION 1 GENERAL – 1 HOUR

- 1-01 Trainee shall have knowledge of the organization of local government
- 1-02 Trainee shall have knowledge of enabling and regulatory legislation and the law-making process at the local, state, and federal levels
- 1-03 Trainee shall have knowledge of the functions of other bureaus, divisions, agencies, and organizations and their roles and responsibilities that relate to the fire service
 - 1-03.01 Intergovernmental and interagency cooperation

SECTION 2 HUMAN RESOURCE MANAGEMENT – 10 HOURS

2-01 This function involves evaluating member performance, according to the following job performance requirements. Initiate actions to maximize member performance and/or to correct unacceptable performance, given human resource policies and procedures, so that member and/or unit performance improves or the issue is referred to the next level of supervision.

2-02 Trainee shall have knowledge of the following:

- 2-02.01 Human resource evaluation policies and procedures in reference to;
 - A. Federal (e.g. Americans with Disabilities Act)
 - B. State (e.g. Local Government Code)
 - C. Local/AHJ (e.g. city policies)
 - D. Departmental (e.g. departmental policies)
- 2-02.02 Problem identification
 - A. Performance
 - B. Behavior
- 2-02.03 Organizational behavior
 - A. Acceptable/unacceptable job performance
 - B. Acceptable/unacceptable behavior
 - C. Culture
 - D. Change/status quo
- 2-02.04 Group dynamics
 - A. Common binding interest
 - B. Vital group image
 - C. Sense of continuity
 - D. Shared set of values
 - E. Different roles within the group
- 2-02.05 Leadership styles
 - A. Autocratic
 - B. Democratic
 - C. Laissez-faire
- 2-02.06 Types of power
 - A. Reward
 - B. Coercive
 - C. Identification
 - D. Expert
 - E. Legitimate
 - F. Informal
- 2-02.07 Interpersonal dynamics
 - A. Blake and Mouton's Managerial Grid
 - B. Maslow's Hierarchy of Needs
 - C. Other

2-03 Trainee shall evaluate the job performance of assigned members, given personnel records and evaluation forms, so each member's performance is evaluated accurately and reported according to human resource policies and procedures.

2-04 Trainee shall be knowledgeable of the following:

- 2-04.01 Human resource evaluation policies and procedures in reference to;
 - A. Federal (e.g. Fair Labor Standards Act)
 - B. State (e.g. Local Government Code)
 - C. Local/ AHJ (e.g. city policies)
 - D. Departmental (e.g. departmental policies)
- 2-04.02 Job descriptions
 - A. General description of work
 - B. Typical tasks
 - C. Knowledge, skills and abilities
 - D. Education and Experience
 - E. Special Requirements
 - F. Future Requirements
- 2-04.03 Objectives of a member evaluation program
 - A. Accuracy
 - B. Fairness
 - C. Consistency
 - D. Thoroughness
 - E. Identify areas of excellence or improvement
 - F. Document member's work history
- 2-04.04 Common errors in evaluating
 - A. Halo/Horn effect
 - B. Central tendency
 - C. Contrast effect
 - D. Leniency or severity
 - E. Personal Bias
 - F. Recency
 - G. Frame of Reference

SECTION 3 COMMUNITY AND GOVERNMENT RELATIONS – 0 HOURS

No additional requirements at this level per NFPA.

SECTION 4 ADMINISTRATION – 10 Hours

- 4-01** This section involves preparing a project or divisional budget, news releases, and policy changes, according to the following job performance requirements.
- 4-02** Trainee shall develop a policy or procedure, given an assignment, so that the recommended policy or procedure identifies the problem and proposes a solution.
- 4-03** Trainee shall be knowledgeable of the following:
- 4-03.01 Policies and procedures
 - A. Develop policies/procedures
 - B. Train members
 - C. Implement policies/procedures
 - D. Evaluate/revise policies/procedures
 - 4-03.02 Problem identification
 - A. Be attentive
 - B. Ask questions
 - C. Encourage subordinates to report problems
- 4-04** Trainee shall develop a project or divisional budget, given schedules and guidelines concerning its preparation, so that capital, operating, and personnel costs are determined and justified.
- 4-05** Trainee shall have knowledge of the following:
- 4-05.01 The supplies and equipment necessary for ongoing or new projects
 - 4-05.02 Repairs to existing facilities
 - 4-05.03 New equipment
 - 4-05.04 Apparatus maintenance
 - 4-05.05 Personnel costs
 - 4-05.06 Appropriate budgeting system
- 4-06** Trainee shall describe the process of purchasing, including soliciting and awarding bids, given established specifications, in order to ensure competitive bidding.
- 4-07** Trainee shall have knowledge of the following:
- 4-07.01 Purchasing laws
 - A. AHJ
 - B. State laws
 - 4-07.02 Policies and procedures
 - A. AHJ
- 4-08** Trainee shall prepare a news release, given an event or topic, so that the information is accurate and formatted correctly.
- 4-09** Trainee shall have knowledge of the following:
- 4-09.01 Policies and procedures for news releases
 - A. AHJ
 - 4-09.02 Format used for news releases
 - A. Oral interview
 - 1. Be prepared
 - 2. Stay in control
 - 3. Look and act the part
 - 4. It is not over until it is over
 - B. Written
 - 1. Formulate a plan
 - 2. Develop a concept and write the release
 - 3. Make it unique
 - 4. Well organized
 - 5. Department letterhead
 - 6. Release news to the media
- 4-10** Trainee shall prepare a concise report for transmittal to a supervisor, given fire department record(s) and a specific request for details such as trends, variances, or other related topics.
- 4-11** Trainee shall have knowledge of the following:
- 4-11.01 The data processing system
 - A. Word processing software
 - B. Spreadsheet software
 - C. Presentation software
 - D. Database software

SECTION 5 INSPECTION AND INVESTIGATION – 10 HOURS

This section involves conducting inspections to identify hazards and address violations and conducting fire investigations to determine origin and preliminary cause, according to the following job performance requirements.

- 5-01** Trainee shall describe the procedures for conducting fire inspections, given any of the following occupancies, so that all hazards, including hazardous materials, are identified, approved forms are completed, and approved action is initiated:
- | | | | |
|---------|----------------------------|---------|--------------------|
| 5-01.01 | Assembly | 5-01.07 | Business |
| 5-01.02 | Educational | 5-01.08 | Industrial |
| 5-01.03 | Health care | 5-01.09 | Storage |
| 5-01.04 | Detention and correctional | 5-01.10 | Unusual structures |
| 5-01.05 | Residential | 5-01.11 | Mixed occupancies |
| 5-01.06 | Mercantile | | |
- 5-02** Trainee shall have knowledge of:
- 5-02.01 Inspection procedures
 - 5-02.02 Fire detection, alarm, and protection systems
 - 5-02.03 Identification of fire and life safety hazards
 - 5-02.04 Marking and identification systems for hazardous materials
- 5-03** Trainee shall determine the point of origin and preliminary cause of a fire, given a fire scene, photographs, diagrams, pertinent data and/or sketches, to determine if arson is suspected.
- 5-04** Trainee shall have knowledge of the following:
- 5-04.01 Methods used by arsonists
 - A. Disabling built-in fire protection
 - B. Delaying notification/making access difficult
 - C. Using accelerants and trailers
 - D. Setting multiple points of origin
 - E. Tampering or altering equipment
 - 5-04.02 Common causes of fire
 - A. Accidental
 - B. Natural
 - C. Incendiary/Suspicious
 - D. Undetermined
 - 5-04.03 Basic cause and origin determination
 - A. Basic fire chemistry/sciences
 - B. Area of origin
 - C. Fire patterns
 - 5-04.04 Fire growth and development
 - 5-04.05 Documentation of preliminary fire investigative procedures
 - A. AHJ
 - B. NFIRS
 - C. NFPA 921

SECTION 6 EMERGENCY SERVICE DELIVERY – 8 HOURS

- 6-01** This duty involves supervising multi-unit emergency operations, conducting pre-incident planning, and deploying assigned resources, according to the following job requirements.
- 6-02** Trainee shall produce operational plans, given an emergency incident requiring multiunit operations, so that required resources and their assignments are obtained and plans are carried out in compliance with approved safety procedures resulting in the mitigation of the incident.
- 6-03** Trainee shall have knowledge of the following:
- 6-03.01 Standard operating procedures
 - A. AHJ
 - 6-03.02 National, state/provincial, and local information resources available for the mitigation of emergency incidents
 - 6-03.03 An incident management system
 - A. NIMS
 - B. Incident Command System
 - 6-03.04 A personnel accountability system
- 6-04** Trainee shall develop and conduct a post-incident analysis, given multi-unit incident and post-incident analysis policies, procedures, and forms, so that all required critical elements are identified and communicated and the approved forms are completed and processed.
- 6-05** Trainee shall have knowledge of the following:
- 6-05.01 Elements of a post-incident analysis
 - A. Reconstruct the incident to establish a clear picture of the events surrounding the incident
 - B. Non-punitive
 - C. Focus on improving emergency response

- 6-05.02 Basic building construction
 - A. Construction type
 - B. Occupancy type
- 6-05.03 Basic fire protection systems and features
 - A. Sprinkler systems
 - C. Alert/detection systems
 - B. Standpipe systems
 - D. Other special extinguishing systems
- 6-05.04 Basic water supply
 - A. Pressurized sources
 - B. Drafting points
 - C. Fire department connections (FDC)
- 6-05.05 Basic fuel loading
 - A. Based on hazard class
- 6-05.06 Fire growth and development
 - A. Basic fire chemistry/science
- 6-05.07 Departmental procedures relating to dispatch response tactics and operations
 - A. AHJ
- 6-05.08 Customer service
 - A. AHJ

SECTION 7 HEALTH AND SAFETY – 9 Hours

- 7-01** Trainee shall this section involves reviewing injury, accident, and health exposure reports, identifying unsafe work environments or behaviors, and taking approved action to prevent reoccurrence, according to the following job requirements.
- 7-02** Trainee shall analyze a member's accident, injury, or health exposure history, given a case study, so that a report including action taken and recommendations made is prepared for a supervisor.
- 7-03** Trainee shall have knowledge of the causes of unsafe acts, health exposures, or conditions that result in accidents, injuries, occupational illnesses, or deaths.

VIII. MINIMUM STANDARDS FOR INCIDENT SAFETY OFFICER CERTIFICATION

A. Reference Materials

The jurisdictional entity in which the Incident Safety Officer serves must have access to the following training manuals:

NFPA

NFPA 1521: Standard for Fire Department Safety Officer

B. Applicants must complete one of the following:

1. Incident Safety Officer coursework meeting the requirements of NFPA 1521; or
2. TEEEX Incident Safety Officer course.

C. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.

D. Upon review, the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

IX. MINIMUM STANDARDS FOR PUBLIC INFORMATION OFFICER CERTIFICATION**A. Reference Materials**

The jurisdictional entity in which the Public Information Officer serves must have access to the following training manuals:

NFPA

NFPA 1035: Professional Qualifications for Public Fire and Life Safety Educator

B. Applicants must complete one of the following:

1. Public Information Officer coursework meeting the requirements of NFPA 1035; or
2. TEEEX Public Information Officer course.

C. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.**D. Upon review, the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.**

X. MINIMUM STANDARDS FOR PUBLIC FIRE EDUCATOR CERTIFICATION**A. Reference Materials**

The jurisdictional entity in which the Public Information Officer serves must have access to the following training manuals:

NFPA

NFPA 1035: Professional Qualifications for Public Fire and Life Safety Educator

B. The Certification Program offers two levels of Public Fire Educator Certification:**1. Public Fire Educator I**

- a. Applicants must complete one of the following:
 - i. Public Fire Educator I coursework meeting the requirements of NFPA 1035; or
 - ii. TEEX Public Fire Educator I course.
- b. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- c. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

2. Public Fire Educator II

- a. Applicants must complete one of the following:
 - i. Public Fire Educator I coursework meeting the requirements of NFPA 1035; or
 - ii. TEEX Public Fire Educator I course.
- b. Applicants must hold the following SFFMA certification:
 - i. Public Fire Educator I
- c. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- d. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

XI. MINIMUM STANDARDS FOR WILDLAND FIRE FIGHTING

A. Reference Materials

The jurisdictional entity in which the Wildland Fire Fighter serves must have access to the following training manuals:

NWCG

Firefighter Training S-130 (2003)

B. Applicants must complete one of the following:

1. SFFMA Wildland Fire Fighting Curriculum;
2. Wildland Fire Fighting coursework meeting the requirements of NWCG S-130 or S-190; or
3. Texas Forest Service Wildland Fire Fighting course or equivalent.

C. Applicants must hold the following SFFMA certification:

1. Introductory Fire Fighting

D. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.

E. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

F. Curriculum for Wildland

SECTION 1 BASIC CONCEPTS

Upon the successful completion of this section, participants will be able to recognize basic wildland fire concepts and identify the similarities and differences between structural and wildland fire fighting.

1-01 Trainee shall define basic terminology used in wildland fire. *(25-01.01 A.-O.)*

1-02 Trainee shall identify the parts of a wildland fire.

1-03 Trainee shall describe the ICS and how the incident management structure is organized.

1-04 Trainee shall describe the general responsibilities of each section in the ICS.

1-05 Trainee shall explain the benefits to crew organizations and describe the different types of crew organizations commonly used in initial attack and extended attack.

1-06 Trainee shall identify and describe different types of maps that may be used by wildland firefighters

1-07 Trainee shall identify major topographic features, both in the field and on a map.

1-08 Trainee shall interpret various contour lines and match them with the corresponding land features.

1-09 Trainee shall describe how to locate a point on a map utilizing grid systems, a Global Positioning System (GPS) unit, and township and range.

1-10 Trainee shall describe the parts of a compass.

1-11 Trainee shall describe how to set a declination and determine azimuth on a compass.

1-12 Trainee shall explain how to use a compass with a map.

1-13 Trainee shall determine the direction and distance traveled using a map and compass together.

1-14 Trainee shall describe frequencies and how they affect radio communications.

1-15 Trainee shall identify the types of radios used in wildland fire fighting operations and explain the purpose/function of the basic parts and controls.

1-16 Trainee shall list the elements of proper radio use procedures and describe how to transmit a radio message correctly.

1-17 Trainee shall describe radio troubleshooting practices used to improve radio reception or transmission.

1-18 Trainee shall describe precautions and care to protect the radio from damage.

1-19 Trainee shall discuss the similarities and differences between structural and wildland fire fighting.

SECTION 2 WILDLAND FIRE BEHAVIOR

Upon the successful completion of this section, participants will be able to recognize the factors that affect a wildland fire environment.

2-01 Trainee shall identify the elements of the fire triangle. *(15-01.02)*

2-02 Trainee shall describe the methods of heat transfer. *(15-01.05)*

2-03 Trainee shall identify the fuel characteristics that influence the behavior of wildland fire.

2-04 Trainee shall demonstrate the ability to apply the major fuel types to a specific geographic area, and explain why they are of concern to firefighters.

- 2-05 Trainee shall demonstrate the ability to determine fuel characteristics based on illustrations and descriptions.
- 2-06 Trainee shall describe how weather influences wildland fire behavior.
- 2-07 Trainee shall describe the effect of temperature and Relative Humidity (rH), precipitation, atmospheric stability/instability, winds and wind systems, and critical fire weather conditions on wildland fire behavior.
- 2-08 Trainee shall identify the resources used to aid in the management of wildland fires.
- 2-09 Trainee shall list the basic characteristics of topography and describe how they affect wildland fire behavior.
- 2-10 Trainee shall identify indicators that fire behavior may be increasing and influences that may cause extreme fire behavior.
- 2-11 Trainee shall list fire environment factors to be aware of while monitoring fire behavior.
- 2-12 Trainee shall discuss and predict the outcomes of factors influencing fire behavior.

SECTION 3 WILDLAND FIRE FIGHTING SAFETY

Upon the successful completion of this section, participants will be able to analyze and safely apply accepted strategies and tactics in the wildland fire environment.

- 3-01 Trainee shall define safety and describe the importance of the steps of the risk management process. *(25-02.06)*
- 3-02 Trainee shall define situational awareness and describe its importance.
- 3-03 Trainee shall identify potential hazards in the wildland fire environment.
- 3-04 Trainee shall identify the common denominators of fire behavior on tragedy fires.
- 3-05 Trainee shall describe the communication responsibilities of the wildland firefighter.
- 3-06 Trainee shall describe actions that foster teamwork.
- 3-07 Trainee shall discuss and apply the appropriate “Watch-Out” situations and Standard Firefighting Orders to minimize the potential for serious injury or death. *(25-02.06)*
- 3-08 Trainee shall describe the relationship between Lookouts, Communications, Escape routes, and Safety Zones (CLES) and the Standard Firefighting Orders. *(25-02.06)*
- 3-09 Trainee shall analyze video presentations of incident situations where LCES was misapplied and determine what should have been done.
- 3-10 Trainee shall determine the minimum safety zone for a given set of incident facts.
- 3-11 Trainee shall describe the difference between deployment sites and safety zones.
- 3-12 Trainee shall explain the purpose of an After Action Review (AAR) and the role of the firefighter in the review process.

SECTION 4 FIREFIGHTER AND EQUIPMENT PREPAREDNESS

Upon the successful completion of this section, participants will be able to identify the requirements of the individual’s preparedness and demonstrate the readiness of all tools, equipment and vehicles utilized on a wildland fire assignment.

- 4-01 Trainee shall list the benefits of maintaining a high level of physical fitness and health.
- 4-02 Trainee shall develop a list and describe types of personal gear needed for an extended period away from the wildland firefighter’s home station.
- 4-03 Trainee shall explain the importance of keeping personal gear and assigned area clean and organized.
- 4-04 Trainee shall explain the importance of the proper use, maintenance, inspection, and accountability of assigned Personal Protective Equipment (PPE).
- 4-05 Trainee shall explain the functions of the fire shelter.
- 4-06 Trainee shall discuss the inspection and care of the fire shelter.
- 4-07 Trainee shall describe and demonstrate the correct deployment procedures for the fire shelter in twenty-five (25) seconds or less.
- 4-08 Trainee shall discuss commonly used hand tools in wildland fire fighting, and describe the function of each and how to inspect, maintain, and sharpen them. *(25-01.01 O.)*
- 4-09 Trainee shall describe the proper carrying, passing, spacing, and storing techniques for commonly used hand tools.
- 4-10 Trainee shall, given a description of fireline jobs and a choice of hand tools, select the hand tool that would be used for each job.
- 4-11 Trainee shall describe and demonstrate the safe operation of firing devices commonly used in wildland fire suppression.
- 4-12 Trainee shall discuss safety procedures to follow when traveling by:
 - 4-11.01 vehicle;
 - 4-11.02 helicopter; or

4-11.02 on foot

4-13 Trainee shall discuss and demonstrate the safety inspection of a crew transport vehicle.

4-14 Trainee shall explain the importance of respecting cultural differences while on a fire assignment.

SECTION 5 WILDLAND SUPPRESSION STRATEGIES AND TACTICS

Upon the successful completion of this section, participants will be able to demonstrate proper wildland suppression activities including initial size-up, recognition of strategies, and application of tactics.

5-01 Trainee shall describe and perform the initial at-the-scene size-up process for wildland fire suppression. (25-02.03)

5-02 Trainee shall identify the information needed for successful size-up reporting. (25-02.03)

5-03 Trainee shall explain procedures for designating and protecting the area of fire origin for follow-up investigation.

5-04 Trainee shall describe three methods for breaking the fire triangle.

5-05 Trainee shall describe the three strategies of attack on a fire. (25-01.01)

5-06 Trainee shall describe various fire suppression techniques and their uses. (25-01.01)

5-07 Trainee shall describe types of firelines and the effective standards for fireline construction.

5-08 Trainee shall describe the threats and hazards to control lines.

5-09 Trainee shall describe two kinds of coordinated crew techniques used for fireline construction.

5-10 Trainee shall describe the proper follow-up procedures for a dozer or tractor plow fireline.

5-11 Trainee shall describe safety procedures to follow when working around engines, tractor plows, and dozers.

5-12 Trainee shall describe safety procedures to follow in an area where retardant or water drops are being made.

5-13 Trainee shall identify and describe common water-handling devices and delivery systems used during wildland fire suppression, and demonstrate the application of each.

5-14 Trainee shall identify and describe the operation of the most common type of pump used in wildland fire suppression.

5-15 Trainee shall identify the responsibilities and Personal Protective Equipment (PPE) of the portable pump operator.

5-16 Trainee shall describe and demonstrate proper setup and operation of a portable pump and water delivery system for wildland fire suppression.

5-17 Trainee shall describe safe brush truck operation techniques used in fire suppression.

5-18 Trainee shall describe and demonstrate how to properly retrieve, clean, inspect, and store deployed hose, fittings and accessories.

5-19 Trainee shall describe the hazards to hose lays and how to mark non-serviceable sections of hose and couplings.

SECTION 6 WILDLAND/URBAN INTERFACE

Upon the successful completion of this section, participants will be able to recognize the wildland/urban interface, the special considerations associated with that environment, and appropriate safety practices when responding to wildland/urban interface fires.

6-01 Trainee shall discuss the challenges associated with wildland/urban interface fires. (25-02.05)

6-02 Trainee shall discuss personnel safety concerns and the associated “Watch-Out” Situations in wildland/urban interface fires. (25-02.05)

6-03 Trainee shall define hazardous materials and explain the general guidelines when reacting to a possible hazardous material emergency.

6-04 Trainee shall list and describe the six steps in the D.E.C.I.D.E. process.

6-05 Trainee shall list and explain the six clues for detecting the presence of hazardous materials.

6-06 Trainee shall define the phrase “cultural resources” and describe the effects of fire suppression activities on them.

6-07 Trainee shall describe the methods to protect cultural resources during fire suppression activities.

SECTION 7 MOP UP AND PATROLING

Upon the successful completion of this section, participants will be able to recognize the importance of effective mop-up and patrol activities on wildland fire.

7-01 Trainee shall describe how to extinguish burning materials during mop-up activities.

7-02 Trainee shall describe systematic methods of mop up.

7-03 Trainee shall explain how four of the senses aid in detecting burning materials.

7-04 Trainee shall discuss the technique of cold trailing on a fire perimeter and the importance of breaking up and dispersing machine piles and berms adjacent to the control line.

7-05 Trainee shall discuss the factors that determine the amount of additional work required for a water or retardant

line and the associated safety concerns.

7-06 Trainee shall describe the process of strengthening the fire control line to facilitate holding.

7-07 Trainee shall describe factors to consider when patrolling a fire, such as looking for spot fire conditions and responding to them.

SECTION 8 FINAL EXERCISE

Upon the successful completion of this section, participants will be able to apply the knowledge and skills associated with wildland fire suppression to safely respond to wildland fire incidents.

8-01 Trainee shall demonstrate proper travel procedures en route to and from a fire. (25-02.02)

8-02 Trainee shall demonstrate how to properly read a compass and/or GPS unit.

8-03 Trainee shall locate and protect the area of fire origin.

8-04 Trainee shall demonstrate the proper use and maintenance of appropriate hand tools and equipment during fire suppression activities.

8-05 Trainee shall, using appropriate PPE, demonstrate the proper inspection, maintenance, sharpening, carrying, passing, and spacing techniques for commonly used hand tools.

8-06 Trainee shall construct progressive and leap frog firelines.

8-07 Trainee shall demonstrate the ability to choose escape routes to promptly retreat to a safety zone.

8-08 Trainee shall demonstrate the ability to apply clear and concise communications on the fire ground.

8-09 Trainee shall demonstrate how to properly operate and maintain the backpack pump.

8-10 Trainee shall select, prepare, and demonstrate the safe use of the appropriate firing device for a given situation.

8-11 Trainee shall construct simple and progressive hose lays.

8-12 Trainee shall select and operate the appropriate system for the delivery of water on a wildland fire.

8-13 Trainee shall demonstrate the proper mop-up and patrol techniques.

8-14 Trainee shall participate in an After Action Review (AAR).

XII. MINIMUM STANDARDS FOR TECHNICAL RESCUE APPRENTICE CERTIFICATION

This program is designed to provide specialty certification and training for Volunteer Firefighters, Volunteer Search & Rescue Technicians, Volunteer Emergency Medical Technicians and others as the Board may determine.

Technical Search & Rescue Personnel who have received training prior to passage of this program may, upon providing proof to a Board member and receiving approval, apply the training hours for certification. Any training hours earned prior to July 1, 2008 must be approved by the Board.

A. Reference Materials

The jurisdictional entity in which the Technical Rescue Personnel serves must have access to the following reference materials:

NFPA

NFPA 1006: Standard for Technical Rescuer Professional Qualifications, ed. 2008

NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents, ed. 2004

IFSTA

Fire Service Search and Rescue, 7th Ed. (2005)

Principles of Vehicle Extrication, 2nd Ed. (2000)

Technical Rescue for Structural Collapse, North American Version, 1st Ed. (2003)

Other

Jurisdictionally developed codes and protocols

B. Prior to beginning this course of instruction, trainee shall complete the following FEMA courses:

1. IS-100.a – Introduction to ICS
2. IS-200.a – ICS for Single Resources and Initial Action Incidents
3. IS-700 or 700.a – Introduction to NIMS
4. IS-800 – Introduction to National Response Framework
5. IS-5.a – An Introduction to Hazardous Materials

C. Applicants must successfully pass:

1. all psycho-motor skill demonstrations; and
2. a comprehensive final examination

D. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief, and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.

E. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

F. Training Requirements

SECTION	SUBJECT	HOURS
1	Site Operations (includes Technical Rescue Apprentice)	10
2	Victim Management (includes First Aid)	12
3	Maintenance	2
4	Ropes and Rigging	16
TOTAL RECOMMENDED HOURS		40

* The recommended hours for skills evaluation is based on 12 students. Actual hours needed depends on the number of students, the number of examiners, availability of equipment, and the student skill level

E. Curriculum for Technical Rescue Apprentice

SECTION 1 SITE OPERATIONS – 10 HOURS

- 1-01** Trainee shall correctly establish a Landing Zone with no more than one instructor assist.
- 1-02** Trainee shall correctly demonstrate use of marshaling signals to guide a helicopter, while using proper PPE, in landing and taking off with no more than one instructor assist.
- 1-03** Trainee shall correctly identify the necessary elements of a successful site survey associated with incidents involving different rescue environments to include PPE, scene control barriers and equipment.
- 1-04** Trainee shall correctly identify the factors that rescuers must know to effectively perform a scene size-up associated with incidents involving the different rescue environments.
- 1-05** Trainee shall correctly identify the types of hazards and their consequences for rescuers that must be included in Hazard Assessment associated with incidents involving the different rescue environments.
- 1-06** Trainee shall correctly identify the necessary elements for implementing an On-Scene Operational Plan or Incident Action Plan (IAP).

- 1-07 Trainee shall correctly identify the responsibilities of command and the primary functions of command associated with incidents involving the different rescue environments.
- 1-08 Trainee shall correctly identify the requirements for safe support and use of helicopters in rescue incidents.
- 1-09 Trainee shall correctly identify the criteria for packaging a patient for aero-medical transport.
- 1-10 Trainee shall correctly identify the criteria for tracking equipment, identify lighting sources and shelters, thermal protection, rehab areas and personnel rotations.
- 1-11 Trainee shall correctly demonstrate using technical references, gathering and relaying information and using information gathering systems in a simulated rescue incident, with no more than two instructor assists.
- 1-12 Trainee shall correctly identify the criteria for entering into, maneuvering in, and exiting from a search/rescue environment and how to perform self escape/rescue.
- 1-13 Trainee shall correctly identify the criteria for terminating a search/rescue incident.

SECTION 2 VICTIM MANAGEMENT - 12 HOURS

- 2-01 Trainee shall correctly identify knowledge required for performing first aid to include blood-borne pathogens.
- 2-02 Trainee shall demonstrate applying splints, bandages on a simulated victim with no more than one instructor assist.
- 2-03 Trainee shall demonstrate performing CPR on a CPR adult dummy with no more than one instructor assist.
- 2-04 Trainee shall demonstrate performing CPR on a CPR child/infant dummy with no more than one instructor assist.
- 2-05 Trainee shall correctly identify types and systems of triage, methods to determine injury severity, resources and prioritization requirements and victim transfer procedures.
- 2-06 Given a simulated rescue scenario, trainee shall perform triage on a victim, using triage tags and assessing the rescue versus recovery factors, with no more than one instructor assist.
- 2-07 Trainee shall correctly identify in writing, the criteria and conditions that require rescuers to use the various lifts and carries.
- 2-08 Trainee shall correctly demonstrate stabilizing and moving a patient using the One Rescuer Incline Drag and Carry method, with no more than one instructor assist.
- 2-09 Trainee shall demonstrate executing a Blanket Drag, with no more than one instructor assist.
- 2-10 Trainee, working as a member of a team, shall correctly demonstrate executing an Extremities Lift and Carry, with no more than one instructor assist.
- 2-11 Trainee, working as a member of a team, shall correctly demonstrate executing a Chair Lift and Carry, with no more than one instructor assist.
- 2-12 Trainee, working as a member of a team, shall correctly demonstrate executing a one rescuer Cradle-in-Arms Lift and Carry, with no more than one instructor assist.
- 2-13 Trainee, working as a member of a team, shall correctly demonstrate executing a Seat Lift and Carry, with no more than one instructor assist.
- 2-14 Trainee, working as a member of a team, shall correctly demonstrate moving and securing a patient onto a long spine board or litter, with no more than instructor assist.
- 2-15 Trainee, working as a member of a team, shall correctly demonstrate moving a patient from ground level to a gurney (ambulance cot) using three rescuers, with no more than one instructor assist.
- 2-16 Trainee, working as a member of a team, shall correctly demonstrate establishing a rope system for low angle extrication, with no more than one instructor assist.
- 2-17 Trainee, working as a member of a team, shall correctly demonstrate extrication of a victim uphill in a low angle environment, with no more than one instructor assist.
- 2-18 Trainee, working as a member of a team, shall correctly demonstrate extrication of a victim downhill in a low angle environment, with no more than one instructor assist.

SECTION 3 MAINTENANCE - 2 HOURS

- 3-01 Trainee shall correctly identify the guidelines for inspecting, servicing, and maintaining PPE used for various rescue disciplines.
- 3-02 Trainee shall correctly identify by written test and demonstrate the techniques for inspecting, servicing, and maintaining rescue apparatus, equipment and tools used for various rescue disciplines.

SECTION 4 ROPES AND RIGGING - 16 HOURS

- 4-01 Trainee shall correctly identify guidelines established by NFPA and OSHA standards for the safe use of ropes, and related rope rescue equipment.
- 4-02 Trainee shall correctly describe the construction characteristics and purpose of various types of ropes used for rescue incidents.
- 4-03 Trainee, when shown a specific rescue knot, shall correctly identify the knot and explain its use in the rescue environment, with no instructor assists.
- 4-04 Trainee, when given the appropriate rope, shall demonstrate tying various knots, including an end of the line loop, a midline loop, joining rope or webbing ends together, and gripping rope, with no instructor assists.
- 4-05 Trainee, when given the appropriate equipment and rope, shall demonstrate securing a rope to a selected piece of equipment, using the most effective knot, hitch, or bend for the purpose of hoisting the equipment, with no instructor assists.
- 4-06 Trainee, when given the appropriate equipment, shall correctly demonstrate constructing various single point anchor systems used in the rescue environment with no instructor assists.
- 4-07 Trainee, when given the appropriate equipment, shall correctly demonstrate a two-point load sharing anchor system, and a two-point and three-point load distributing anchor system, with no instructor assists.
- 4-08 Trainee, when given the appropriate equipment, shall correctly demonstrate rigging a 2:1 and a 3:1 simple mechanical advantage system, with no instructor assists.
- 4-09 Trainee, when given the appropriate equipment, shall correctly demonstrate rigging a 4:1 mechanical advantage, with no instructor assists.
- 4-10 Trainee, when given the appropriate equipment, shall correctly demonstrate blanketing a victim in a litter used by the AHJ, and secure the victim into the litter by means of internal and external lashing, with no instructor assists.
- 4-11 Trainee, when given the appropriate equipment, shall correctly demonstrate conducting a low angle raise using a simple hauling system incorporating a 2:1 and 3:1 hauling operation to include a visual safety check, a pre-hauling load test of all systems with verbal confirmation acknowledged by all rescue personnel, and the use of appropriate commands, with no instructor assists.
- 4-12 Trainee, when given the appropriate equipment, shall correctly demonstrate constructing a vertical lowering system using a Stokes Basket, rescue knot, appropriate lifelines, edge protection devices, and necessary auxiliary rope rescue equipment, with no instructor assists.
- 4-13 Trainee, when given the appropriate equipment, shall correctly construct a belay system designed to arrest the fall of a load in the event of a failure of a primary lowering operation and demonstrate the safe activation of the belay system, with no instructor assists.
- 4-14 Trainee, when given the appropriate equipment, shall correctly demonstrate conducting a vertical lowering operation to include a visual safety check, a pre-lowering load test of all systems with verbal confirmation acknowledged by all rescue personnel, and the use of appropriate commands, and utilization of a belay system during the operation, with no instructor assists.

XIII. MINIMUM STANDARDS FOR WILDERNESS RESCUE TECHNICIAN CERTIFICATION

This program is designed to provide specialty certification and training for Volunteer Firefighters, Volunteer Search & Rescue Technicians, Volunteer Emergency Medical Technicians and others as the Board may determine.

Technical Search & Rescue Personnel who have received training prior to passage of this program may, upon providing proof to a Board member and receiving approval, apply the training hours for certification. Any training hours earned prior to July 1, 2008 must be approved by the Board.

A. Reference Materials

The jurisdictional entity in which the Technical Rescue Personnel serves must have access to the following reference materials:

NFPA

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NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents, ed. 2004

IFSTA

Fire Service Search and Rescue, 7th Ed. (2005)

Principles of Vehicle Extrication, 2nd Ed. (2000)

Technical Rescue for Structural Collapse, North American Version, 1st Ed. (2003)

Other

Jurisdictionally developed codes and protocols

B. Prior to beginning this course of instruction, trainee shall complete the following FEMA courses:

1. IS-100.a – Introduction to ICS
2. IS-200.a – ICS for Single Resources and Initial Action Incidents
3. IS-700 or 700.a – Introduction to NIMS
4. IS-800 – Introduction to National Response Framework
5. IS-5.a – An Introduction to Hazardous Materials

C. Applicants must successfully pass both of the following:

1. all psycho-motor skill demonstrations
2. a comprehensive final examination

D. The Certification Program offers two levels of Wilderness Rescue Technician Certification:

1. **Wilderness Rescue Technician I**

- a. Applicants must complete both of the following:
 - i. SFFMA Wilderness Rescue Technician I – Phase I coursework
 - ii. SFFMA Wilderness Rescue Technician I – Phase II coursework
- b. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- c. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

2. **Wilderness Rescue Technician II**

- a. Applicants must complete all of the following:
 - i. SFFMA Wilderness Rescue Technician I – Phase I coursework
 - ii. SFFMA Wilderness Rescue Technician I – Phase II coursework
 - iii. minimum of two (2) years as a Wilderness Rescue Technician
 - iv. SFFMA Wilderness Rescue Technician II coursework
- b. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- c. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

E. Training Requirements

WILDERNESS RESCUE TECHNICIAN I – PHASE 1		
SECTION	SUBJECT	HOURS
1	Witness Interview and Victim Profile Development	4
2	Evidence Collection, Documentation, and Interpretation	6
3	Wilderness Environment Work Preparedness	10
4	Wilderness Environment Navigation	20
TOTAL RECOMMENDED HOURS		40
WILDERNESS RESCUE TECHNICIAN I – PHASE 2		
SECTION	SUBJECT	HOURS
5	Wilderness Survival	6
6	Establishment of Specialized Resources Need	2
7	Victim Location	8
8	Victim Management	6
9	Victim Movement	18
TOTAL RECOMMENDED HOURS		40
WILDERNESS RESCUE TECHNICIAN II		
SECTION	SUBJECT	HOURS
1	Victim Profile Development	8
2	Wilderness Rescue Incident Plan Development	8
3	Team Management and Direction	16
TOTAL RECOMMENDED HOURS		32

* The recommended hours for skills evaluation is based on 12 students. Actual hours needed depends on the number of students, the number of examiners, availability of equipment, and the student skill level

1. Curriculum for Wilderness Rescue Technician I – Phase 1

SECTION 1 WITNESS INTERVIEW AND VICTIM PROFILE DEVELOPMENT – 4 HOURS

- 1-01 Trainee shall correctly identify the most common ICS forms used to document a lost or missing person report.
- 1-02 Trainee shall correctly identify common traits found in lost or missing persons, critical in establishing a victim profile.
- 1-03 Trainee shall correctly identify how to identify the probabilities of the last known location of a lost or missing person.
- 1-04 Trainee shall correctly identify how to establish the probability area for a given victim.
- 1-05 Trainee shall correctly identify how to establish the probability of detection for a given victim.
- 1-06 Trainee shall correctly identify the factors that directly influence the establishment of a search priority for a given victim.

SECTION 2 EVIDENCE COLLECTION, DOCUMENTATION, AND INTERPRETATION – 6 HOURS

- 2-01 Trainee shall correctly identify methods of documenting evidence so that the chain of evidence is maintained.
- 2-02 Trainee shall correctly identify rules for interpreting evidence.
- 2-03 Trainee shall correctly identify methods of collecting evidence so that the search and possible investigative actions are not compromised.
- 2-04 Trainee, given a simulated incident shall demonstrate documenting, collecting, and interpreting evidence, with no more than one instructor assist.
- 2-05 Trainee shall demonstrate man tracking and following clues to the end in an area between 2-4 acres, using man-tracking skills, with no more than one instructor assist.

SECTION 3 WILDERNESS ENVIRONMENT WORK PREPAREDNESS – 10 HOURS

- 3-01 Trainee shall correctly identify common weather conditions and their impact on rescue technicians in the field.
- 3-02 Trainee shall correctly identify common dangers inherent with common weather conditions.
- 3-03 Trainee shall pass a 24-hour pack inspection, using the standard pack list established by the AHJ for Wilderness Rescue Technicians
- 3-04 Trainee shall correctly identify the keys to survival in a wilderness environment.
- 3-05 Trainee shall correctly identify the common poisonous animals and insects in the area of the AHJ.
- 3-06 Trainee shall correctly identify the common poisonous plants in the area of the AHJ.
- 3-07 Trainee shall correctly identify knowledge required to read road and topographic maps.
- 3-08 Trainee shall correctly identify major components, types, and features of a magnetic compass.
- 3-09 Trainee shall correctly identify the theories of how the Global Positioning System (GPS) works.
- 3-10 Trainee shall demonstrate how to use a compass to navigate a simple orienteering course of not less than six points covering between 1-4 acres, with no more than one instructor assist.

- 3-11 Trainee shall demonstrate how to utilize a GPS unit to mark a point, with no instructor assist.
- 3-12 Trainee shall demonstrate how to signal using non-electronic signaling devices, with no instructor assists.
- 3-13 Trainee shall correctly identify actions to take to maintain hygiene in a field environment.

SECTION 4 WILDERNESS ENVIRONMENT NAVIGATION – 20 HOURS

- 4-15 Trainee shall correctly identify the various types of search patterns and techniques.
- 4-16 Trainee shall, given a simulated incident and topographical maps, demonstrate how to grid a search area, with no more than one instructor assist.
- 4-17 Trainee shall demonstrate how to use a compass and topographical maps of a simulated search area, to navigate between at least 8 geographical features covering an area of between 10-40 acres and taking GPS readings at each feature, with no more than one instructor assist.
- 4-18 Trainee, working as a team member, shall demonstrate conducting a search of a given area, and documenting the evidence and search, with no more than one instructor assist.
- 4-19 Trainee, when given the appropriate equipment, shall correctly demonstrate conducting a low angle raise using a simple hauling system incorporating a 2:1 and 3:1 hauling operation to include a visual safety check, a pre-hauling load test of all systems with verbal confirmation acknowledged by all rescue personnel, and the use of appropriate commands, with no instructor assists.
- 4-20 Trainee, when given the appropriate equipment, shall correctly demonstrate constructing a vertical lowering system using a Stokes Basket, rescue knot, appropriate lifelines, edge protection devices, and necessary auxiliary rope rescue equipment, with no instructor assists.
- 4-21 Trainee, when given the appropriate equipment, shall correctly construct a belay system designed to arrest the fall of a load in the event of a failure of a primary lowering operation and demonstrate the safe activation of the belay system, with no instructor assists.
- 4-22 Trainee, when given the appropriate equipment, shall correctly demonstrate conducting a vertical lowering operation to include a visual safety check, a pre-lowering load test of all systems with verbal confirmation acknowledged by all rescue personnel, and the use of appropriate commands, and utilization of a belay system during the operation, with no instructor assists.

2. **Curriculum for Wilderness Rescue Technician I – Phase 2**

SECTION 5 WILDERNESS SURVIVAL – 6 HOURS

- 5-01 Trainee shall correctly identify various types of emergency shelter and the environments conducive for each.
- 5-02 Trainee shall demonstrate how to construct an emergency shelter using only natural resources and equipment carried in the 24-hour pack, with no more than one instructor assist.
- 5-03 Trainee shall demonstrate how to build and extinguish a small fire, so that safety is maintained, with no instructor assists.
- 5-04 Trainee shall correctly identify how to identify sources of water that can be used for human consumption in a wilderness environment.
- 5-05 Trainee shall correctly identify how to identify sources of water that should not be used for human consumption in a wilderness environment.
- 5-06 Trainee shall correctly identify the various methods and tools for purifying water for human consumption.
- 5-07 Trainee shall correctly identify possible sources of food that can be used for human consumption in a wilderness environment.
- 5-08 Trainee shall correctly identify common sources of food that should not be used for human consumption in a wilderness environment.
- 5-09 Trainee shall correctly identify the various methods and tools for preparing natural sources of food for human consumption.

SECTION 6 ESTABLISHMENT OF SPECIALIZED RESOURCES NEED – 2 HOURS

- 6-01 Trainee shall correctly identify how to determine what specialized resources are needed for given search and rescue incidents.
- 6-02 Trainee shall correctly identify how to identify when a specialized resource should be used so that efficiency of the operation is maximized.
- 6-03 Trainee shall correctly identify when and where helicopter landing zones may be established so that safety is a priority.

SECTION 7 VICTIM LOCATION – 8 HOURS

- 7-01 Trainee, working as a member of a team, shall demonstrate how to conduct a search using the route search technique and locate a victim, identifying clues and documentation actions, in an area between 4-10 acres, with no more than one instructor assist.
- 7-02 Trainee, working as a member of a team, shall demonstrate how to conduct a search using the area search technique and locate a victim, identifying clues and documentation actions, in an area between 4-10 acres, with no more than one instructor assist.

SECTION 8 VICTIM MANAGEMENT – 6 HOURS

- 8-01 Trainee shall correctly identify aspects of victim behaviors and management.
- 8-02 Trainee, given a simulated incident with physical injuries, shall demonstrate how to apply first aid and manage a victim, with no more than one instructor assist.
- 8-03 Trainee, given a simulated incident with physical and mental limitations, shall demonstrate how manage an elderly victim, with no more than one instructor assist.

SECTION 9 VICTIM MOVEMENT – 18 HOURS

- 9-01 Trainee, working as a team member, shall demonstrate how to package a patient in a stokes basket or backboard device, so that the victim is secured for movement and further injuries are mitigated against, with no more than one instructor assist.
- 9-02 Trainee, working as a team member, shall demonstrate moving a victim up and down a low-angle environment, using rope rescue equipment, with no more than one instructor assist.
- 9-03 Trainee, working as a team member, shall demonstrate moving a victim up and down a high-angle environment of at least 10 feet, using rope rescue equipment, with no more than one instructor assist.
- 9-04 Trainee, working as a team member, shall demonstrate moving a victim .25 miles using only human power, over typical terrain, ensuring victim and rescuer safety is maintained, with no more than one instructor assist.

3. Curriculum for Wilderness Rescue Technician II

SECTION 1 VICTIM PROFILE DEVELOPMENT – 8 HOURS

- 1-01 Trainee shall correctly identify the various common types of physical and/or psychological conditions that influence the development of a victim profile.
- 1-02 Trainee shall correctly identify the various methods to use and to avoid when interviewing witnesses and family members.
- 1-03 Trainee shall correctly identify how analysis of collected evidence may impact the development of a victim profile.
- 1-04 Trainee, given a simulated wilderness search and rescue (SAR) incident, shall develop a victim profile, using collected evidence and interviews, with no more than one instructor assist.

SECTION 2 WILDERNESS RESCUE INCIDENT PLAN DEVELOPMENT – 8 HOURS

- 2-01 Trainee shall correctly identify the various common errors made in unsuccessful SAR operations.
- 2-02 Trainee shall correctly identify how the ICS is typically established for a small scale incident (one missing person)
- 2-03 Trainee shall correctly identify how the ICS is typically established for a long-term, medium scale incident (2-5 missing persons).
- 2-04 Trainee shall correctly identify the effective use of SAR resources.
- 2-05 Trainee shall correctly identify objectives, tactics and strategies to effectively conduct a wilderness SAR incident response.
- 2-06 Trainee shall correctly identify factors involved in contributing to response personnel stress and how that impacts the mission.
- 2-07 Trainee shall correctly identify factors that contribute to the safety of the response to the wilderness SAR incident to both response personnel and victims.
- 2-08 Trainee shall correctly identify factors involved in establishing operational periods and shift assignments.
- 2-09 Trainee shall correctly identify involved in determining communications requirements both on-site and to county/state agencies.
- 2-10 Trainee shall correctly identify the factors involved in establishing the Incident Command Post and Incident facilities.
- 2-11 Trainee shall correctly identify the common forms used to document a wilderness SAR incident.
- 2-12 Trainee, given a simulated table top incident, shall demonstrate establishing and maintaining the documentation system for a wilderness SAR incident.

SECTION 3 TEAM MANAGEMENT AND DIRECTION – 16 HOURS

- 3-01** Trainee, given a simulated table top incident, shall demonstrate how to establish the ICS, to include personnel assignments, communications, location of facilities and safety considerations.
- 3-02** Trainee, given a simulated table top incident of a large-scale or long-term incident, shall demonstrate how to establish the ICS, to include personnel assignments, communications, location of facilities and safety considerations.
- 3-03** Trainee, working as a team on a small-scale table-top, simulated wilderness SAR incident, shall demonstrate the ability to function as an Incident Commander.
- 3-04** Trainee, working as a team on a small-scale table-top, simulated wilderness SAR incident, shall demonstrate the ability to function as an Operations Section Chief.
- 3-05** Trainee, working as a team on a small-scale table-top, simulated wilderness SAR incident, shall demonstrate the ability to function as Logistics Section Chief.
- 3-06** Trainee, working as a team on a large-scale, long-term table-top, simulated wilderness SAR incident, shall demonstrate the ability to function as a member of the ICS staff.

XIV. MINIMUM STANDARDS FOR ROPE RESCUE TECHNICIAN CERTIFICATION

This program is designed to provide specialty certification and training for Volunteer Firefighters, Volunteer Search & Rescue Technicians, Volunteer Emergency Medical Technicians and others as the Board may determine.

Technical Search & Rescue Personnel who have received training prior to passage of this program may, upon providing proof to a Board member and receiving approval, apply the training hours for certification. Any training hours earned prior to July 1, 2008 must be approved by the Board.

A. Reference Materials

The jurisdictional entity in which the Technical Rescue Personnel serves must have access to the following reference materials:

NFPA

NFPA 1006: Standard for Technical Rescuer Professional Qualifications, ed. 2008

NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents, ed. 2004

IFSTA

Fire Service Search and Rescue, 7th Ed. (2005)

Principles of Vehicle Extrication, 2nd Ed. (2000)

Technical Rescue for Structural Collapse, North American Version, 1st Ed. (2003)

Other

Jurisdictionally developed codes and protocols

D. The Certification Program offers two levels of Rope Rescue Technician Certification:

1. Rope Rescue Technician I

- a. Applicants must complete both of the following:
 - i. Technical Rescue Apprentice coursework
 - ii. SFFMA Rope Rescue Technician I coursework
- b. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- c. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

2. Rope Rescue Technician II

- a. Applicants must complete all of the following:
 - i. SFFMA Rope Rescue Technician I coursework
 - ii. SFFMA Rope Rescue Technician II coursework
- b. Upon meeting all requirements, an application should be completed, signed by the applicant, Certification Coordinator, and Fire Chief and sent to the Austin office, accompanied by the twenty dollar (\$20.00) application processing fee.
- c. Upon review the Austin office will issue the appropriate certificate and, upon request, a shoulder patch. A permanent record of the certification will be maintained in the Austin office.

E. Training Requirements

ROPE RESCUE TECHNICIAN I		
SECTION	SUBJECT	HOURS
1	Site Operations	4
2	Anchor Systems	12
3	Rope Ascent and Descent	2
4	Victim Transport	8
5	Highline Systems	14
TOTAL RECOMMENDED HOURS		40
ROPE RESCUE TECHNICIAN I		
SECTION	SUBJECT	HOURS
1	High Angle Operations	20
2	Highline Systems	20
TOTAL RECOMMENDED HOURS		40

* The recommended hours for skills evaluation is based on 12 students. Actual hours needed depends on the number of students, the number of examiners, availability of equipment, and the student skill level

9. Curriculum for Rope Rescue Technician I

SECTION 1 SITE OPERATIONS – 4 HOURS

- 1-01 Trainee shall correctly describe the necessary elements of successful pre-planning as they relate to rope rescue incidents.
- 1-02 Trainee shall correctly describe the factors that rescuers must know to effectively perform a scene size-up involving rope rescue incidents.
- 1-03 Trainee shall correctly describe the necessary elements for implementing an on-scene operational plan or incident action plan (IAP) associated with incidents involving rope rescue operations.
- 1-04 Trainee shall correctly describe the types of hazards and their consequences for rescuers that need to be included in a hazards assessment associated with incidents involving rope rescue operations.
- 1-05 Trainee shall correctly describe the responsibilities of command and the primary functions of command associated with incidents involving rope rescue operations.
- 1-06 Trainee shall correctly describe the design and purpose of the various types of mechanical advantage systems (MAS).
- 1-07 Trainee shall correctly identify and describe the function of various types of rope grab systems when incorporated into a mechanical advantage system.
- 1-08 Trainee shall correctly identify various consensus standards related to rope rescue and how each standard addresses rope usage for various environments like fire and rescue, industry, and recreational.
- 1-09 Trainee shall correctly identify physical stresses put on a rescuer during rope rescue incidents.
- 1-10 Trainee shall correctly identify personal protective garments and accessory gear recommended for wear at rope rescue incidents.
- 1-11 Trainee shall correctly identify and demonstrate the use of different types of safety harnesses considered to be part of the rescuer's PPE list.
- 1-12 Trainee shall correctly identify guidelines established by NFPA and OSHA standards for the safe use of ropes and related rope rescue equipment.
- 1-13 Trainee shall correctly identify and describe the function of software equipment used for rope rescue operations.
- 1-14 Trainee shall correctly identify and describe the function of hardware equipment used for rope rescue operations.
- 1-15 Trainee shall correctly identify rescue considerations for each phase of the high- or low-angle rescue incident.

SECTION 2 ANCHOR SYSTEMS – 12 HOURS

- 2-01 Trainee, given the proper equipment, shall correctly identify and demonstrate the construction of various types of anchor systems used in the rescue environment, with no instructor assists.
- 2-02 Trainee, given the proper equipment, shall correctly construct a two-point and three-point **load sharing** anchor system used in the rescue environment, with no instructor assists.
- 2-03 Trainee, given the proper equipment, shall correctly construct a two-point and three-point **load distributing** anchor system used in the rescue environment, with no instructor assists.
- 2-04 Trainee, given the proper equipment, shall correctly demonstrate constructing a multiple-point anchor system used in the rescue environment, with no instructor assists.
- 2-05 Trainee, given the proper equipment, shall correctly demonstrate constructing a compound rope mechanical advantage system used in the rescue environment, with no instructor assists.
- 2-06 Trainee, given the proper equipment, shall correctly demonstrate constructing a fixed-rope system used in the rescue environment with no instructor assists.
- 2-07 Trainee, given the proper equipment, shall correctly demonstrate the operation of a compound rope mechanical advantage system in a high-angle rescue environment, with no instructor assists.

SECTION 3 ROPE ASCENT AND DESCENT – 2 HOURS

- 3-01 Trainee, given the proper equipment, shall correctly ascend a fixed rope a minimum of 20 feet in a high-angle rescue environment, with no instructor assists.
- 3-02 Trainee, given the proper equipment, shall correctly descend a fixed rope a minimum of 20 feet in a high-angle rescue environment, with no instructor assists.
- 3-03 Trainee, given the proper equipment, shall correctly complete an assignment while suspended from a rescue system in a high-angle rescue environment, with no instructor assists.

SECTION 4 VICTIM TRANSPORT – 8 HOURS

- 4-01 Trainee shall correctly identify and demonstrate the construction of various types of lifting systems using timbers for the purpose of moving victims during rope rescue incidents.
- 4-02 Trainee shall correctly identify and demonstrate the construction of various types of lifting systems using ladders for the purpose of moving victims during rope rescue incidents.
- 4-03 Trainee shall correctly move a victim in a high-angle rescue environment, with no instructor assists.
- 4-04 Trainee, given the appropriate equipment, shall function as a litter tender in a high-angle lowering or hauling rescue operation, with no instructor assists.
- 4-05 Trainee, given the appropriate equipment, shall correctly direct a team in the removal of a simulated victim suspended from rope or webbing in a high-angle rescue environment, with no instructor assists.
- 4-06 Trainee, given the appropriate equipment, working as a member of a team, and following local medical protocols, shall correctly discuss the considerations and goals regarding assessing, stabilizing and packaging a patient for safe removal from a rope rescue incident.
- 4-07 Trainee, given the appropriate equipment and working as a member of a team, shall correctly demonstrate safe and efficient rope rescue methods for gaining access to a patient, and removing the patient from various rope rescue incidents.
- 4-08 Trainee, given the appropriate equipment, shall correctly identify and describe the function of various types of litters, and demonstrate packaging a patient in a particular litter.
- 4-09 Trainee, given the appropriate equipment, shall correctly identify, describe, and demonstrate rigging a litter and a system to perform a vertical lower and raise, with and without an attendant.
- 4-10 Trainee, given the appropriate equipment, shall correctly identify, describe, and demonstrate rigging a litter and a system to perform a horizontal lower and raise, with and without an attendant.

SECTION 5 HIGHLINE SYSTEMS – 14 HOURS

- 5-01 Trainee shall correctly identify the minimum specifications and requirements for setting up a highline system.
- 5-02 Trainee, given the appropriate equipment, shall correctly describe and demonstrate rigging various simple technical advantage systems with rope grab systems used by the AHJ, with no instructor assists.
- 5-03 Trainee, given the appropriate equipment, shall correctly describe and demonstrate rigging various compound mechanical advantage systems with rope grab systems used by the AHJ, with no instructor assists.
- 5-04 Trainee, given the appropriate equipment, shall direct a team in the construction of a highline system, with no instructor assists.
- 5-05 Trainee, given the appropriate equipment, shall direct a team in the operation of a highline system, with no instructor assists.
- 5-06 Trainee, given the appropriate equipment, shall correctly demonstrate setting up a horizontal highline system and executing a rescue operation, with no instructor assists.
- 5-07 Trainee, given the appropriate equipment, shall correctly demonstrate setting up a sloped or steep highline system and executing a rescue operation, with no instructor assists.

11. Curriculum for Rope Rescue Technician II

SECTION 1 HIGH ANGLE OPERATIONS – 20 HOURS

- 1-01 Trainee, given the appropriate equipment and working as a member of a team, shall correctly demonstrate completing an assignment while suspended from a rope system, with a height of at least 20 feet, with no more than one instructor assist.
- 1-02 Trainee, given the appropriate equipment and working as a member of a team, shall correctly demonstrate moving a simulated victim that is suspended from a rope system, with a height of at least 20 feet, with no more than one instructor assist.
- 1-03 Trainee, given the appropriate equipment and working as a litter tender, shall correctly demonstrate raising and lowering a simulated victim suspended from a rope system, with a height of at least 20 feet, with no more than one instructor assist.

SECTION 2 HIGHLINE SYSTEMS – 20 HOURS

- 2-01 Trainee shall correctly identify the minimum specifications and requirements for setting up a highline system, including personnel assignments, safety concerns and how to calculate load requirements.
- 2-02 Trainee, given the appropriate equipment and working as a member of a team, shall correctly demonstrate directing the team to set up a highline system over a span of at least 20', so that safety and load factors are maintained.

XV. MINIMUM STANDARDS FOR VEHICLE EXTRICATION TECHNICIAN PERSONNEL

A. Participating Requirements

1. Vehicle Extrication Technician I applicant must complete the following objectives from the firefighter certification curriculum prior to application:

SECTION	SUBJECT	LEVEL	OBJECTIVES
1	Fire Department Organization	Basic	1-01.01 – 1-01.04
1	Fire Department Organization	Intermediate	1-02.01 – 1-02.05
10	First Aid	Basic	10-01.01 – 10-01.35
22	First Aid	Basic	22-01.01 A – H
22	Live Fire Training	Intermediate	22-02.01 E

2. Applicants for Vehicle Extrication Technician II must hold the following SFFMA certification:
 - i. Vehicle Extrication Technician I
3. Applicants for Vehicle Extrication Technician III must hold the following SFFMA certification:
 - i. Vehicle Extrication Technician II

B. The Certification Program offers three (3) levels of Vehicle Extrication Technician Certification:

LEVEL	HOURS
Vehicle Extrication Technician I	12
Vehicle Extrication Technician II	12
Vehicle Extrication Technician III	24

D. Curriculum for Vehicle Extrication Technician

VEHICLE EXTRICATION TECHNICIAN I - 12 HOURS

- 1-01 Trainee shall be able to describe the minimum personal protective equipment needed for vehicle extrication operations in their department.
- 1-02 Trainee, given descriptions of accident scenes, shall determine whether extrication or patient removal is needed.
- 1-03 Trainee shall describe the following as they apply to motor vehicle accidents:
 - A. Common hazards found
 - B. Methods for mitigating those common hazards
 - C. Methods of recognizing alternative fueled and hybrid vehicles
 - D. Hazards associated with alternative fueled and hybrid vehicles
- 1-04 Trainee shall be able to:
 - A. Define vehicle stabilization
 - B. Describe different methods of vehicle stabilization using equipment that is available in their department
 - C. Describe other methods of vehicle stabilization using on scene and commercially available items
 - D. Demonstrate single vehicle stabilization using items readily available to their department
- 1-05 Trainee shall be able to describe the techniques and safety procedures in determining:
 - A. The best route to access patient
 - B. Alternative routes to access patient
- 1-06 Trainee shall be able to demonstrate the techniques and safety procedures for accessing a patient involved in a motor vehicle accident:
 - A. From the driver’s position in the vehicle
 - B. From the front seat passenger’s position in the vehicle
 - C. From the rear seat of a two-door vehicle
 - D. From the rear seat of a four-door vehicle
- 1-07 Trainee, given descriptions of accident scenes, shall describe procedures for gaining access to patients:

A. In closed upright vehicles	D. Pinned inside vehicle
B. In closed overturned vehicles	E. In vehicle with electrical hazards
C. Pinned beneath vehicle	
- 1-08 Trainee shall demonstrate the use of the following rescue tools:
 - A. Cribbing and shoring material
 - B. Hydraulic devices
 - C. Pneumatic devices
- 1-09 Trainee, operating as a member of a team, shall demonstrate the proper techniques and safety procedures to perform a patient rescue as they apply to a motor vehicle accident.
- 1-10 Trainee shall assume command of a simulated rescue operation in the absence of a company officer.

VEHICLE EXTRICATION TECHNICIAN II – 12 HOURS

- 2-01 Trainee shall describe the direct current voltages found in hybrid vehicles, their dangers and how to work around them.
- 2-02 Trainee shall describe the function of pre-tensioning systems, their dangers and how to work around them.
- 2-03 Trainee shall describe the function of supplemental restraint systems for all seating locations in a vehicle, their dangers and how to work around them.
- A. Automobiles
 - B. Light trucks
 - C. Taxis
 - D. Buses
 - E. Semi-trailer trucks
 - F. Emergency vehicles
- 2-04 Trainee, given descriptions of accident scenes, shall describe procedures for determining operational priorities at multiple vehicle accidents.
- 2-05 Trainee, given descriptions of accident scenes, shall describe procedures for stabilizing the following vehicles:
- A. Automobiles
 - B. Light trucks
 - C. Taxis
 - D. Buses
 - E. Semi-trailer trucks
 - F. Emergency vehicles
- 2-06 Trainee shall stabilize the following vehicles:
- A. Automobiles
 - B. Light trucks
 - C. Taxis
 - D. Buses
 - E. Semi-trailer trucks
 - F. Emergency vehicles
- 2-07 Trainee, given descriptions of accident scenes, shall describe procedures for stabilizing multiple vehicle accidents:
- A. Using cribbing
 - B. Using commercial stabilization systems
 - C. Using wreckers and cranes
- 2-08 Trainee shall stabilize multiple vehicle accident scenarios:
- A. Using cribbing
 - B. Using commercial stabilization systems
 - C. Using wreckers and/or cranes
- 2-09 Trainee shall assume command of a simulated multiple-vehicle rescue operation in the absence of a company officer.

VEHICLE EXTRICATION TECHNICIAN III – 24 HOURS

- 3-01 Trainee, given descriptions of accident scenes shall describe hazards to be expected and prioritize rescue actions for the following scenarios:
- A. Above roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
 - B. Below roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
 - C. Underwater
 - 1. Partial submersion (5' or less water depth)
 - 2. Full submersion (over 5' water depth)
 - D. Public transportation
 - 1. Taxis
 - 2. School buses
 - 3. Public buses
 - E. Large vehicle
 - 1. Semi-trailer truck
 - 2. Emergency vehicle
 - 3. Construction equipment
 - a. Dump truck
 - b. Bulldozer
 - c. Road grader
 - 4. Agriculture equipment
 - a. Tractors
 - b. Vehicle pulling trailer

3-02 Trainee, operating as a member of a team, shall demonstrate the proper techniques and safety procedures to stabilize the following scenarios:

- A. Above roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
- B. Below roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
- C. Underwater
 - 1. Partial submersion (5' or less water depth)
 - 2. Full submersion (over 5' water depth)
- D. Public transportation
 - 1. Taxis
 - 2. School buses
 - 3. Public buses
- E. Large vehicle
 - 1. Semi-trailer truck
 - 2. Emergency vehicle
 - 3. Construction equipment
 - a. Dump truck
 - b. Bulldozer
 - c. Road grader
 - 4. Agriculture equipment
 - a. Tractors
 - b. Vehicle pulling trailer

3-03 Trainee, operating as a member of a team, shall demonstrate the proper techniques and safety procedures to provide patient removal access for the following scenarios:

- A. Above roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
- B. Below roadway
 - 1. Single vehicle
 - 2. Multiple vehicles
- C. Underwater
 - 1. Partial submersion, 5' or less water depth
 - 2. Full submersion, over 5' water depth
- D. Public transportation
 - 1. Taxi
 - 2. School bus
 - 3. Public bus
- E. Large vehicle
 - 1. Semi-trailer truck
 - 2. Emergency vehicle
 - 3. Construction equipment
 - a. Dump truck
 - b. Bulldozer
 - c. Road grader
 - 4. Agriculture equipment
 - a. Tractors
 - b. Vehicle pulling trailer

3-04 The firefighter shall assume command of a simulated multiple vehicle rescue operation in the absence of a company officer.