



New Jersey Division of Fire Safety

Plan of Instruction

Instructor Guide

Goal

To acquaint the instructor with the scope and format of the course, and other pertinent information required to deliver a course that meets the learning objectives, engages the participants, and prepares each participant for Airport Fire Fighter certification.

Instructor Information

Welcome to the Aircraft Rescue and Fire Fighting course. This course is designed to prepare the student for the Airport Fire Fighter certification process. The course can also be used, in whole or part, as refresher training. As the course instructor, you have an essential role in ensuring the success of the training experience for each participant. This Plan of Instruction (POI) is intended to provide you with the background information required to be successful in your role as the instructor.

The POI reflects the requirements and information provided in the curriculum. It is your responsibility to make any needed revisions based on the requirements of your organization or the authority having jurisdiction. In addition, it is your responsibility to revise the student course syllabus as needed to match the POI.

You are strongly encouraged to review all the information in this plan of instruction, the instructor lesson plans, and any supplemental materials prior to delivering the course. In addition, you should read the text so that you are familiar with all the content that is going to be presented.

General information about the course is provided below.

- This course is based on the content in the IFSTA manual *Aircraft Rescue and Fire Fighting, 6th Edition*.
- The course meets or exceeds the requirements of the National Fire Protection Association® (NFPA®) 2015 edition of the professional qualifications standard 1003, *Standard for Airport Fire Fighter Professional Qualifications* for Airport Fire Fighter certification. Additional material addresses airport fire fighting apparatus requirements covered in Chapter 9 of the 2014 edition of 1002, *Standard on Fire Apparatus Driver/Operator Professional Qualifications*. By completing all of the lessons the student should be prepared for the Airport Fire Fighter certification process.
- The course evaluation strategy includes a quiz and test for each chapter in the course. In addition, Chapter 12 has five learning activity sheets that can be used to evaluate students' cognitive performance. Chapters 6, 8, 9, and 10 also include skill sheets that can be used to evaluate students' skills performance.
- A student Exam Prep is available which provides additional review of the course content. All the questions in the Exam Prep are multiple choice, similar to the questions used in certification exams. The Exam Prep is available in a print version, an electronic version, and as an app for Apple or Android devices.

Scope Statement

This course addresses the requirements of the NFPA® 1003, 2015 edition, *Standard for Airport Fire Fighter Professional Qualifications*, as well as Chapter 9 of NFPA® 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*.

The target audience includes, but is not limited to:

- Fire Service
- First Responders
- Industrial First Responders

Course Description

This is an 10 day, 80-hour course: 80 hours of instruction and 8 hours of certification testing. The course is designed to prepare students to successfully complete certification as an Airport Fire Fighter.

Course Outline

The following is the instructional overview (course outline) for the course. As mentioned previously, the course is delivered in 10 full-day sessions based on the scheduling needs of the sponsoring organization. In addition, 1 day is scheduled for the certification testing process.

In addition to the information in the course outline, the instructor should cover and discuss information given in tables in the manual.

The times listed include the time required to administer a quiz and test for each chapter and time for breaks. The times are suggested times only. **The actual instructional times will depend on the experience of the students, the needs of the organization, and the instructional approach taken by the sponsoring agency.** Required instructional times may, in some instances, be significantly less than or greater than listed in the lesson plan.

<u>Chapter</u>	Chapter Title	Suggested Time	Text Reference	Learning Activities or Skill Sheets
1	Qualifications for Aircraft Rescue and Fire Fighting Personnel	8 hours	10-35	
2	Airport Familiarization	8 hours	36-70	
3	Aircraft Familiarization	16 hours	72-135	
4	Safety and Aircraft Hazards	16 hours	136-189	
5	Communications	4 hours	190-210	
6	Rescue	12 hours	212-275	Skill Sheet 6-1through 6-8
7	Extinguishing Agents	8 hours	276-310	
8	Apparatus	8 hours	312-352	Skill Sheet 8-1through 8-3
9	Fire Suppression, Ventilation, and Overhaul	8 hours	354-393	Skill Sheet 9-1through 9-7
10	Driver/Operator	20 hours	394-473	Skill Sheet 10-1through 10-13
11	Airport Emergency Planning	16 hours	474-515	
12	Strategic and Tactical Operations	24 hours	516-574	Learning Activity 12-1 through 12-5

Course Schedule

The following course schedule is recommended for a course which includes Chapters 1-12.

	Training Day 1	Training Day 2	Training Day 3	Training Day 4	Training Day 5
AM	Ch. 1	Ch. 2	Ch. 3.	Ch. 3 cont.	Ch. 4
PM	Ch. 1	Ch. 2	Ch. 3	Ch. 3	Ch. 4
	Training Day 6	Training Day 7	Training Day 8	Training Day 9	Training Day 10
AM	Ch. 4 cont.	Ch. 5	Ch. 6 cont.	Ch. 7	Ch. 8 cont.
PM	Ch. 4	Ch. 6	Ch. 6	Ch. 7	Ch. 8
	Training Day 11	Training Day 12	Training Day 13	Training Day 14	Training Day 15
AM	Ch. 9	Ch. 10	Ch. 10 cont.	Ch. 10 cont.	Ch. 11
PM	Ch. 9	Ch. 10	Ch. 10	Ch. 11	Ch. 11
	Training Day 6	Training Day 7	Training Day 8	Training Day 9	Training Day 10
AM	Ch. 11	Ch. 12 cont.	Ch. 12 cont.	Ch. 12 cont.	Certification Testing
PM	Ch. 12	Ch. 12	Ch. 12		Certification Testing

Learning Objectives

This course is designed to meet the learning objectives/performance objectives specified by NFPA® 1003 and Chapter 9 of NFPA® 1002. Those objectives are listed on the following pages. Beginning on page 12, a matrix is provided which correlates the learning objectives and the chapter(s) in the course.

Course Learning Objectives

Chapter 1

1. Explain the mission of ARFF personnel. *[NFPA® 1003, 4.1.1.1]*
2. Describe the history of Aircraft Rescue and Fire Fighting.
3. Identify organizations that deal with air transportation.
4. Identify roles and responsibilities of ARFF team members. *[NFPA® 1003, 4.1.1.1, 4.1.1.2]*
5. Identify elements of ARFF training programs.

Chapter 2

1. Describe airport familiarization training. *[NFPA® 1003, 4.2.1, 4.2.2, 4.2.3]*
2. Explain different airport types and classifications. *[NFPA® 1003, 4.2.1, 4.2.2, 4.2.3]*
3. Compare the different legs of a typical traffic pattern. *[NFPA® 1003, 4.2.1]*
4. Recognize systems used to designate runways and taxiways. *[NFPA® 1003, 4.2.1, 4.2.2, 4.2.3]*
5. Identify airport markings, lighting, and signage. *[NFPA® 1003, 4.2.1, 4.2.2, 4.2.3]*
6. Determine the impact of airport design on ARFF responses. *[NFPA® 1003, 4.1.1.3, 4.2.1]*
7. Explain the importance of a central location for airport fire stations. *[NFPA® 1003, 4.2.1]*

Chapter 3

1. Identify types of aircraft. *[NFPA® 1003, 4.1.1.3, 4.2.2, 4.3.4, 4.4.1]*
2. Describe the major components of fixed-wing and rotary-wing aircraft. *[NFPA® 1003, 4.1.1.3, 4.4.1]*
3. Identify types of and hazards associated with various aircraft engines. *[NFPA® 1003, 4.1.1.3, 4.4.1]*
4. Explain aircraft construction, structural materials, and hazards as they relate to ARFF training and operations. *[NFPA® 1003, 4.1.1.3, 4.3.6, 4.3.7, 4.4.1]*
5. Describe potential aircraft system hazards that firefighters may encounter. *[NFPA® 1003, 4.1.1.3, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.4.1]*

Chapter 4

1. Identify components of an airport safety program. *[NFPA® 1003, 4.2.4]*
2. Recognize the importance of firefighter safety as it relates to aircraft fire fighting. *[NFPA® 1003, 4.1.1.3, 4.2.4, 4.4.1, 4.4.2]*
3. Describe the various types of personal protective equipment with which ARFF firefighters are equipped. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.3.10, 4.4.1, 4.4.2, 4.4.3]*
4. Discuss the different types of hazards associated with aircraft emergencies. *[NFPA® 1003, 4.1.1.3, 4.2.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.4.1, 4.4.2]*
5. Identify special hazards of military aircraft. *[NFPA® 1003, 4.1.1.3, 4.2.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.4.1, 4.4.2]*
6. Identify indications of a possible terrorist incident. *[NFPA® 1003, 4.2.4]*

Chapter 5

1. Describe types of airport alerts. *[NFPA® 1003, 4.2.2, 4.2.3]*
2. Explain the functions of an Emergency Operations Center and Mobile Command Posts. *[NFPA® 1003, 4.2.2, 4.2.3]*
3. Identify airport communication systems. *[NFPA® 1003, 4.2.2, 4.2.3]*
4. Describe airport communication procedures. *[NFPA® 1003, 4.2.2, 4.2.3]*
5. Explain light and hand signals used in ARFF communications. *[NFPA® 1003, 4.2.2, 4.2.3]*

Chapter 6

1. Recognize safety considerations for the use of ARFF rescue tools and equipment. *[NFPA® 1003, 4.3.7, 4.4.1, 4.4.2]*
2. Identify tools and equipment used in ARFF rescue operations. *[NFPA® 1003, 4.3.7, 4.4.1, 4.4.2]*
3. Describe procedures for ARFF rescue in various environments. *[NFPA® 1003 4.3.2, 4.4.2]*
4. Describe tactics for ARFF rescue operations. *[NFPA® 1003, 4.4.2]*
5. Identify procedures for accessing the interior of an aircraft. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.4, 4.3.7, 4.4.1]*
6. Explain ways to safely and shut down an aircraft. *[NFPA® 1003 4.1.1.4, 4.3.5, 4.4.1]*
7. Describe the components of victim rescue in an ARFF response. *[NFPA® 1003 4.4.2, 4.4.3]*
8. Stabilize an aircraft using webbing, ropes, chains or a come-along (cable winch). *[NFPA® 1003, 4.4.1, 4.4.2; Skill Sheet 6-1]*
9. Deploy an air stairs unit (aircraft passenger stairs). *[NFPA® 1003, 4.4.1; Skill Sheet 6-2]*
10. Open aircraft doors and hatches. *[NFPA® 1003, 4.3.7; Skill Sheet 6-3]*
11. Cut an access opening in the skin of an aircraft (power saw). *[NFPA® 1003, 4.4.1, 4.4.2; Skill Sheet 6-4]*
12. Use hydraulic tools (cutters and/or spreaders) to open a hole in the side of an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2; Skill Sheet 6-5]*
13. Perform operations to safely and shut down an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2; Skill Sheet 6-6]*
14. Demonstrate the procedure for conducting a primary search of an aircraft after self-evacuation. *[NFPA® 1003, 4.4.2; Skill Sheet 6-7]*
15. Use a hydraulic device to remove a seat from an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2; Skill Sheet 6-8]*

Chapter 7

1. Explain the use of primary and complementary extinguishing agents in ARFF operations. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
2. Describe the use of water as an extinguishing agent in ARFF operations. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
3. Explain the principles of foam used to combat aircraft and fuel fires. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
4. Identify categories and characteristics of foam concentrates. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
5. Explain how foam is proportioned. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10]*
6. Identify various devices used for foam application. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
7. Describe types of dry chemicals and their applications in ARFF operations. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6]*
8. Describe types of clean agents and their applications in ARFF operations. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.3, 4.3.4, 4.3.5, 4.3.6]*
9. Explain methods of conserving and resupplying extinguishing agents used in ARFF responses. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8]*

Chapter 8

1. Explain how to determine the number and appropriate types of ARFF apparatus required at an airport.
2. Describe the various types and capabilities of ARFF apparatus. *[NFPA® 1003, 4.3.2]*
3. Identify the features and options included on ARFF apparatus.
4. Describe types of fire suppression equipment found on ARFF apparatus. *[NFPA 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10]*
5. Identify methods of resupplying extinguishing agent to an ARFF apparatus. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.8]*
6. Explain procedures for ARFF apparatus maintenance.
7. Resupply an ARFF vehicle with water. *[NFPA® 1003, 4.3.8; Skill Sheet 8-1]*
8. Resupply an ARFF vehicle with foam. *[NFPA® 1003, 4.3.8; Skill Sheet 8-2]*
9. Resupply an ARFF vehicle with dry chemical agent. *[NFPA® 1003, 4.3.8; Skill Sheet 8-3]*

Chapter 9

1. Identify fire suppression techniques. *[NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.10, 4.4.1]*
2. Describe methods of ventilation in an aircraft fire. *[NFPA® 1003, 4.3.7]*
3. Describe overhaul operations after an aircraft incident/accident. *[NFPA® 1003, 4.3.10]*
4. Explain the importance of evidence preservation during overhaul operations. *[NFPA® 1003, 4.3.9]*
5. Secure fuel sources. *[NFPA® 1003, 4.3.3, 4.4.2; Skill Sheet 9-1]*
6. Extinguish a fuel spill using an ARFF vehicle turret. *[NFPA® 1003, 4.3.2, 4.3.9, 4.3.10; Skill Sheet 9-2]*
7. Deploy and operate an ARFF vehicle handline to extinguish a fuel spill fire. *[NFPA® 1003, 4.3.1, 4.3.9, 4.3.10; Skill Sheet 9-3]*
8. Extinguish a three-dimensional fuel fire with handline(s). *[NFPA® 1003, 4.3.3, 4.3.9, 4.3.10; Skill Sheet 9-4]*
9. Attack an interior fire. *[NFPA® 1003, 4.3.4, 4.3.7, 4.3.9, 4.3.10; Skill Sheet 9-5]*
10. Extinguish an APU/EPU or engine fire. *[NFPA® 1003, 4.3.5, 4.3.9, 4.3.10; Skill Sheet 9-6]*
11. Extinguish a wheel assembly fire with a handline. *[NFPA® 1003, 4.3.6, 4.3.9, 4.3.10; Skill Sheet 9-7]*

Chapter 10

1. Identify components of an ARFF driver/operator training program. *[NFPA® 1002, 9.1.2, 9.1.3]*
2. Describe routine inspection, testing, and service procedures for ARFF vehicles. *[NFPA® 1002, 9.1.1]*
3. Identify the principles of safe vehicle operation. *[NFPA® 1002, 9.1.2, 9.1.3, NFPA® 1003, 4.1.1.3, 4.1.1.4, 4.2.1, 4.2.4]*
4. Explain ARFF vehicle operational considerations in various environments. *[NFPA® 1002, 9.2.1, 9.2.2, 9.2.3; NFPA® 1003 4.1.1.3, 4.1.1.4, 4.2.1, 4.2.4]*
5. Describe agent systems and discharge. *[NFPA® 1002, 9.2.2, 9.2.3; NFPA® 1003 4.1.1.3, 4.1.1.4, 4.2.4, 4.3.2, 4.3.3, 4.3.5]*
6. Explain agent resupply of ARFF vehicles. *[NFPA® 1002, 9.1.1; NFPA® 1003, 4.3.8]*
7. Perform a routine walk-around maintenance inspection of an ARFF apparatus. *[NFPA® 1002, 9.1.1; Skill Sheet 10-1]*
8. Perform an engine compartment inspection and routine preventative maintenance of an ARFF apparatus. *[NFPA® 1002, 9.1.1; Skill Sheet 10-2]*

9. Perform an in-cab operational inspection of an ARFF apparatus. *[NFPA® 1002, 9.1.1; Skill Sheet 10-3]*
10. Start, idle, and shut down an ARFF apparatus. *[NFPA® 1002, 9.1.2; Skill Sheet 10-4]*
11. Drive an ARFF apparatus. *[NFPA® 1002, 9.1.2; Skill Sheet 10-5]*
12. Perform various road tests in an ARFF apparatus. *[NFPA® 1002, 9.1.2; Skill Sheet 10-6]*
13. Perform various driving exercises. *[NFPA® 1002, 9.1.3; Skill Sheet 10-7]*
14. Back an ARFF apparatus using mirrors. *[NFPA® 1002, 9.1.2; Skill Sheet 10-8]*
15. Position an ARFF apparatus. *[NFPA® 1002, 9.2.1, 9.2.2; Skill Sheet 10-9]*
16. Engage power to the ARFF pump. *[NFPA® 1002, 9.2.2; Skill Sheet 10-10]*
17. Perform a daily operational check on an ARFF apparatus. *[NFPA® 1002, 9.1.1; Skill Sheet 10-11]*
18. Produce a fire stream from an ARFF apparatus turret device. *[NFPA® 1002, 9.2.3; NFPA® 1003 4.3.2; Skill Sheet 10-12]*
19. Produce a fire stream from an ARFF apparatus turret device while modulating/pumping and rolling. *[NFPA® 1002, 9.2.2; NFPA® 1003 4.3.2; Skill Sheet 10-13]*

Chapter 11

1. Describe administrative responsibilities in relation to ARFF services. *[NFPA® 1003, 4.2.2]*
2. Identify the components of an Airport/Community Emergency Plan. *[NFPA® 1003, 4.2.2]*
3. Explain factors to consider when developing an Airport/Community Emergency Plan. *[NFPA® 1003, 4.2.2, 4.2.3, 4.2.4]*
4. Identify emergency response considerations. *[NFPA® 1003, 4.1.1.3, 4.2.2, 4.2.3, 4.2.4]*
5. Describe procedures for ARFF response to various emergencies. *[NFPA® 1003 4.1.1.3, 4.2.4, 4.3.9, 4.3.10, 4.4.1, 4.4.2]*
6. Explain training considerations for mutual aid and support personnel and joint training exercises. *[NFPA® 1003 4.3.1, 4.3.4, 4.3.5, 4.3.7]*
7. Identify the components of an Airport/Community Emergency Plan review.

Chapter 12

1. Identify components of and training for the National Incident Management System-Incident Command System (NIMS-ICS). *[NFPA® 1003, 4.2.2]*

2. Describe strategies and tactics for various in-flight emergencies. *[NFPA® 1003, 4.2.4, 4.3.6]*
3. Describe strategies and tactics for various ground emergencies. *[NFPA® 1003, 4.2.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7]*
4. Identify types and characteristics of low-impact crashes. *[NFPA® 1003, 4.2.4, 4.4.1, 4.4.2]*
5. Identify types and characteristics of high-impact crashes. *[NFPA® 1003, 4.2.4, 4.4.1, 4.4.2]*
6. Explain procedures for aircraft emergency responses. *[NFPA® 1003, 4.1.1.3, 4.2.2., 4.2.4, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.3.8, 4.3.9, 4.3.10, 4.4.1, 4.4.3]*
7. Explain actions to take and factors to consider when responding to accidents involving military aircraft. *[NFPA® 1003, 4.1.1.3, 4.2.2, 4.2.3, 4.2.4, 4.3.1, 4.3.2, 4.3.3, 4.4.1]*
8. Explain considerations for responding to aircraft accidents/incidents involving hazardous materials. *[NFPA® 1003, 4.2.4]*
9. Learning Activity 12-1: Use a grid map to respond to the site of an aircraft incident/accident. *[NFPA® 1003, 4.2.1]*
10. Learning Activity 12-2: Obtain a clearance from ground control using phonetic alphabet and aviation terminology. *[NFPA® 1003, 4.2.3]*
11. Learning Activity 12-3: Communicate an accurate situation report about an aircraft incident/accident to an incident commander using incident management system (IMS) protocol. *[NFPA® 1003, 4.2.2]*
12. Learning Activity 12-4: Recognize hazardous conditions at an aircraft incident/accident and initiate corrective action. *[NFPA® 1003, 4.2.4]*
13. Learning Activity 12-5: Implement initial triage of the victims of an aircraft accident or incident. *[NFPA® 1003, 4.4.3]*

Learning Objectives Correlation Matrix

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
4.1.1.1	1	1, 4	
4.1.1.2	1	4	
4.1.1.3	2	6	
	3	1, 2, 3, 4, 5	
	4	2, 3, 4, 5	
	6	5	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4, 5	
	9	1	
	10	3, 4, 5	
	11	4, 5	
	12	6, 7	
4.1.1.4	4	3	
	6	5, 6	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4, 5	
	9	1	
	10	3, 4, 5	
4.2.1	2	1, 2, 3, 4, 5, 6, 7	

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
	10	3, 4	
	12	9	Learning Activity 12-1
4.2.2	2	1, 2, 4, 5	
	3	1	
	5	1, 2, 3, 4, 5	
	11	1, 2, 3, 4	
	12	1, 6, 7, 11	Learning Activity 12-3
4.2.3	2	1, 2, 4, 5	
	5	1, 2, 3, 4, 5	
	11	3, 4	
	12	7, 10	Learning Activity 12-2
4.2.4	4	1, 2, 4, 5	
	10	3, 4, 5	
	11	3, 4, 5	
	12	2, 3, 4, 5, 6, 7, 8, 12	Learning Activity 12-4
4.3.1	3	5	
	4	3, 4, 5	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4	
	9	1, 7	Skill Sheet 9-3

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
	11	6	
	12	3, 6, 7	
4.3.2	3	5	
	4	3, 4, 5	
	6	3	
	7	1, 2, 3, 4, 5, 6, 7, 9	
	8	2, 4	
	9	1, 6	Skills Sheet 9-2
	10	5, 18, 19	Skill Sheets 10-12, 10-13
	12	3, 6, 7	
4.3.3	3	5	
	4	3, 4, 5	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4	
	9	1, 5, 8	Skill Sheet 9-1, 9-4
	10	5	
	12	3, 6, 7	
4.3.4	3	1, 5	
	4	3, 4, 5	
	6	5	

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4	
	9	1, 9	Skill Sheet 9-5
	11	6	
	12	3, 6	
4.3.5	3	5	
	4	3, 4, 5	
	6	6	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4	
	9	1, 10	Skill Sheet 9-6
	10	5	
	11	6	
	12	3, 6	
4.3.6	3	4, 5	
	4	3, 4, 5	
	7	1, 2, 3, 4, 5, 6, 7, 8, 9	
	8	4	
	9	1, 11	Skill Sheet 9-7
	12	2, 3, 6	

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
4.3.7	3	4, 5	
	4	3, 4, 5	
	6	1, 2, 5, 10	Skill Sheet 6-3
	9	2, 9	Skill Sheet 9-5
	11	6	
	12	3, 6	
4.3.8	7	5, 9	
	8	5, 7, 8, 9	Skill Sheet 8-1, 8-2, 8-3
	10	6	
	12	6	
4.3.9	9	4, 6, 7, 8, 9, 10, 11	Skill Sheet 9-2, 9-3, 9-4, 9-5, 9-6, 9-7
	11	5	
	12	6	
4.3.10	4	3	
	7	1, 2, 3, 4, 5, 6	
	8	4	
	9	1, 3, 6, 7, 8, 9, 10, 11	Skill Sheet 9-2, 9-3, 9-4, 9-5, 9-6, 9-7
	11	5	
	12	6	
4.4.1	3	1, 2, 3, 4, 5	

NFPA® 1003 Standard (2015)	Chapter References	Learning Objectives	Skills and/or Learning Activities
	4	2, 3, 4, 5	
	6	1, 2, 5, 6, 8, 9, 11, 12, 13, 15	Skill Sheet 6-1, 6-2, 6-4, 6-5, 6-6, 6-8
	9	1	
	11	5	
	12	4, 5, 6, 7	
4.4.2	4	2, 3, 4, 5	
	6	1, 2, 3, 4, 7, 8, 11, 12, 13, 14, 15	6-1, 6-4, 6-5, 6-6, 6- 7, 6-8
	9	5	Skill Sheet 9-1
	11	5	
	12	4, 5	
4.4.3	4	3	
	6	7	
	12	6, 13	Learning Activity 12-5

NFPA® 1002 Standard (2014)	Chapter References	Learning Objectives	Skills and Learning Activities
9.1.1	10	2, 6, 7, 8, 9, 17	Skill Sheet 10-1, 10- 2, 10-3, 10-11
9.1.2	10	1, 3, 10, 11, 12, 14	10-4, 10-5, 10-6, 10- 8
9.1.3	10	1, 3, 13	Skill Sheet 10-7
9.2.1	10	4, 15	Skill Sheet 10-9

NFPA® 1002 Standard (2014)	Chapter References	Learning Objectives	Skills and Learning Activities
9.2.2	10	4, 5, 15, 16, 19	Skill Sheet 10-9, 10-10, 10-13
9.2.3	10	4, 5, 18	Skill Sheet 10-12

Level of Learning

The level of learning for the overall course is application. The level of learning for each individual chapter is listed in the instructor guide for that chapter.

Instructor-to-Participant Ratio

The instructor-to-participant ratio may vary based on the experience of the participants and the ability of the instructor. However, a ratio of 20:1 is recommended for classroom instruction.

Practical Exercises and Skills

There are five learning activities in the course. Learning activities are designed to apply the concepts and skills in chapter 12. The learning activities are described below.

- Learning Activity 12-1** **Use a grid map to respond to the site of an aircraft incident/accident. [NFPA® 1003, 4.2.1]**
- Learning Activity 12-2** **Obtain a clearance from ground control using phonetic alphabet and aviation terminology. [NFPA® 1003, 4.2.3]**
- Learning Activity 12-3** **Communicate an accurate situation report about an aircraft incident/accident to an incident commander using incident management system (IMS) protocol. [NFPA® 1003, 4.2.2]**
- Learning Activity 12-4** **Recognize hazardous conditions at an aircraft incident/accident and initiate corrective action. [NFPA® 1003, 4.2.4]**
- Learning Activity 12-5** **Implement initial triage of the victims of an aircraft accident or incident. [NFPA® 1003, 4.4.3]**

There are also 31 skill applications in the course. The skill applications are designed to apply the concepts and skills in chapters 6, 8, 9, and 10. The skill applications may be

stations where an instructor provides coaching and demonstration and an individual skill is performed. The skill applications are listed below.

- Skill Sheet 6-1:** Stabilize an aircraft using webbing, ropes, chains or a come-along (cable winch). *[NFPA® 1003, 4.4.1, 4.4.2]*
- Skill Sheet 6-2:** Deploy an air stairs unit (aircraft passenger stairs). *[NFPA® 1003, 4.4.1]*
- Skill Sheet 6-3:** Open aircraft doors and hatches. *[NFPA® 1003, 4.3.7]*
- Skill Sheet 6-4:** Cut an access opening in the skin of an aircraft (power saw). *[NFPA® 1003, 4.4.1, 4.4.2]*
- Skill Sheet 6-5:** Use hydraulic tools (cutters and /or spreaders) to open a hole in the side of an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2]*
- Skill Sheet 6-6:** Perform operations to safety and shut down an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2]*
- Skill Sheet 6-7:** Demonstrate the procedure for conducting a primary search of an aircraft after self-evacuation. *[NFPA® 1003, 4.4.2]*
- Skill Sheet 6-8:** Use a hydraulic device to remove a seat from an aircraft. *[NFPA® 1003, 4.4.1, 4.4.2]*
- Skill Sheet 8-1:** Resupply an ARFF vehicle with water. *[NFPA® 1003, 4.3.8]*
- Skill Sheet 8-2:** Resupply an ARFF vehicle with foam. *[NFPA® 1003, 4.3.8]*
- Skill Sheet 8-3:** Resupply an ARFF vehicle with dry chemical agent. *[NFPA® 1003, 4.3.8]*
- Skill Sheet 9-1:** Secure fuel sources. *[NFPA® 1003, 4.3.3, 4.4.2]*
- Skill Sheet 9-2:** Extinguish a fuel spill using an ARFF vehicle turret. *[NFPA® 1003, 4.3.2, 4.3.9, 4.3.10]*
- Skill Sheet 9-3:** Deploy and operate an ARFF vehicle handline to extinguish a fuel spill fire. *[NFPA® 1003, 4.3.1, 4.3.9, 4.3.10]*
- Skill Sheet 9-4:** Extinguish a three-dimensional fuel fire with handline(s). *[NFPA® 1003, 4.3.3, 4.3.9, 4.3.10]*

Skill Sheet 9-5:	Attack an interior fire. [NFPA® 1003, 4.3.4, 4.3.7, 4.3.9, 4.3.10]
Skill Sheet 9-6:	Extinguish an APU/EPU or engine fire. [NFPA® 1003, 4.3.5, 4.3.9, 4.3.10]
Skill Sheet 9-7:	Extinguish a wheel assembly fire with a handline. [NFPA® 1003, 4.3.6, 4.3.9, 4.3.10]
Skill Sheet 10-1:	Perform a routine walk-around maintenance inspection of an ARFF apparatus. [NFPA® 1002, 9.1.1]
Skill Sheet 10-2:	Perform an engine compartment inspection and routine preventative maintenance of an ARFF apparatus. [NFPA® 1002, 9.1.1]
Skill Sheet 10-3:	Perform an in-cab operational inspection of an ARFF apparatus. [NFPA® 1002, 9.1.1]
Skill Sheet 10-4:	Start, idle, and shut down an ARFF apparatus. [NFPA® 1002, 9.1.2]
Skill Sheet 10-5:	Drive an ARFF apparatus. [NFPA® 1002, 9.1.2]
Skill Sheet 10-6:	Perform various road tests in an ARFF apparatus. [NFPA® 1002, 9.1.2]
Skill Sheet 10-7:	Perform various driving exercises. [NFPA® 1002, 9.1.3]
Skill Sheet 10-8:	Back an ARFF apparatus using mirrors. [NFPA® 1002, 9.1.2]
Skill Sheet 10-9:	Position an ARFF apparatus. [NFPA® 1002, 9.2.1, 9.2.2]
Skill Sheet 10-10:	Engage power to the ARFF pump. [NFPA® 1002, 9.2.2]
Skill Sheet 10-11:	Perform a daily operational check on an ARFF apparatus. [NFPA® 1002, 9.1.1]
Skill Sheet 10-12:	Produce a fire stream from an ARFF apparatus turret device. [NFPA® 1002, 9.2.3; NFPA® 1003 4.3.2]
Skill Sheet 10-13:	Produce a fire stream from an ARFF apparatus turret device while modulating/pumping and rolling. [NFPA® 1002, 9.2.2; NFPA® 1003 4.3.2]

Evaluation Strategy

Evaluation of learning is accomplished by a combination of formal and informal methods. Formative evaluation is accomplished during each chapter through questions by the instructor and a written quiz at the conclusion of each chapter. The instructor guide for each chapter lists specific questions to be asked which will evaluate participant understanding of the skills and concepts.

Summative evaluation of each chapter is accomplished through a multiple choice test administered at the end of each chapter. The participant is required to score 70% or greater on each test to progress.

Resources Required

The following resources are required to deliver this course. It is the responsibility of the lead instructor to ensure all resources are obtained for his/her delivery.

- Computer
- Projector
- Projector screen
- Aircraft Rescue and Fire Fighting Visuals (PowerPoint® Presentation)
- Easel pad and marker

Exam prep

The exam prep is designed to prepare a student or candidate to successfully pass a written exam based on the content of this course. The written exam may be a chapter test, final course exam, promotional exam, or a certification test based on the NFPA® 1003, *Standard for Airport Fire Fighter Professional Qualifications*, as well as Chapter 9 of NFPA® 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*. The exam prep consists only of multiple-choice questions as this is the most common type of question used in fire service certification exams. The exam prep is a student tool, is not used as part of classroom instruction, and is seldom a requirement of the instructor. In other words, it is an independent study tool used by the student or candidate. For this reason, the answers to the questions are provided to the user.