



National Headquarters:
514 Progress Drive, Suite A
Linthicum Heights, MD 21090
845-878-4200
nfsa.org

Layout Technician Training Course – (Blended Learning Format)

Seminar Description: This blended learning format course combines self-paced on-line modules, mentored guidance and an in-class practicum component designed to take a person with basic knowledge of math, physical science and drafting skills and teach them to be productive basic sprinkler layout and detailing technicians. All of the skills which are necessary for NICET Level II Certification will be covered by the course. Students during this phase will read, complete online interactive lessons and watch videos from leading experts in the fire sprinkler field. Throughout the online phase, students will complete assessments and activities that will reinforce the lessons taught. Student will be required to master each unit before moving on to the next.

This self-paced online phase is the beginning of the process and must be completed before the Practicum Week.

On Line Component Duration: 40 hours

In-Class Component Duration: 40 hours

Number of On-Line Modules: 6 Units

Materials: NFSA Layout Textbook, NFPA 13, Participant Guide, and Activity Materials

ORIENTATION (Online)

This is a recorded on-line session required for all participants.

Orientation content

Overview of Course Structure (Course Materials, NFSA Resources)

Syllabus Review

Site Navigation Tour

Technical Assistance Resources

ON-LINE UNITS

UNIT 1 – Foundations

Modules

- a. Principles of Combustion
- b. Introduction to Fire Sprinklers, Pumps and Standpipes
- c. Basic Math
- d. Types of Construction
- e. FM Approvals

- f. UL Certification

Assessment Method(s):

Complete On-Line Quiz

UNIT 2 – Rules Governing Installation, Plan Preparation and Formatting

Modules

- a. Navigating NFPA 13
- b. Rules Governing Installation
- c. Sprinklers in the ICC
- d. Plan Preparation
- e. The Layout Process
- f. Navigating NFPA 14
- g. Navigating NFPA 20
- h. Navigating NFPA 22
- i. Navigating NFPA 24

Assessment Method(s):

Complete Online Section Quiz - Rules Governing Installation

UNIT 3 – Applying the Rules

Modules

- a. Sprinkler System Installation Seminar Chapter 8
 - 1) Sprinkler System Installation: Basic Requirements (Focus Area I)
 - 2) Sprinkler Positioning, Spacing, Location and Use (Focus Area II)
 - 3) Specific Sprinkler Installation Requirements (Focus Area III)
 - 4) Special Situations (Focus Area IV)
- b. Water Supplies
 - 1) Water Supplies
 - 2) Public Water Supplies
 - 3) Underground Piping
 - 4) Backflow Prevention & Sprinkler Systems
 - 5) Water Tanks
- c. Fire Pumps
 - 1) Introduction to Fire Pumps
 - 2) Why Use Fire Pumps
 - 3) Types of Fire Pumps
 - 4) Sizing of Fire Pumps
- d. Introduction to Standpipe Systems

- e. Pipe and Hangers
 - 1) Type of Pipe
 - 2) Supporting Sprinkler Pipe
 - 3) Introduction to Seismic Protection

- f. Alarm and Initiating Devices

Assessment Method(s):

- a. Complete Online Section Quiz – Fire Sprinklers
- b. Complete Online Section Quiz – Water Supplies
- c. Complete Online Section Quiz – Fire Pump
- d. Complete Online Section Quiz – Standpipe
- e. Complete Online Section Quiz – Pipe and Hangers
- f. Complete Online Section Quiz – Alarm and Initiating Devices

UNIT 4 – Hydraulics and Calculations

Modules

- a. Units of Measurements of Water
- b. Basic Hydraulics
- c. How Much Water Have We Got?
- d. How Much Water Do We Need?
- e. How Much Water Do We Really Need?
- f. Do We Have Enough Water?
- g. Do Our Results Make Sense?
- h. Complex Operating Areas and Non-Uniform Layouts
- i. Summary

Assessment Method(s):

Complete Online Unit Quiz – Hydraulics

UNIT 5 – Residential Fire Sprinkler Systems, Plan Review and Acceptance Testing & ITM

Modules

- a. Introduction to Residential Fire Sprinkler System
- b. Plans Review and Acceptance Testing
 - 1) What Happens During Plan Review
 - 2) System Acceptance Testing
 - 3) Acceptance Testing of Fire Pumps
 - 4) Acceptance Testing of Standpipe Systems

- c. Inspection, Testing, and Maintenance

- 1) Introduction to NFPA 25
- 2) Introduction to ITM

Assessment Method(s):

Complete Online Unit Quiz – Residential Sprinkler, Plans Review and Testing & ITM

UNIT 6 – Project Management

Modules

- a. Job Coordination
- b. Building Surveys

IN-CLASS PRACTICUM WEEK

Monday

Recap of On-Line Modules
NFPA 13 Updates

Tuesday

Hydraulics Recap and Application
Wet System Layout and Calculation

Wednesday

Wet System Review
Dry System Layout and Calculation

Thursday

Project Management (MH)
Review Dry System
NFPA 13R System

Friday

What Happens during Plan Review
Course Review

VERIFICATION UNIT

Unit 8- Computer Aided Design – Practicum and Verification

To complete this unit, the participant, obtain training and receive verification of competency from their employer in Computer Aided Design (CAD).