

**DOD FIRE FIGHTER CERTIFICATION SYSTEM**  
**STUDENT STUDY GUIDE**  
**CDC 10412**

## Preface

We're pleased that you are progressing well through the certification program and encourage you to continue your efforts to complete this CDC and obtain your Fire Service Instructor I certification. This course, CDC 10412, *Fire Service Instructor II* is designed to give you the references required to obtain this certification.

These requirements are extracted from NFPA 1041: Fire Service Instructor Professional Qualifications, 1992 edition. The relevant NFPA standard is listed in each section of the certification materials. Each section is to be used in conjunction with the NFPA standard to ensure all information is covered. Throughout the certification materials, Department of Defense enhancements to the NFPA standards are italicized.

The Student Study Guide briefly outline the information for each objective. Instructors should develop their own lesson plans using the guide sheets as a starting point. Reference notations indicate where additional information may be found.

Learning Objective (LO) numbers shown in the extreme left column of the Instructor Guide Sheets are for ECI tracking purposes and are not intended for use by students. The inclusion of names of any specific commercial product, commodity, or service in this publication is for information purposes only and does not imply endorsement by the Department of Defense.

This course is valued at 27 hours (9 points).

This CDC has been modified to reflect study reference pages by the AFRC Fire Training Committee. The Committee welcomes comments and corrections, as well as suggestions.

## BIBLIOGRAPHY

IFSTA, Fire Service Instructor, 5th Edition, 1990, Fire Protection Publications, Oklahoma State University.

NFPA 1041: Fire Service Instructor Professional Qualifications, 1992, National Fire Protection Association, Quincy, Massachusetts.

NFPA 1401: Fire Service Training Reports and Records, 1989, National Fire Protection Association, Quincy, Massachusetts.

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**Personnel Classification:** Fire Service Instructor II  
**Unit 1:** Instructional Planning  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

**LO/OBJ**

**CONTENT**

- 001 3-2.1 Definitions and procedures
- A.Task analysis **REFERENCE: Fire Service Instructor, Chapter 5 – Task, Page 88**
1. Definition
    - a. Combination of jobs
    - b. A task may contain several jobs
    - c. Requires the teaching of psychomotor skills and technical information
    - d. Analysis determines what task is to be taught
- B.Job analysis **REFERENCE: Fire Service Instructor, Chapter 5 – Task, Page 88**
1. Definition
    - a. Specific psychomotor skill or technical knowledge
    - b. Analysis determines what job is to be taught
- C Procedures for performing occupational analysis  
**REFERENCE: Fire Service Instructor, Chapter 5 – Task, Page 89**
1. Focus on specific task or job to be performed
  2. Do not overlook any task or job
  3. Determine what, how and why about task or job
  4. Determine how often task or job is performed
  5. Determine the importance of task or job
  6. Determine the complexity of task or job
  7. Select tasks or jobs for training
    - a. Those performed frequently
    - b. Those that are critical
    - c. Those essential for performance
  8. Sequence according to basic guidelines
    - a. Develop from simple to complex

**LO/OBJ**

**CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 5 – Task, Page 89**

- b. Develop from frequently used to east frequently used
- c. Develop from those needed to perform other jobs to those less needed to perform other jobs
- 9. Determine other related topics that must be known

002 3-2.2 Developing behavioral or performance objectives

**REFERENCE: Fire Service Instructor, Chapter 5 – Design Behavioral Objectives, Page 94-100**

- A. State in terms of measurable performance
  - 1. Based on information from analysis
  - 2. Must be clear, specific, and in writing
- B. Specify
  - 1. Conditions under which behavior takes place
    - a. Tools, information, or environment
  - 2. The expected behavior
    - b. What the student must know or be able to do
  - 3. Standard of performance
    - a. How well the student must be able to perform to demonstrate mastery
- C. Writing objectives
  - 1. Use the Conditions, Behavior, Standard method
  - 2. Provides consistent method of developing objectives
  - 3. List the key elements
    - a. Conditions
    - b. Behavior
    - c. Standard
  - 4. Fill in the specifics for each element
  - 5. Guidelines for good objectives
    - a. Objective must tell what the student will learn
    - b. Objectives must be written in simple straightforward terms
    - c. The verb choice reflects the learning level
    - d. Use clear, specific action verbs. See examples in IFSTA, Fire Service Instructor

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**Unit 2:** Instructional Development  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

**LO/OBJ**

**CONTENT**

003 3-3

Developing a comprehensive lesson plan

A. Given a fire service related subject

**REFERENCE: Fire Service Instructor, Chapter 5 – Analysis, Pages 87-90**

1. Analyze the subject
  - a. Perform an occupational analysis
2. Develop objectives

**REFERENCE: Fire Service Instructor, Chapter 5 – Design, Pages 95-97**

- a. Behavioral objectives
  - 1) Condition
  - 2) Behavior
  - 3) Standard
3. Develop a comprehensive lesson plan to include the following:

**REFERENCE: Fire Service Instructor, Chapter 5– Format for a Technical Lesson Plan, Pages 110-112**

- a. Job title
  - 1) Short descriptive title
  - 2) Taken directly from the course outline
- b. Level of instruction

**REFERENCE: Fire Service Instructor, Chapter 5 – Levels of Learning, Pages 91-94**

- 1) Based on job requirements
- 2) Level 1 - Basic knowledge
- 3) Level 2 - Competent
- 4) Level 3 - Highly proficient
- c. Objectives

**REFERENCE: Fire Service Instructor, Chapter 5 – Pages 110**

- 1) Minimum acceptable behaviors
- 2) Must be met at end of session

**LO/OBJ**

**CONTENT**

d. Materials needed

**REFERENCE: Fire Service Instructor, Chapter 5 – Pages 110**

- 1) List of all materials needed to teach
- 2) List of all materials needed to prepare for the class
- 3) Preparation or activities that must be completed by the instructor prior to the class

e. References

**REFERENCE: Fire Service Instructor, Chapter 5– Format for a Technical Lesson Plan, Pages 110-112**

- 1) Specific references that the instructor must study to teach the lesson
- 2) References consulted in preparation of the lesson plan

f. Preparation step

**REFERENCE: Fire Service Instructor, Chapter 5 – Four-Step Method of Instruction, Pages 104-108**

- 1) Step 1 of the four-step method of instruction
- 2) Instructor establishes relevancy
- 3) Material presented is designed to motivate the student to learn what is to be presented

g. Presentation step

- 1) Step 2 of the four-step method of instruction
- 2) Lists information to be covered
- 3) Describes the information to be covered
- 4) Describes what the instructor must do to teach the lesson

h. Application step

- 1) Step 3 of the four-step method of instruction
- 2) Activities, exercises, and jobs the student can apply based on what was taught



**LO/OBJ**

**CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 5 – Four-Step Method of Instruction, Pages 104-108**

- 3) May be integrated into the presentation step to allow immediate involvement
- i. Lesson summary
  - 1) Restatement or re-emphasis of important points made in the presentation step
- j. Evaluation step
  - 1) Step 4 of the four-step method of instruction
  - 2) Administration of test or evaluation to assess the amount of learning that took place
  - 3) Used to determine if the behavioral objectives were met
- k. Assignments

**REFERENCE: Fire Service Instructor, Chapter 5 – Pages 112**

- 1) Additional work that is assigned to be performed outside of class
- 2) May be used to help meet the behavioral objectives
- 30 May be used to help prepare for the next class

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**Personnel Classification:** Fire Service Instructor II  
**Unit 3:** Instructional Methods/Techniques  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

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004- 3-4	Instructional methods

**REFERENCE: Fire Service Instructor, Chapter 6 – Methods of Instruction, Pages 138-147**

- A. Conference
  - 1. Where used
    - a. To direct group thinking toward the solution of a common problem
  - 2. Value
    - a. Each member has opportunity to:
      - 1) Compare experiences
      - 2) Compare techniques
      - 3) Compare beliefs
    - b. All members share ideas
- B. Discussion
  - 1. Where used
    - a. When students have sufficient knowledge and experience to contribute to the discussion
    - b. Deal with available knowledge, ideas, attitudes
    - c. Not suited for passing along new ideas or skills
  - 2. Value
    - a. Challenges students to think and participate
    - b. Instructor acts as coordinator and guides discussion
    - c. Burden of developing new ideas, etc. is placed on the student

**LO/OBJ**

**CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 6 – Methods of Instruction, Pages 138-147**

- C. Demonstration
  - 1. Where used
    - a. Means used to introduce new skills
    - b. Used to show someone how to do something
  - 2. Value
    - a. Instructor demonstrates while explaining how and why
    - b. Sight is the primary communications sense
    - c. Students practice what has been demonstrated
    - d. Best way to teach manipulative skills, physical principles, and working mechanical devices
    - e. Can be used to compare products, equipment and the results of their use
- D. Illustration
  - 1. Where used
    - a. Teaching by “showing”
    - b. Used to supplement a demonstration
  - 2. Value
    - a. Uses the sense of sight
    - b. Uses a variety of visual aids that clarify details or processes
- E. Lecture
  - 1. Where used
    - a. Where words alone are used to convey ideas
    - b.
  - 2. Value
    - a. May be of limited value because it limits student participation
    - b. Instructors often tell instead of teaching
    - c. May be used for large audiences for short periods of time

**LO/OBJ      CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 6 – Methods of Instruction, Pages 138-147**

- F. Group discussion
  - 1. Where used
    - a. When students have sufficient knowledge and experience to contribute to the discussion
    - b. Deal with available knowledge, ideas, attitudes
    - c. Not suited for passing along new ideas skills
  - 2. Value
    - a. Challenges students to think and participate
    - b. Instructor acts as coordinator and guides discussion
    - c. Burden of developing new ideas, etc. is placed on the student
- G. Computer aided instruction

**REFERENCE: Fire Service Instructor, Chapter 6 – Individualized Instruction, Page 148-149**

**Chapter 9 – CAI, Pages 248-249**

- 1. Where used
  - a. Individual instruction
  - b. Relatively new
  - c. May not be widely used
- 2. Value
  - a. Offers flexibility in scheduling
  - b. Paced to the learner
  - c. Student-computer interaction enhances learning
- H. Individualized instruction

**REFERENCE: Fire Service Instructor, Chapter 6 – Individualized Instruction, Page 148-149**

- 1. Where used
  - a. Matching instructional methods, learning objectives, and students learning styles to achieve objectives

**LO/OBJ**

**CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 6 – Individualized Instruction, Page 148-149**

2. Value
  - a. May be used in combination with other methods of instruction
  - b. Student may set learning objectives
  - c. Built on students needs and learning style
  - d. Built on the learning objectives or competencies required
  - e. Built on the instructional strategies and media that fit the need of the student

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**Personnel Classification:** Fire Service Instructor II  
**Unit 4:** Instructional Materials/Aids  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

**LO/OBJ**  
005 3-5

**CONTENT**  
Preparing aids to instructional materials

**REFERENCE: Fire Service Instructor, Chapter 7 –Training Aids, Pages 153-160**

- A. Design of instructional materials
  - 1. Keep as simple as possible
  - 2. Present essential information
  - 3. Make realistic
  - 4. Must be accurate
  - 5. Must be manageable by the instructor
  - 6. Must be legible
    - a. Lettering must be large enough to be seen by all students
    - b. Pictures must be large enough to be seen by all students
- B. Overhead transparencies
  - 1. Prepare on acetate or plastic sheets
  - 2. Points to consider
    - a. Is this the best way to present this material
    - b. Is the content up to date
    - c. Does this transparency make use of good transparency techniques
    - d. Does the transparency meet minimum letter size
    - e. Does the transparency meet color quality
  - 3. Can be made by using:
    - a. Hand lettering or drawing
      - 1) Acetate sheets
      - 2) Felt-tipped pens
      - 3) Dry transfers
    - b. Machine reproduction
      - 1) Copy machine
      - 2) Black and white master

**LO/OBJ**

**CONTENT**  
**REFERENCE: Fire Service Instructor, Chapter 7 –Training Aids, Pages 153-160**

- 3) Acetate film that is compatible with the copy machine

B. Charts

**REFERENCE: Fire Service Instructor, Chapter 7 – Flip Charts, Pages 180-181**

1. Make all charts in a series the same size
2. Must be large enough to be clearly viewed
3. Letters must be large enough to be visible
4. Size, style, spacing and location are important
5. Black and white or colored letters on a contrasting background are the best combination
6. Letters with a width to height ratio of three to five are better
7. Do not put too much on one chart
8. Do not crowd letters

D. Diagrams/Illustrations

1. Use poster board or flip chart material
2. Felt tip pens
3. Construct to meet teaching needs
4. Show only the necessary detail

E. Information sheets

**REFERENCE: Fire Service Instructor, Chapter 5, Information Sheets, Pages 116-120**

1. Key the title to the related lesson
2. Write introduction
  - a. Explain importance of the information
  - b. Should encourage student to read and study
3. Present information in outline form, charts, tables, or illustrations
4. Copy should be easy to read
5. Illustrations can be inserted in text or placed on separate sheet
4. Develop test questions
  - a. May be on separate sheet
  - b. Stress important points
  - c. Use thought provoking questions

**LO/OBJ**

**CONTENT**

**REFERENCE: Fire Service Instructor, Chapter 5, Information Sheets, Pages 116-120**

- F. Student worksheets
  - 1. Key the title to the related lesson
  - 2. List all materials needed
  - 3. List titles, page numbers of books, magazines or other reference material
  - 4. Provide complete information for the student
  - 5. Write a short introduction to encourage student to complete the assignment
    - a. Discuss skill in general
- F. Student worksheets (continued)
  - b. Explain why learning the skill is important
  - c. Tell how worksheet will help student learn
  - 6. Provide directions on how to complete the activity
  - 7. Provide answers on a separate sheet



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**Personnel Classification:** Fire Service Instructor II  
**Unit 5:** Evaluation and Testing  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

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006 3-6	Test construction A. Written questions

**REFERENCE: Fire Service Instructor, Chapter 8 – Testing Items – Multiple Choice – Page 207-209**

1. Multiple-Choice
  - a. Consists of:
    - 1) Question or incomplete statement called - stem
    - 2) List of several possible answers called - choices or alternatives
    - 3) Correct choice is called - answer
    - 4) Remaining choices are called - distracters
  - b. Construction
    - 1) Start with stem as a question or incomplete statement
    - 2) Make stem clear and brief
    - 3) Word stem in positive form, when possible
    - 4) Underline negative words in stem and choices
    - 5) Provide at least four choices one answer - three distracters
    - 6) Answer must be the best choice
    - 7) All choices refer to subject matter
    - 8) Choices must be grammatically consistent with the stem
    - 9) Distracters must be plausible
    - 10) Position of answer must be varied

**LO/OBJ****CONTENT****REFERENCE: Fire Service Instructor, Chapter 8 – Testing Items – Multiple Choice – Page 207-209**

- 11) Each choice must be on a separate line
- 12) Indent choices five spaces
- 13) Capital letters identify each choice
- 14) No periods after choices
- c. What to avoid
  - 1) Choices that are obviously wrong
  - 2) Grammatical errors that give clues to the correct answer
  - 3) Correct answers that are longer or shorter than distracters
  - 4) Avoid using “all of the above” as a fourth choice
  - 5) Use “none of the above” with care

**2. True-False****REFERENCE: Fire Service Instructor, Chapter 8 – Testing Items – True-False – Page 210-212**

- a. Place letters T and F in the left margin
- b. Provide a sufficient number of items to provide reliable results
- c. Provide an equal number of true and false questions
- d. Avoid using the following:
  - 1) determiners - usually, generally, often, sometimes, never, all, always, none
  - 2) Trick or catch items
  - 3) Double negative statements
  - 4) Personal pronoun “you”
  - 5) Trivial statements
  - 6) True items that are longer or shorter than false statements
  - 7) Long complex statements
  - 8) Humorous and absurd statements
  - 9) Statements taken directly from textbooks

**LO/OBJ**

**CONTENT**

3. Matching

**REFERENCE: Fire Service Instructor, Chapter 8 – Testing Items – Matching – Page 212-215**

- a. Place all matching items on one page
- b. Arrange test in two columns
  - 1) Column I left side of page
  - 2) Column II right side of page
- c. Number each item in Column I
- d. Provide a blank space by each item in Column I
- e. Provide a minimum of 5 items, but not more than 12 in column I
- f. Provide two or three more responses in Column II than items in Column I
- g. Provide specific instructions on how to take the test
- h. Avoid choices that are obviously wrong
- i. Avoid placing Column I and II on more than one page
- j. Avoid the same number of items in Column I and II

4. Short Answer/Completion

**REFERENCE: Fire Service Instructor, Chapter 8– Testing Items– Short Answer/Completion– Page 215-217**

- a. Write short direct items so that only one answer is possible
- b. Start with a direct question
- c. Make sure answer to be supplied is a key point in the lesson
- d. Provide a uniform blank space for the answer at the end of each question
- e. Avoid any unnecessary clues

C. Oral questions

**REFERENCE: Fire Service Instructor, Chapter 8 – Testing Items – Oral questions, Page 202**

1. Use written test question development methods

**LO/OBJ**

**CONTENT**

D. Performance tests

**REFERENCE: Fire Service Instructor, Chapter 8 – Manipulative-Performance – Page 197-200**

1. Specify performance objectives to be measured
  - a. Each test item should require performance of a number of skills
  - b. Allows broad sampling without consuming time to test each basic skill
2. Select rating factors upon which each test will be judged
  - a. Rating factors include student's approach to particular job or procedure
  - b. Students should be rated against standard, not against other students
3. Prepare directions to explain test to students
  - a. Provide written set of instructions
  - b. Supplement with oral instructions
  - c. Provide an opportunity for students to ask questions
4. Try test on other instructors
  - a. Trial test may uncover problems that can be corrected
  - b. Elimination of problems will make test more valid
5. Use more than one rater to increase reliability
  - a. At least two or three raters
  - b. Provide instructions to raters
  - c. Scoring should be average calculated from all raters
6. Follow established procedures during administration
  - a. Have all equipment ready before test
  - b. Use the same equipment throughout the test
  - c. Follow same sequence for all test

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**Personnel Classification:** Fire Service Instructor II  
**Unit 6:** Training Records and Reports  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

**LO/OBJ**

**CONTENT**

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There is no requirements for Fire Service Instructor II  
for training records and reports

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**Personnel Classification:** Fire Service Instructor II  
**Unit 7:** Concepts of Learning  
**Objectives:** NFPA Standard NFPA 1041, Chapter 3

<u>LO/OBJ</u>	<u>CONTENT</u>
007 3-8	Influences on the teaching/learning process

**REFERENCE: Fire Service Instructor, Chapter 7 – The needs for Training Aids, Page 153-157**

- A. Instructional materials
  - 1. Used to support instruction
  - 2. Helps student understand and remember what has been taught
  - 3. Make use of senses other than hearing
  - 4. Should be used when:
    - a. Actual item is too complicated
    - b. Actual item is too large
    - c. Actual item is too small
    - d. Actual item is too spread out
    - e. The item or process is not available
    - f. The item is too dangerous, delicate or expensive to permit students to practice with it
    - g. Mechanical movement is too fast to see
    - h. The process is not visible to the naked eye
  - 5. Are necessary when oral communication alone is inadequate
  - 6. Help ensure the clarity of what is being taught
  - 7. Greater sensory appeal will increase students retention rate
  - 8. Saves time by decreasing the amount of time required to explain orally

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**REFERENCE: Fire Service Instructor, Chapter 7 – How to Successfully use Training Aids, Page 157**

- B. The teaching/learning setting
  - 1. Suitable chairs, tables, or desks so that students can take notes
  - 2. Temperature of room should be comfortable
  - 3. Ventilation should be adequate
  - 4. Arrange seating so that visual aids are visible to all

**REFERENCE: Fire Service Instructor, Chapter 6 - Physical Settings, Page 128-131**

- 5. Limit foot traffic, noise and other distractions
- 5. Outdoor settings make instruction more difficult
  - a. Plan, organize and manage instruction carefully
  - b. Limit traffic, noise, and onlookers as much as possible
  - c. Make allowances for large classes so everyone can see and hear
  - d. Make allowances for weather conditions
- C. Competency-based learning

**REFERENCE: Fire Service Instructor, Chapter 4 – Competency-based Learning – Page 68-70**

- 1. Based on student performance not course content
- 2. Emphasizes what the student will be able to do
- 3. Standards or criteria are based on competencies
- 4. Outcomes are expressed in minimum mastery levels
- 5. Each specific competency must be attained to a redefined level.
- 6. Students are given time to master each competency
- 7. Emphasis is on performance - not time
- 8. Achievement level is the same for all students
- 9. Objectives, instruction and evaluation are tailored to performance
- 10. Immediate feedback is given to each student
- 11. Offers a variety of realistic learning experiences
- 12. Classroom/group and one-on-one learning can be used
- 13. Holds both student and instructor accountable for mastery

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**Personnel Classification:** Fire Service Instructor II

**Unit 8:** References

**Objectives:** NFPA Standard NFPA 1041, Chapter 3

<u>LO/OBJ</u>	<u>CONTENT</u>
008 3-9	Sources of reference materials used for developing lesson plans
	A. International Fire Service Training Association Fire Protection Publications Oklahoma State University Stillwater, OK 74078-0118
	B. National Fire Protection Association 1 Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101
	C. National Fire Academy National Emergency Training Center 16825 S. Seton Avenue Emmitsburg, MD 21727-8998