

Prepared by the Department Social Sciences and Human Services

Date of Departmental Approval: February 2013

Date approved by Curriculum and Programs: March 6, 2013

Effective: Fall 2013

1. Course Number: FSC103

Course Title: Firefighting Tactics and Strategy

2. Description: This course is concerned with basic fire fighting tactics and strategy; methods of attack; preplanning of fire problems including necessary equipment and manpower. Some fire problems will be presented for analysis and study, consistent with accepted practices from authoritative sources. The concepts of I.C.S. and R.I.C. will be discussed throughout the class.

3. Student Learning Outcomes: Upon successful completion of this course, students are able to do the following:

- Describe how a fire develops and spreads throughout a structure.
- Describe resource requirements.
- Define terms and practices used by fire officers to mitigate incidents they must respond to.
- Define terms used by federal, state and local agencies when they are to interact with one another.
- Describe the Incident Command System in fire operations
- Analyze Fire Company operations
- Utilize the concept of Fire Ground Safety in developing fire fighting tactics and strategy
- Integrate support functions needed to conduct effective fire suppression

4. Credits: 3 credits

5. Satisfies General Education Requirement: No

6. Prerequisite: FSC150/FSC100

7. Semester Offered: Varies

8. Suggested General Guidelines for Evaluation: Evaluation may include but is not limited to examinations, in-class activities, and special projects.

9. General Topical Outline (Optional):

1. Introduction
 - a. Define Tactics: Strategy
 - b. Need for Tactics: Strategy
 - c. Importance of Controlled Actions on Fire Ground
2. Development of Fire Fighting
 - a. Pre-Modern Times (1950)
 - i. Apparatus
 - ii. Hose
 - iii. Concepts
 - b. Modern Times (After 1950)
 - i. Apparatus
 - ii. Hose
 - iii. Concepts
3. Behavior of Fire
 - a. What is Fire - Combustion Process
 - b. How is it Extinguished
 - c. How it Reacts Inside a Building
 - i. Products of Combustion
 - ii. Spread From Room to Room
 - d. How to Extinguish - Theory

4. Removal of Combustion Products
 - a. Ventilation
 - i. Flashover
 - ii. Flash Point
 - iii. Flame Spread and Temperature Curve
 - b. Heat Absorption
 - i. Btu
 - ii. Latent Heat of Vaporization
 - iii. Loyd Dayman Theory (1950's)
 - c. Rotation of Fog Nozzle
 - i. Iowa State University Studies
 - a. Clockwise
 - b. Counter-Clockwise
 - ii. Rapid vs. Slow Rotation (R.S.R.)
 - iii. Steam Production vs. Heat Absorption
 - iv. How Much Water per Cubic Foot
 - a. 1 gallon per 200 cubic feet
 - d. Straight Stream vs. Fog
 - i. Thermal Balance in Room
 - ii. Disadvantages of Fog
 - a. Ventilation
 - b. Force Fire Back
 - c. No Reach
 - d. Air Introduction to Fire
5. Man Power Requirements
 - a. Engine Company
 - b. Ladder Company
 - c. Rescue Company
 - d. Task Force Concept
 - e. Mini-Pumper Concept
 - f. Equipment Changes
6. Pre-Fire Planning
 - a. Need: Uses
 - b. Basic Symbols (Sandburn Map Symbols)
 - c. Basic Items Considered
7. Basic Fire Fighting Rules
 - a. Fried's 14 Points
8. Basic Engine Company Rules
 - a. Fried's 20 Points
9. Strategy: Tactics
 - a. Manpower Needed
 - b. Equipment Needed
 - c. Department Size and Limitations
 - d. Fire Ground Communications
 - e. Chain of Command on Fire Ground
 - f. What Chief Officer Should Know
 - g. Items Effect Company Operations
 - h. Items Influencing Choice of Tactics
 - i. Fire Extension
 - j. Analyzing Fire Situation
10. Fire Ground Operations
 - a. Locating the Fire
 - b. Rescue Priorities
 - c. Fire Search
 - d. Mechanical vs. Natural Ventilation
 - e. Exposure
 - i. Internal
 - ii. External
 - f. Priorities of Exposures
 - g. Extra Help
 - h. Extinguishment
 - i. Other Agencies
 - j. Basic Action Plan
 - k. Fire Ground Leadership
 - l. Tactical Fire Ground Principles
 - m. Tactical Errors: Weakness

- n. Fire Attack
 - i. Offensive
 - ii. Defensive
- o. Aggressive Interior Attack
- p. Placement of Companies
- 11. The Fire Building
 - a. Fire Spread
 - b. "Fire Proof" Construction
 - c. Ballon Flame
 - d. Mushrooming of Fire
 - e. Fire Walls and Openings
 - f. Common Attic; Cellar
 - g. Dropped or Suspended Ceilings
 - h. Tie Rods and Wall Anchoring
 - i. Structural Collapse
 - j. Truss Construction
 - k. Steel Construction
 - l. Concrete Construction
 - m. Live - Dead Loads
- 12. Fire Systems
 - a. Sprinkler Operations
 - i. Wet
 - ii. Dry
 - iii. Deluge
 - iv. Pre-Action
 - b. Shut Down Procedure

 - c. Standpipe Operations
 - i. Type
 - ii. Hose
 - iii. Pressure Reduction Valves
- 13. Basic Fire Ground Company Operations
 - a. Engine Company
 - i. Water on Fire
 - ii. Attack Pump Concept
 - b. Ladder Company
 - i. Many Functions
 - ii. Duties of Page 203
 - iii. Equipment Assignments
 - iv. First in Ladder
 - v. Second in Ladder
 - vi. Positions of Companies
 - c. Moving Water to Fire
 - i. Two Piece Engine Company
 - a. Pump Wagon
 - ii. Supply Line
 - iii. Tankers
 - iv. Drafting
 - v. Fold-A-Tank
 - d. Moving Water Into Fire Building
 - i. Attack Pre-Connect Lines
 - a. 1 1/2", 1 3/4" and 2 1/2" Lines
 - ii. Entrance Point
 - a. Location of Fire
 - b. Purpose of Entry
 - iii. Types of Fires in Difficult Areas
 - a. Partition Fires
 - b. Cockloft Fires
 - c. Upper Floor Fires
 - d. Cellar Fires
- 14. Fire Attack - Exterior
 - a. Master Stream
 - b. Man Power
 - c. Prepare for Interior Attack
- 15. Mercantile Fires
 - a. Tax Payer Block

- b. Multi Story
- c. Basement
- 16. Special Hazards
 - a. High Rise Fires
 - b. Buildings Under Construction
 - c. Tank Farm Fires
 - d. Natural Gas Fires
 - e. LPG Fires
 - f. Motor Vehicle Fires
- 17. Solving Fire Problems