Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551-7650
(925) 424-1000
(925) 443-0742 (Fax)

Course Outline for FST 54

FIRE PREVENTION TECHNOLOGY

Effective: Fall 2018

I. CATALOG DESCRIPTION:
FST 54 — FIRE PREVENTION TECHNOLOGY — 3.00 units

Provides fundamental knowledge relating to the field of fire prevention. Topics include, history and philosophy of fire prevention and organization, organization and operation of a fire prevention bureau, use and applications fire codes and standards, plans review, fire inspections, identification and correction of fire hazards, fire and life safety education, and fire investigation.

3.00 Units Lecture

Prerequisite
FST 50 - Fire Protection Organization
with a minimum grade of C
or Instructor Approval

Grading Methods:
Letter Grade

Discipline:
- Fire Technology

	MIN
Lecture Hours:	54.00
Expected Outside of Class Hours:	108.00
Total Hours:	162.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering the course a student should be able to:

A. FST50
1. Describe the components and development of the fire and emergency services.
2. Recognize and illustrate the history of the fire service.
3. Recognize careers in fire and emergency services.
4. Analyze the basic components of fire as a chemical chain reaction, the major phases of fire, and examine the main factors that influence fire spread and fire behavior.
5. Define the role of national, state and local support organizations in fire service and emergency services.
6. Identify the primary responsibilities of fire prevention personnel including, code enforcement, public information, public and private protection systems.

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Identify laws, codes, ordinances, and regulations as they relate to fire prevention.
B. Understand and describe code enforcement as it impacts life and property loss
C. Define the national fire problem and role of fire prevention.
D. Identify and describe fire prevention organizations and associations.
E. Define laws, rules, regulations, and codes, and identify those relevant to fire prevention of the authority having jurisdiction.
F. Define and describe the functions of a fire prevention bureau.
G. Describe inspection practices and procedures.
H. identify and describe the standards for professional qualification for Fire Marshal, Plans Examiner, Fire Inspector, Fire and Life Safety Educator, and Fire Investigator.
I. List opportunities in professional development for fire prevention personnel.
J. Identify and describe the different occupancy classifications.
K. Identify the role of model codes and describe the historical development of codes.

V. CONTENT:
A. National Fire Problem and Role of Fire Prevention
1. History and development of fire prevention

B. Fire Prevention Organizations and Associations
    1. Public
    2. Federal
    3. State
    4. Local
    5. Private
        a. Insurance organizations
        b. Testing laboratories
        c. Member organizations: NFPA
C. Laws, Rules, Regulations and Codes
    1. Code administration
D. Fire Prevention Bureau Functions
    1. Plans Review
    2. Inspections
    3. Permits and Testing
    4. Public Education
    5. Investigation
E. Tools and Equipment
    1. Tape measure
    2. Flashlight
    3. Code Manuals
    4. Documents and Forms
F. Roles and Responsibilities of Fire Prevention Personnel
    1. Inspection
        a. Fire incident reporting awareness
        b. Factors relating to life safety
        c. General fire inspection practices
        d. Procedure for correcting fire hazards and modification of requirements
        e. Fire drills and emergency evacuation
        f. Handling fire prevention complaints
    2. Fire prevention through public education
        a. Basic instruction techniques for public education
        b. Teaching children about fire safety
        c. Teaching adults about fire safety
        d. Teaching the public about fire safety issues
        e. Teaching the public about fire and burn prevention
        f. Juvenile firesetter awarenes
        g. General fire safety and electrical safety
    3. General fire safety
        a. Basic electrical theory
        b. Electrical fire hazards and safety devices
        c. Reference sources related to electrical codes and safety
G. Professional Certification
    1. National Fire Protection Association (NFPA)
    2. International Code Council (ICC)
    3. State Fire Marshal (CFSTES)
H. Professional Development
    1. County Fire Prevention Officers Association
    2. State Fire Prevention Officers Association
    3. National Fire Protection Association
    4. Committes and Advisory Boards
I. Building construction for fire prevention
    1. Classification of occupancies
    2. Building construction classifications
    3. Relationship of fire protection to building construction and occupancy
    4. Purpose and location of fire rated building construction
    5. Fire doors and windows
    6. Fire safety requirements for decorative materials and furnishings
J. Exiting and life safety
    1. The life safety issue
    2. Exit requirements
    3. Determination of adequate Egress
    4. Maintenance of exits
    5. Enclosed exit stairwells and smokeproof enclosures
K. High piled combustible stock
L. Fire protection equipment and systems
    1. Portable fire extinguishers
    2. Distribution and placement of portable fire extinguishers
    3. Inspection of fire extinguishers
    4. Inspection of fixed fire protection systems
    5. Inspection of kitchen cooking systems
    6. Private water supply systems
    7. Standpipe and hose systems
    8. Inspection of standpipe systems
    9. Types of fire sprinkler systems
    10. Inspection of dry and wet pipe sprinkler systems
    11. Conduct tests on dry and wet pipe sprinkler systems
    12. Local fire alarm systems
    13. Classification of fire alarm systems
    14. Inspection of fire alarm systems
    15. Fire alarm panels and other equipment
M. Properties of hazardous materials
    1. Sources of technical information on hazardous materials
    2. Basic classes of flammable and combustible liquids
    3. Characteristics of common oxidizing materials and organic peroxides
    4. Characteristics of common radioactive materials
    5. Characteristics of common toxic materials
    6. Characteristics of unstable (reactive) materials
    7. Characteristics of combustible metals
    8. Characteristics of combustible dust

9. Characteristics of corrosives
10. Classification of explosive
11. Fire hazards of plastics
12. D.O.T. and NFPA 704M regulatory labeling and placarding

N. Storage and use of hazardous materials
1. Recommended practices and procedures for inside storage of flammable and combustible materials
2. Recommended practices and procedures for outside storage of flammable and combustible liquids
3. Acceptable containers for flammable and combustible liquids
4. Transferring flammable and combustible liquids, use, dispensing and mixing
5. Control of ignition sources and explosive atmospheres
6. Fire hazards of compressed and liquefied gases
7. Storage and transfer practices of compressed and liquefied gases
8. Regulations for storage, handling, and use of natural and synthetic fibers
9. Describe hazards of explosives/fireworks and the need for security
10. Describe sources of technical information on explosive and fireworks

O. Fire investigation
1. Determine cause and origin
2. Accidental fires vs. Arson fires (Incendiary Causes)

P. Plan review
1. Building
2. Fire protection systems
3. Water supplies
4. Underground flammable liquid tanks
5. Life safety systems
6. Residential subdivisions

Q. Records and reports
1. Property loss, death and injury reports
    a. NIFIRS vs CFIRS
2. Record keeping for inspection reports
3. Fire investigation reports
4. Fire prevention bureau effectiveness reports

VI. METHODS OF INSTRUCTION:

A. **Lecture** -
B. Visual aids
C. **Field Trips** -
D. Case studies
E. Group discussion and assignments

VII. TYPICAL ASSIGNMENTS:

A. Essay explaining and identifying principles and procedures to correct fire hazards
B. Presentation by groups describing basic principles of fire cause determination

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Simulation
4. Class Participation
5. Class Work
6. Home Work

B. **Frequency**

1. Minimum of one Midterm and one Final exam
2. Quizzes Bi-Weekly
3. One simulation fire inspection
4. Daily class participation
5. Weekly class work
6. Three homework assignments

IX. TYPICAL TEXTS:

1. IFSTA. *Fire Inspection and Code Enforcement.* 8th ed., International Fire Service Training Association, 2016.
2. Diamantes, David. *Principles of Fire Prevention.* 3rd ed., Delmar Cengage Learning, 2015.
3. Lacey, Bret , and Paul Valentine. *Fire Prevention Applications 2/e.* 2nd ed., IFSTA, 2017.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. Fire Protection Handbook, National Fire Protection Association, latest edition
B. Uniform Fire Code, latest edition
C. Uniform Building Code, latest edition