

FIRE 73 Course Outline as of Fall 2018

CATALOG INFORMATION

Dept and Nbr: FIRE 73

Title: FIRE PREVENTION TECH.

Full Title: Fire Prevention Technology

Last Reviewed: 1/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: FIRE 52

**Catalog Description:**  
This course provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigations.

**Prerequisites/Corequisites:**

**Recommended Preparation:**  
Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: This course provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigations. (Grade Only)  
Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:

<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>CSU Transfer:</b>	Transferable	Effective:	Spring 1989	Inactive:
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<b>UC Transfer:</b>		Effective:		Inactive:
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**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Explain the progress of fire prevention in the United States.
2. Discuss the need, responsibilities, and importance of fire prevention organizations.
3. Discuss the laws, rules, codes, and other regulations relevant to fire prevention and protection.

### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Define the national fire problem and role of fire prevention
2. Identify and describe fire prevention organizations and associations
3. Identify laws, codes, ordinances, regulations and standards as they relate to fire prevention
4. Define laws, rules, regulations, codes and standards, and identify those relevant to fire prevention of the authority having jurisdiction
5. Understand the impact of fire prevention efforts on life and property loss
6. Define and describe the functions of a fire prevention bureau
7. Describe inspection practices and procedures
8. Identify and describe the standards for professional qualification for Fire Marshal, Plans Examiner, Fire Inspector, Fire and Life Safety Educator, and Fire Investigator
9. List opportunities in professional development for fire prevention personnel

### **Topics and Scope:**

- I. The National Fire Problem and the Role of Prevention
  - A. Early Fire Prevention efforts in America
  - B. Fire disasters as an incentive for Fire Prevention efforts
  - C. U.S. fire statistics compared to the rest of the industrialized world
  - D. The insurance industry and Fire Prevention

- E. Philosophy of Fire Prevention as a fire department function
- F. The relationship of Fire Prevention to the reduction of life and property loss
- G. Trends in Fire Prevention
- II. Fire Prevention organizations and associations
  - A. Public
    - 1. Federal organizations
      - a. U.S. Fire Administration
      - b. U.S. Park Service
      - c. U.S. Forest Service
      - d. Bureau of Land Management
      - e. Bureau of Alcohol Tobacco and Firearms
      - f. National Institute of Standards and Technology (NIST)
    - 2. State organizations
      - a. California State Fire Marshal (OSFM)
      - b. CALFIRE
      - c. Building Standards Commission
      - d. Office of Statewide Health Planning and Development (OSHPD)
    - 3. Local organizations
      - a. City fire departments
      - b. Fire districts
      - c. County fire departments
      - d. Volunteer fire departments
  - B. Private organizations
    - 1. National Fire Protection Association (NFPA)
    - 2. Underwriters Laboratories
    - 3. Factory Mutual
- III. Laws, Regulations, Rules, Codes and Standards
  - A. Building codes
    - 1. International Building Code (IBC)
    - 2. International Residential Code (IRC)
    - 3. California Building Code (CBC) Title 24 California Code of Regulations (CCR)
    - 4. Building construction types
    - 5. Building occupancy classifications
    - 6. Building exiting requirements
  - B. Related Codes
    - 1. Mechanical Code
    - 2. National Electric Code
    - 3. Plumbing Code
  - C. Fire Codes
    - 1. International Fire Code (IFC)
    - 2. National Fire Code
    - 3. California Fire Code (CFC)
    - 4. Title 19 CCR
    - 5. Fire Code formatting
    - 6. The Fire Code as a "Maintenance" document
    - 7. The Fire Code permit process
  - D. Standards and Testing
    - 1. NFPA standards
      - a. NFPA Standard 13
      - b. NFPA Standard 72
    - 2. Product testing
      - a. Underwriters Laboratories

b. Factory Mutual

E. Authority and legal responsibility to enforce codes

IV. Codes Relevant to a Jurisdiction

A. State codes

B. Municipal codes

C. Zoning Ordinances

D. Local Fire Code adoption

V. Impact of Fire Prevention Efforts on Life and Property Loss

A. The relationship of codes and fire loss

B. The origins of codes from large loss fires

C. The engineering, education and enforcement approach to fire prevention

D. The use of codes as mitigating measures

E. Resistance encountered with prevention efforts

F. Benefits to the public

G. Involvement of civic groups and organizations

VI. Fire Prevention Bureau functions

A. Inspections

1. Hazard mitigation

2. Prioritizing hazards

3. Inspection documentation

a. Notices of Violation

b. Plans of Correction

c. Use of digital technology in documentation

B. Code enforcement

1. Citation process

2. Administrative hearing

3. Concept of "Due Process"

4. Appeals process

C. Plan review

1. Buildings

2. Fire protection systems

3. Water supplies

4. Flammable and combustible liquid

a. Underground tanks

b. Aboveground tanks

c. Dispensing systems

5. Life safety systems

6. Developments and subdivisions

D. Public education

1. Community education

2. Schools programs

3. Commercial programs

4. Fire Statistics

5. Education, Engineering, and Enforcement

6. Designing and education program

7. Media

E. Fire Investigation

1. Cause and origin determination

2. Accidental fires

3. Incendiary fires

4. Natural fires

5. Undetermined fires

## F. Records management

1. Report preparation and recordkeeping
2. Recording fire deaths, injuries and property losses
3. Computerized recordkeeping
4. Recordkeeping of paper files
5. Periodic reports

## G. Measuring the effectiveness of the Fire Prevention Bureau

## VII. Inspection Practices

### A. Scheduling inspections

### B. Review of existing records

### C. The approach and introduction

### D. The inspection tour

1. Exterior
2. Interior

### E. Identifying and documenting hazards

### F. Exit interviews

### G. Follow-up inspections

### H. Inspection reports

### I. Tools and equipment used during inspections

1. Uniforms
2. Personal protective clothing (PPI)
3. Code books
4. Reference related publications
5. Printed forms
6. Non-computerized files
7. Camera
8. Hydrant flow test equipment
9. Flashlight
10. Measuring tape

### J. Hazards

1. Ingress hazards
2. Egress hazards
3. Electrical hazards
4. Interior storage
5. Hazardous material hazards
  - a. Liquids
  - b. Solids
  - c. Gases
5. Common vs. special hazards
6. Structural hazards
7. Non-structural hazards
  - a. Vegetation
  - b. Transportation
  - c. Outdoor storage
  - d. Refuse

### K. Deficiencies in fire protection equipment and systems

1. Fire extinguishers
2. Fire sprinkler systems
3. Fire alarm systems
4. Special extinguishing systems
5. Water supplies

### L. Fire Prevention in the Wildland Urban Interface

1. Construction standards
  2. Vegetation management
  3. Inspection programs
- VIII. Professional Qualifications and Roles and Responsibilities of Fire Prevention Personnel
- A. Fire Chief
  - B. Fire Marshal
  - C. Inspector (Sworn)
  - D. Inspector (Civilian)
  - E. Fire Company member
  - F. Fire Protection Engineer
- IX. Professional Development and Certification of Fire Prevention Personnel
- A. National Fire Academy prevention and investigation courses
  - B. OSFM courses and certification tracks
  - C. California Specialized Training Institute (CSTI) courses and certification tracks
  - D. International Code Conference courses and certification tracks
  - E. International Association of Arson Investigators (AIIA) courses and certification tracks
  - F. California Conference of Arson Investigators (CCAI) courses and certification tracks

### Assignment:

1. Reading 20-30 pages per week from textbook or other assigned materials
2. Completion of 17 weekly assignment sheets
3. Responding to 2-5 student discussion board topics
4. Term project and/or internet research group project
5. PowerPoint presentation
6. One site visit
7. Quizzes, midterm, and final exam

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework, Term project

Writing  
20 - 35%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Weekly assignment sheets, homework assignments, site visits

Problem solving  
20 - 35%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, midterm, final exam
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Exams 40 - 60%
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**Other:** Includes any assessment tools that do not logically fit into the above categories.

None
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Other Category 0 - 0%
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**Representative Textbooks and Materials:**

Principles of Fire Prevention. 3rd ed. Diamantes, David. Jones & Bartlett. 2016

Fire Inspection and Code Enforcement. 8th ed. International Fire Service Training Association. 2016