

FT R152: FIRE PREVENTION TECHNOLOGY

Originator

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College

Oxnard College

Discipline (CB01A)

FT - Fire Technology

Course Number (CB01B)

R152

Course Title (CB02)

Fire Prevention Technology

Banner/Short Title

Fire Prevention Technology

Credit Type

Credit

Start Term

Fall 2021

Catalog Course Description

This course provides fundamental information regarding the history and philosophy of fire prevention and the organization and operation of a fire prevention bureau. Students will examine the use of codes, the identification and correction of fire hazards, the components of detection and suppression systems, and the relationship of fire prevention with fire safety education.

Taxonomy of Programs (TOP) Code (CB03)

2133.00 - *Fire Technology

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

B (Transferable to CSU only)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

C - Clearly Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

Y - Not Applicable

Support Course Status (CB26)

N - Course is not a support course

Field trips

May be required

Grading method

Letter Graded

Alternate grading methods

Credit by exam, license, etc.

Does this course require an instructional materials fee?

No

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours

Carnegie Unit Override

No

In-Class

Lecture

Minimum Contact/In-Class Lecture Hours

52.5

Maximum Contact/In-Class Lecture Hours

52.5

Activity

Laboratory

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

52.5

Total Maximum Contact/In-Class Hours

52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class

Minimum Outside-of-Class Hours

105

Maximum Outside-of-Class Hours

105

Total Student Learning

Total Student Learning

Total Minimum Student Learning Hours

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Prerequisites

FT R151 or concurrent enrollment

Entrance Skills

Entrance Skills

Students need to know the educational requirements, duties and information sources of Fire Inspectors including various types of fire protection equipment.

Prerequisite Course Objectives

FT R151-Illustrate the various types of public and private fire protection equipment and systems.

FT R151-Describe the educational requirements, duties, and information sources for various occupations in fire protection.

Requisite Justification

Requisite Type

Prerequisite

Requisite

FTR151

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Concurrent

Requisite

FTR151

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Student Learning Outcomes (CSLOs)**Upon satisfactory completion of the course, students will be able to:**

- | | |
|---|--|
| 1 | Identify the components and explain the function of an egress system. |
| 2 | Identify special agent fire-extinguishing systems operation and maintenance. |

Course Objectives**Upon satisfactory completion of the course, students will be able to:**

- | | |
|----|--|
| 1 | Describe the origin and history of the fire prevention efforts in the United States. |
| 2 | Identify the basic fire prevention functions of the fire department. |
| 3 | Explain the responsibilities and authority for fire prevention inspections and related activities. |
| 4 | Define principles and procedures used to correct fire hazards. |
| 5 | Identify occupancies and building construction types. |
| 6 | Identify hazards of use, storage, and transfer of flammable liquids and gases and other hazardous materials. |
| 7 | Explain basic exiting requirements. |
| 8 | Recognize basic electrical hazards. |
| 9 | Recognize operational deficiencies in sprinkler systems, special fixed fire protection systems, standpipe systems, and detection and alarm systems. |
| 10 | Illustrate principles of placement, operation, and inspection of portable fire extinguishers. |
| 11 | Describe basic principles of fire cause determination as they relate to fire prevention and fire investigation. |
| 12 | Identify the plan review function of a fire prevention bureau. |
| 13 | Recognize the relationship between fire safety education and fire prevention. |
| 14 | Explain the importance of report preparation and records management in fire prevention efforts. |
| 15 | Identify laws, codes, ordinances and regulations as they relate to fire prevention. |
| 16 | Understand code enforcement as it impacts life and property loss. |
| 17 | Define the national fire problem and role of fire prevention. |
| 18 | Define laws, rules, regulations, codes and identify those relevant to fire prevention of the authority having jurisdiction. |
| 19 | Identify and describe the professional qualifications for Fire Marshal, Plans Examiner, Fire Inspector, Fire and Life Safety Educator and Fire Investigator. |
| 20 | List professional development opportunities. |

Course Content**Lecture/Course Content**

1. History and Development of Fire Preventions
 - a. Philosophy of Fire Prevention as a Fire Department function
 - b. Early Fire Prevention efforts in America
 - c. The Insurance Industry and Fire Prevention
 - d. Fire disasters as an incentive for Fire Prevention efforts.
2. Fire Prevention Organizations
 - a. Public
 - i. Federal
 1. U.S. Fire Administration
 2. Other Federal organizations
 - ii. State
 1. California State Fire Marshal
 2. Other State organizations

- iii. Local
 - 1. City Fire Departments
 - 2. Fire Districts
 - 3. Volunteer Fire Companies
 - b. Private
 - i. National Fire Prevention Bureau
 - ii. Underwriter's Laboratory
 - iii. Factory Mutual
- 3. Organization of a Fire Prevention Bureau
 - a. Functions
 - i. Inspections
 - ii. Code Enforcement
 - iii. Plan Review
 - iv. Public Education
 - v. Fire Investigation
 - vi. Weed Abatement
 - vii. Records Management
 - b. Fire Prevention Duties and Responsibilities
 - i. Fire Chief
 - ii. Fire Protection Engineer
 - iii. Fire Marshal/Prevention Officer
 - iv. Inspector, sworn
 - v. Inspector, civilian
 - vi. Fire Company Member
 - c. Fire Prevention Tools of the Trade
 - i. Uniform
 - ii. Protective Clothing
 - iii. Vehicle(s)
 - iv. Code Books
 - v. Related Reference Publications
 - vi. Printed Forms
 - vii. Non-Computerized Files
 - viii. Plan Review Materials
 - ix. Camera
 - x. Hydrant Test Flow Equipment
 - xi. Explosion Meter
 - xii. Other Tools
- 4. Building Codes and Fire Protection
 - a. Model Building Codes
 - i. Uniform Building Codes
 - ii. Building Officials and Code Administrators
 - iii. Standard Building Code
 - b. Other Codes
 - i. State Building Code (Title 24, CCR)
 - ii. National Electric Code
 - iii. Uniform Mechanical Code
 - c. Building Department / Fire Department Interface
- 5. Fire Codes and Fire Prevention
 - a. Uniform Fire Code
 - i. Format
 - ii. The Permit System
 - iii. The Code as 'Maintenance' Document
 - b. Title 19, California Code of Regulations
 - i. State Equivalent of Uniform Fire Code
 - ii. Applicable to State Buildings and Others
 - c. National Fire Codes
 - d. Other Fire Codes in the U.S
- 6. Structural Elements

- a. Building Construction Types
- b. Occupancy Classification
- c. Exiting Requirements
7. Inspection Procedures
 - a. Review of Records
 - b. Other Preparations
 - c. The Approach
 - d. The Inspection Tour
 - e. Identification and Documentation of Hazards
 - f. The Exit Interview
 - g. Follow-Up
 - h. Reports
8. Identification of Hazards
 - a. Common vs. Special Hazards
 - b. Hazard Types
 - i. Exiting
 - ii. Structural Deficiencies
 - iii. Hazardous Solids, Liquids, and Gases
 - iv. Electrical Hazards
 - v. Building Access
 - c. Non-Structural Hazards
 - i. Vegetation
 - ii. Transportation
 - iii. Outdoor Storage
 - iv. Rubbish
 - d. Deficiencies in Fire Protection Equipment and Systems
 - i. Fire Extinguishers
 - ii. Sprinkler Systems
 - iii. Detection and Alarm Systems
 - iv. 'Special' Systems
 - v. Water Supplies
9. Abatement and Mitigation of Hazards
 - a. Authority of Hazard Correction
 - b. Legal and Moral Responsibilities of Hazard Control
 - c. Prioritizing Hazards
 - d. Notices of Violations
 - e. Plans of Correction
 - f. The Citation Process
10. Fire Investigation
 - a. Arson Fires
 - b. Accidental Fires
 - c. Cause and Origin Determination
11. Public Safety Education
 - a. Exit Drills
 - b. Fire Watches
 - c. High-Rise Fire Safety
 - d. Other Educational Activities
 - e. Media Relations
12. Plan Review
 - a. Buildings
 - b. Fire Protection Systems
 - c. Water Supplies
 - d. Underground Flammable Liquid Tanks
 - e. Life Safety Systems
 - f. Residential Subdivisions
13. Report Preparation and Record Keeping
 - a. Recording fire injuries, deaths, and property losses
 - b. Measuring Effectiveness of Fire Prevention Bureau

- c. Computerized Record Keeping
- d. Record Keeping for Inspections
- e. Periodic Reports

Laboratory or Activity Content

none

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Computational homework
Essays
Film/video productions
Group projects
Individual projects
Oral analysis/critiques
Objective exams
Oral presentations
Problem-Solving Assignments
Problem-solving exams
Quizzes
Role playing
Reports/papers
Research papers
Simulations

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Computer-aided presentations
Collaborative group work
Class activities
Class discussions
Case studies
Distance Education
Demonstrations
Group discussions
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Internet research
Lecture
Role-playing
Small group activities

Describe specific examples of the methods the instructor will use:

1. Instructor will direct interactive instructional activities asking students to research requirements of ingress and egress requirements for different types of occupancies.
2. Instructor will present information on the different types of extinguishing systems for different types of occupancies.
3. Instructor will breakdown the Fire Code into different categories, articles, divisions and subsections.
4. Instructor will role-play the position of a Fire Inspector and actually conduct a fire prevention inspection and allow the students to observe this activity.
5. Instructor will develop small group exercises in which the students will identify different type of occupancies and the specific hazards associated.
6. Instructor will lead guided and focused discussions on the history of significant fires and their impact on building practices, fire suppression and the development of fire codes.

Representative Course Assignments

Writing Assignments

1. Summary reports written on articles read in technical journals and periodicals.
2. Term papers written to report on Fire Code adoption processes, the organization of a fire prevention bureau, agencies that contribute to fire prevention efforts in the United States or the effectiveness of fixed fire protection systems.
3. Presentations on different types of extinguishing systems found in different occupancies

Critical Thinking Assignments

1. Participate in small group discussions focusing on methods of egress in public assemblage occupancies
2. Participate in online discussions concerning the history of fire prevention.
3. Participate in focus groups concerning the advent of fire protection for civilians in high rise office buildings.
4. Participate in group activities and develop minimum qualifications for a fire prevention inspector, fire marshal and entry level employees.
5. Identify training programs for civilian use of fire suppression techniques.

Reading Assignments

1. Weekly assignments in required text and handouts (e.g. California Fire Code, California Health and Safety Code, Title 19, and professional journals (e.g. Fire Service, NFPA Fire Journal, Fire Chief)

Other assignments (if applicable)

N/A

Outside Assignments

Representative Outside Assignments

1. Students will read one chapter per week from assigned book.
2. Students will prepare and deliver presentations on occupancy types, common violations, and a mock fire prevention inspection.
3. Weekly short assignments related to class delivery and current fire prevention activities.
4. Internet inquiry activities relating to fire prevention inspections.
5. Complete an egress system project calculating occupant load and required exit doors.
6. Perform an analysis of historical disaster fires including Triangle Shirt Waste Factory fire.

Articulation

C-ID Descriptor Number

FIRE 110 X

Status

Approved

District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

Course is CSU transferable

Yes

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type

Textbook

Description

Valentine, Paul (2010). *Fire Prevention Applications for the Company Officer* (1st). Fire Protection Publications. 0132790629

Resource Type

Other Resource Type

Description

The American Fire Journal.

Resource Type

Textbook

Classic Textbook

Yes

Description

IFSTA, 8th Edition, *Fire Inspection and Code Enforcement*, 2016, 978-0134873916

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the Triangle Shirt Waist Factory and they will respond to another classmate or two with the intent for dialogue.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the Triangle Shirt Waist Factory and they will respond to another classmate or two with the intent for dialogue.
Synchronous Dialog (e.g., online chat)	Students will share their thoughts of the online lecture in an online chat with their classmates.
Other DE (e.g., recorded lectures)	Students will watch online lecture videos thru District LMS.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the Triangle Shirt Waist Factory and they will respond to another classmate or two with the intent for dialogue.
Synchronous Dialog (e.g., online chat)	Students will share their thoughts of the online lecture in an online chat with their classmates.
Other DE (e.g., recorded lectures)	Students will meet online with Instructor via Zoom.

Examinations

Hybrid (1%–50% online) Modality

Online
On campus

Hybrid (51%–99% online) Modality

Online
On campus

Primary Minimum Qualification

FIRE TECHNOLOGY

Review and Approval Dates

Department Chair

05/20/2020

Dean

05/20/2020

Technical Review

8/26/2020

Curriculum Committee

8/26/2020

Curriculum Committee

11/25/2020

CCCCO

MM/DD/YYYY

Control Number

CCC000070972

DOE/accreditation approval date

MM/DD/YYYY