

FT R167: FIRE EQUIPMENT AND APPARATUS

Originator

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College

Oxnard College

Discipline (CB01A)

FT - Fire Technology

Course Number (CB01B)

R167

Course Title (CB02)

Fire Equipment and Apparatus

Banner/Short Title

Fire Equipment and Apparatus

Credit Type

Credit

Start Term

Fall 2021

Catalog Course Description

This course will introduce the student to concepts related to fire service hand tools, fuel powered equipment, electric powered equipment and hydraulic powered equipment. Maintenance, safety and uses of this equipment will be covered in detail. Identification and typing of pumping apparatus and aerial ladder apparatus will be presented.

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

Will not be required

Grading method

Letter Graded

Does this course require an instructional materials fee?

No

Repeatable for Credit

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 have a basic understanding of fire apparatus, equipment and the general purpose of fire departments.

Prerequisite Course Objectives

FT R151-Define and describe the purpose and scope of fire departments.

FT R151-Explain the types of common fire department fire fighting apparatus, equipment, and personal safety equipment used for fire fighting.

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 various types of tools and apparatus that are used in the fire service. |
| 2 | Determine the proper tools for particular operations. |
| 3 | Recognize the hazards associated with tools used in the fire service. |
| 4 | Determine the proper safety equipment to use when operating equipment. |
| 5 | Identify various types of fire apparatus. |

Course Objectives

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

- | | |
|---|--|
| 1 | Distinguish between hand operated equipment, fuel powered equipment, hydraulic powered equipment and electrical equipment. |
| 2 | Classify apparatus by type and appropriate use during an emergency response. |
| 3 | Recognize hazards associated with hand operated tools, fuel powered equipment and fire service apparatus. |
| 4 | Explain functions of hand operated tools, fuel powered equipment and fire service apparatus. |
| 5 | Identify names and uses of all hand operated equipment. |

Course Content

Lecture/Course Content

A. Hand Powered Equipment and Tools

1. Digging Tools
2. Striking Tools
3. Prying Tools
4. Forcible Entry Tools
5. Other Manual Tools

B. Gasoline Powered Equipment

1. Cutting Tools
2. Prying Tools
3. Other Related Equipment

C. Electric Powered Equipment

1. Cutting Tools
2. Drilling Tools
3. Lighting Tools
4. Other Related Equipment

D. Hydraulic Powered Equipment

1. Extrication Tools
2. Cutting Tools
3. Extension Rams

E. Pumping Apparatus

1. Apparatus Types and Uses
2. Pump Design
3. Pump Accessories
4. Pump Troubleshooting
5. Equipment Carried on Apparatus

F. Aerial Ladder Apparatus

1. Apparatus Types and Uses
2. Aerial Ladder Construction
3. Aerial Ladder Troubleshooting
4. Equipment Carried on Apparatus

G. Specialized Equipment

1. Variations and Combinations of Pump/Aerial Apparatus
2. Fire Boats, Airport Apparatus and Misc. Apparatus

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
Group projects
Individual projects
Oral analysis/critiques
Objective exams
Oral presentations
Projects
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
Class activities
Class discussions
Case studies
Distance Education
Group discussions
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Lecture
Role-playing

Describe specific examples of the methods the instructor will use:

1. Instructor will direct interactive instructional activities asking students to research different types of fire apparatus and associated equipment.
2. Instructor will present information on the differences between manual, electrical and hydraulic tools.
3. Instructor will present information on safety while operating any tools.
4. Small group activity will focus on tool safety, maintenance, operations and associated personal protective equipment.
5. Instructor will develop small group exercises in which the students will identify needed tools and equipment for a specific fire company operation.
6. Instructor will lead guided and focused discussions on the history of fire apparatus, equipment and tools and how they became modernized.

Representative Course Assignments

Writing Assignments

- A. Written reports identifying hand tools
- B. Written reports identifying tool safety and maintenance
- C. Written reports identifying differences between fuel powered equipment, hydraulic equipment and electric equipment

Critical Thinking Assignments

1. Participate in small group discussions focusing on proper tool selection for specific emergency incidents.
2. Participate in online discussions concerning the differences between fire trucks and fire engines.
3. Participate in group activities with the goal of selecting the correct fire apparatus for different specific emergency incidents.
4. Participate in group activities identify fire ground operations where equipment failure impacted the safety of firefighters.
5. Identify the National Fire Protection Association minimum standards for firefighter apparatus.

Reading Assignments

- A. Maintenance manuals and safety manuals
- B. Fire Department tool manuals
- C. Manufacturing manuals and specifications

Other assignments (if applicable)

None

Outside Assignments

Representative Outside Assignments

1. Students will read one chapter per week from assigned book.
2. Students will prepare and deliver presentations on fire apparatus including fire engines, trucks, boats, helicopters and aircraft.
3. Weekly short assignments related to class delivery and current fire prevention activities.
4. Students will prepare and deliver presentations on manual, hydraulic and electrically operated tools used in the fire service.
5. Complete an online group activity "tool bee" identifying different tools by name.
6. Identify emergency responses that led to traffic accidents resulting in civilian/firefighter injury or death.

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**

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

IFSTA, Fire Protection Publications (2013). *Essentials of Fire Fighting* (6th Edition). Most recent available IFSTA.

Resource Type

Other Resource Type

Description

Vehicle Code, State of California, Department of Motor Vehicles.

Resource Type

Other Resource Type

Description

Workbook.

Resource Type

Textbook

Classic Textbook

Yes

Description

"Essentials of Fire Fighting", 7th Edition, 2019, Fire Protection Publications, Oklahoma State University

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 of fire apparatus pictures. Students will be required to name apparatus type in each picture.

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 of fire apparatus pictures. Students will be required to name apparatus type in each picture.
Synchronous Dialog (e.g., online chat)	Students will share their thoughts of the online lecture in an online chat with their classmates.

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 of fire apparatus pictures. Students will be required to name apparatus type in each picture.
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 and they will be recorded.

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

05/22/2020

Dean

05/22/2020

Technical Review

08/26/2020

Curriculum Committee

08/26/2020

Curriculum Committee

11/25/2020

CCCCO

MM/DD/YYYY

Control Number

CCC000280799

DOE/accreditation approval date

MM/DD/YYYY