FIRE 74 Course Outline as of Fall 2008

CATALOG INFORMATION

Dept and Nbr: FIRE 74 Title: FIRE PROT EQUIP & SYS
Full Title: Fire Protection Equipment and Systems
Last Reviewed: 11/25/2019

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 54

Catalog Description:
This course will cover the selection of the appropriate fire extinguisher for any given hazard; protection systems for special hazards, sprinkler systems, fire detection, and alarm systems. The course content is designed to provide up-to-date information on fire detection and suppression systems.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100.

Limits on Enrollment:

Schedule of Classes Information:
Description: State Core Course. Appropriate fire extinguishing equipment; protection systems for special hazards; sprinkler systems, fire detection, and alarm systems. This course includes one field trip. (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:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 1984	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of the course, the student will be able to:
1. List two methods of extinguisher recognition.
2. Identify how extinguishers are grouped into fire classifications.
3. Describe several different extinguishing agents used to combat fires.
4. Differentiate types of extinguishers and their distribution.
5. Describe the general technique and application of fire extinguishers.
6. Describe the basic components of a modern fire detection and signaling system.
7. List the common types of signaling systems and describe their operation.
8. List the properties of water and other extinguishing agents.
9. List the factors and conditions that contribute to friction loss in fire hose and pipes.
10. List the basic components of a municipal water supply system.
11. Describe the water supply requirements for a standpipe and hose system.
12. Describe the most common types of fire pumps.
13. Explain the different classes of standpipe systems and their intended uses.
14. Identify the various types of fire sprinkler systems.
15. List the basic components of piping used in sprinkler systems.
16. Identify inspection criteria for fire sprinkler systems.
17. Describe the major distinctions between an automatic sprinkler system and a specialized extinguishing system.

Topics and Scope:

I. Fire Extinguishing Agents and Portable Fire Extinguishers
   A. Extinguisher symbols
      1. Pictorial systems
      2. Letter-symbol system
   B. How extinguishers are rated
      1. Class A

2. Class B
3. Class C
4. Class D
5. Class K

C. Extinguishing agents
1. Water
2. Antifreeze
3. Carbon dioxide
4. Aqueous film forming foam
5. Film forming fluoroprotein
6. Halons
7. Dry chemical agents

D. Types of fire extinguishers
1. Selection and distribution of extinguishers
2. Installation and placement of extinguishers
3. Portable fire extinguishers on fire apparatus
4. Inspecting, maintaining, and recharging extinguishers
5. Hydrostatic testing

E. Using portable extinguishers
1. General techniques
2. P.A.S.S. Method (Pull, Aim, Squeeze, Sweep)
3. Attacking Class A fires
4. Attacking Class B fires
5. Attacking Class C fires
6. Attacking Class D fires
7. Attacking Class K fires

II. Fire Detection and Signaling Systems
A. Basic system components
B. Types of signaling systems
C. Manual alarm-initiating devices
D. Automatic alarm-initiating devices
E. Inspecting and testing fire detection and signaling systems
F. Record keeping

III. Introduction to Water Supply
A. Characteristics of water
B. Understanding water supply
C. Friction loss
1. Principles of friction loss
2. Reducing friction loss
3. Water hammer
D. Principles of municipal water supply systems
E. Private water supply systems
F. Water supply requirements for standpipe and hose systems
G. Water supply requirements for automatic sprinkler systems

IV. Fire Pumps
A. Types of pumps
B. Pump components and accessories
C. Testing, inspection, and maintenance of fire pumps

V. Standpipes and Hose Systems
A. Classification of standpipe systems
B. Types of standpipe systems
C. Fire department connections

D. Water supply considerations
E. Water pressure considerations
F. Inspecting and testing standpipes

VI. Automatic Sprinkler Systems
A. Components of sprinkler systems
B. Sprinkler system piping and fittings
C. Fire department connections
D. Types of sprinkler systems
E. Inspecting and testing sprinkler systems
F. Restoring sprinkler systems
G. Residential sprinkler systems

VII. Special Extinguishing Systems
A. Wet chemical extinguishing systems
B. Dry chemical extinguishing systems
C. Gaseous systems
D. Foam extinguishing systems

Assignment:

1. Reading 20-30 pages from textbook
2. Completion of 17 weekly assignment sheets
3. Quizzes, midterm, and final exam
4. Scenarios and role playing
5. Classroom oral presentation
6. Term project and/or internet research project
7. One field trip

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	Writing 10 - 20%

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

Scenarios	Problem solving 5 - 10%

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	Exams 60 - 80%

Other: Includes any assessment tools that do not logically fit into the above categories.

Oral presentation, field trip	Other Category 5 - 10%

Representative Textbooks and Materials:

Fire Detection and Suppression Systems, International Fire Service Training Association (IFSTA), current edition