FIRE 71 Course Outline as of Fall 2024

CATALOG INFORMATION

Dept and Nbr: FIRE 71 Title: FIRE PROTECTION ORG.
Full Title: Fire Protection Organization
Last Reviewed: 10/14/2019

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	6	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 51

Catalog Description:
This course provides an overview to fire protection and emergency services, career opportunities in fire protection and related fields; culture and history of emergency services, fire loss analysis; organization and function of public and private fire protection services; fire departments as a part of local government, laws and regulations affecting the fire service, fire service nomenclature, specific fire protection functions, basic fire chemistry and physics, introduction to fire protection systems, introduction to fire strategy and tactics and life safety initiatives. (Grade Only)

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: This course provides an overview to fire protection and emergency services, career opportunities in fire protection and related fields; culture and history of emergency services, fire loss analysis; organization and function of public and private fire protection services; fire

departments as a part of local government, laws and regulations affecting the fire service, fire service nomenclature, specific fire protection functions, basic fire chemistry and physics, introduction to fire protection systems, introduction to fire strategy and tactics and life safety initiatives. (Grade Only) (Grade Only)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent
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:	Fall 1981	Inactive:	
UC Transfer:		Effective:		Inactive:	

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. Describe the fire science educational path and the firefighter selection process.
2. Identify and describe fire protection career opportunities in the fire service.
3. Describe the history of fire protection in America and the current public fire protection system.

Objectives:
At the conclusion of this course, the student should be able to:
1. Describe the fire science educational path and the firefighter selection process
2. Identify and describe fire protection career opportunities in the fire service.
3. Describe the history of fire protection in America and the current public fire protection System.
4. Describe the fundamentals of the chemistry and physics of fire.
5. Describe the various private and public fire support organizations.
6. Describe the apparatus, tools, equipment and other resources used in the fire service.
7. Identify and describe the principles of management, command and communication used in fire department operations.
8. Describe the various support entities used in fire department operations.
9. Describe the role of a fire department training bureau and the different types of training performed in the fire service.
10. Describe the role of a fire department prevention bureau and the activities they perform.

11. Describe the legal system as it pertains to enforcement of fire codes and regulations, the code development process and activities at incidents personnel used in the fire service and the roles they play.
12. Describe the different types of fire protection systems and extinguishing agents used in the fire service.
13. Describe the types of management systems used in the fire service and their components.
14. Identify the important considerations when working at a variety of emergency incidents.

Topics and Scope:

I. Fire Science Education and the Firefighter Selection Process
- A. Difference between training and education
- B. College fire science programs
  1. Associate degree programs
  2. Certificates
  3. Baccalaureate degree programs
  4. On-line programs
  5. Master's degree programs
- C. Federal, State and local Fire Training programs
- D. Assessing your career potential
- E. Human relation and work ethic
- F. Firefighter selection process
  1. Recruitment process
  2. Application process
  3. Written examination
  4. Skills testing
  5. Oral examination
  6. Physical agility testing
  7. Psychological testing
  8. Background examination
  9. Final interview
  10. Medical examination
  11. Probationary period

II. Fire Service Careers
- A. Entry level public careers
  1. Firefighter
  2. Firefighter/paramedic
  3. Wildland firefighter
  4. Fire heavy equipment operator
- B. Civilian positions
  1. Fire Prevention Specialist
  2. Hazardous Materials Program Specialist
  3. Fire Safety/Public Education Specialist
  4. Dispatcher
  5. Emergency Services Manager
- C. Private careers
  1. Firefighter
  2. Loss prevention specialist
  3. Inspector
  4. Claims adjuster

5. Investigator
6. Fire protection engineer
7. Fire sprinkler fitter

III. Public Fire Protection
- A. The evolution of fire protection efforts
- B. The history of wildland fire in America
- C. The evolution of modern firefighting equipment
- D. Fire service symbols
- E. The evolution of fire stations
- F. The effect of major fire losses on fire science
- G. The U.S. fire problem
- H. Purpose and scope of fire agencies
- I. The future of fire protection

IV. Chemistry and the Physics of Fire
- A. The fire triangle and tetrahedron
- B. The relationship of fuels and oxidizers in fire chemistry
- C. Physics of fire and the three states of matter
- D. The effect of heat and temperature
- E. Methods of heat transfer
  1. Radiation
  2. Convection
  3. Conduction
  4. Direct contact
- F. Classifications of fire
  1. Ordinary combustibles
  2. Flammable liquids
  3. Electrical equipment
  4. Combustible metals
  5. Combustible cooking
- G. Stages of fire
  1. Incipient
  2. Free burning
  3. Flashover
  4. Smoldering/decay

V. Public and Private Support Organizations
- A. National and international support organizations
  1. National Fire Protection Association (NFPA)
  2. Hazardous Materials Transportation and Storage organizations
     a. U.S. Department of Transportation (DOT)
     b. Association of American Railroads
     c. American Petroleum Institute
     d. Chemical Transportation Emergency Center (CHEMTREC)
  3. Fire protection systems and equipment organizations
     a. American Fire Sprinkler Association
     b. Factory Mutual Global
     c. National Fire Sprinkler Association
  4. Codes and standards organizations
     a. American National Standards Institute
     b. International Conference of Building Officials
     c. International Fire Code Institute
     d. National Safety Council
  5. Disaster assistance and recovery organizations

a. American Red Cross
b. Salvation Army

6. Professional accreditation and certification organizations
   a. Board of Certified Safety Professionals
   b. International Fire Service Accreditation Congress (IFSAC)
   c. National Board on Fire Service Professional Qualifications (Pro-Board)
7. Professional research organizations
   a. Society of Fire Protection Engineers
   b. Underwriters Laboratories
8. Personnel and training support organizations
   a. International Association of Fire Chiefs (IAFC)
   b. International Association of Firefighters (IAFF)
   c. National Volunteer Fire Council (NVFC)
   d. International Association of Arson Investigators (IAAI)
   e. National Fallen Firefighters Foundation (NFFF)
   f. National Wildfire Coordinating Group (NWCG)
   g. International Society of Fire Service Instructors (ISFSI)
   h. International City Manager's Association (ICMA)
9. Insurance Providers - Insurance Service Office (ISO)
10. Emergency medical service organizations
    a. International Rescue and Emergency Care Association
    b. National Association of Emergency Medical Technicians
    c. National Registry of Emergency Medical Technicians

B. Federal Organizations
1. Department of Defense
2. Department of Labor
3. Emergency Management Institute
4. National Emergency Training Center
5. National Institute for Occupational Health and Safety
6. National Incident Management System
7. National Integration Center
8. National Institutes of Standards and Technology (NIST)
9. U.S. Department of Agriculture Forest Service
10. U.S. Department of Homeland Security
11. U.S. Department of the Interior
12. National Firefighting Equipment System
13. National Interagency Fire Center
14. Federal Emergency Management Agency
15. National Fire Academy
16. Fire and Emergency Services Higher Education Conference (FESHE)
17. Department of Alcohol, Tobacco and Firearms
18. Occupational health and Safety Administration (OSHA)
19. Environmental Protection Agency
20. U.S. Coast Guard

C. State support organizations
1. Office of State Fire Marshal
2. State Fire Training
3. State Emergency Management Agency
4. State Fire Chief's Association
5. State Forestry Departments
6. State Occupational Health Administrations

D. Local support organizations

1. Local government
2. Health departments
3. Law enforcement
4. Building departments
5. Water departments
6. Street departments
7. Zoning/Planning Commission
8. Local Emergency Operations Center (EOC)
9. Firefighter's Unions

VI. Fire Department Resources
- A. Fire department facilities
- B. Common fire apparatus
- C. Fire department tools and appliances
- D. Heavy tools and equipment
- E. Personal protective equipment (PPE)
- F. Firefighting aircraft

VII. Fire Department Administration
- A. The six principles of command
  1. Unity of command
  2. Chain of command
  3. Span of control
  4. Division of labor
  5. Delegation of authority
  6. Exception principle
- B. The six components of the management cycle
  1. Planning
  2. Organizing
  3. Staffing
  4. Directing
  5. Controlling
  6. Evaluating
- C. Different types of fire departments
- D. Four methods of communication
  1. Face-to-face
  2. Radio/telephone
  3. Written
  4. Electronic

VIII. Support Functions
- A. The role of dispatch
- B. Transmission of alarms
- C. Fire investigation units
- D. Hazardous materials units
- E. Role of aides or adjutants
- F. Technical support units
  1. Legal services
  2. Investigation units
  3. Weather services
  4. Emergency Medical Services (EMS)
- G. Information systems
- H. Human resources
- I. Business services
- J. Central stores

K. Repair garage
L. Radio shop

IX. Training
A. Training bureau positions
B. Value of inter-agency training
C. Training facilities
D. Differences between technical and manipulative training
E. Determining performance standards and adequate levels of training
F. Use of Standard Operating Procedures (SOP's) in training
G. Importance of maintaining training records
H. The relationship of training to incident effectiveness
I. Required training
J. Safety practices when training

X. Fire Prevention
A. Roles played of a fire prevention bureau
B. Implementing fire prevention activities
C. Fire prevention methods
D. Importance of fire information reporting

XI. Codes and Ordinances
A. Types of laws in the United States
B. The court system
C. Handling personnel complaints
D. Legal components of fire prevention activities
E. The code development process
F. Legal considerations at emergency incidents

XII. Fire Protection Systems and Equipment
A. Components of a public and private water system
B. Importance of a dependable water system
C. Components of a fire department water supply program
D. Fire detection systems and their components
E. Fire extinguishing agents
F. Fire extinguishing systems and their components

XIII. Emergency Incident Management
A. Responsibility for management at an emergency scene
B. The need for an action plan at every incident
C. The five major components of the National Incident Management System (NIMS)
D. The components of the Incident Command System (ICS)
E. ICS positions and their functions

XIV. Emergency Operations
A. Personnel who work at emergency scenes
B. The 16 Firefighter Life Safety Initiatives
C. Considerations when working at a structure fire
D. Considerations when working at a wildland fire
E. Considerations when working at an electrical fire
F. Considerations when working at a Wildland Urban Interface (WUI) fire
G. Considerations when working at a flammable liquid fire
H. Considerations when working at a hazardous materials/weapons of mass destruction incident
I. Considerations when working at vehicle/highway incidents
J. Considerations when working at an aircraft fire
K. Considerations when working at a technical rescue incident
L. Decision making skills and their relation to incident safety

Assignment:

1. Reading 20-30 pages from textbook per week
2. Completion of up to 17 weekly assignment sheets
3. Weekly quiz(zes) (1 - 10)
4. Midterm and final exam
5. Written essay(s) (2 - 3), including autobiorgraphy and history essay
6. Term project or internet research project
7. Class oral or power point presentation
8. Field trip(s) (1 - 2)

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.

Autobiography, weekly assignment sheets, history essay, term project	Writing 10 - 20%

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

Homework problems, Quiz(zes)	Problem solving 5 - 10%

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

Class oral or powerpoint presentation	Skill Demonstrations 5 - 15%

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

Quiz(zes), Midterm, Final exam	Exams 60 - 70%

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

Internet research project, field trip(s)	Other Category 10 - 20%

Representative Textbooks and Materials:
Fire Service Orientation and Terminology. 6th ed. International Fire Service Training Association (IFSTA). 2015 (classic)
Introduction to Fire Protection. 4th ed. Klinoff, Robert. Thomson Delmar Learning. 2011 (classic)
Fire Fighters, Stories of Survival From the Front Lines of Firefighting. Willis, Clint. Thunder Mouth Press. 2002 (classic)