COURSE ID: FIRE 745    TITLE: Fire Protection Systems
Units: 3.0 units   Hours/Semester: 48.0-54.0 Lecture hours; and 96.0-108.0 Homework hours
Method of Grading: Letter Grade Only
Recommended Preparation:
Eligibility for ENGL 100 or 105. FIRE 715

2. COURSE DESIGNATION:
Degree Credit
Transfer credit: CSU

3. COURSE DESCRIPTIONS:
Catalog Description:
This course provides information relating to the features of design and operation of fire alarm systems,
water-based fire suppression systems, special hazard fire suppression systems, water supply for fire
protection and portable fire extinguishers.

4. STUDENT LEARNING OUTCOME(S) (SLO'S):
Upon successful completion of this course, a student will meet the following outcomes:
1. Identify and describe various types and uses of fire protection systems
2. Describe the basic elements of a public water supply system as it relates to fire protection

5. SPECIFIC INSTRUCTIONAL OBJECTIVES:
Upon successful completion of this course, a student will be able to:
1. Explain the benefits of fire protection systems in various types of structures
2. Describe the basic elements of a public water supply systems including sources, distribution networks,
piping and hydrants
3. Explain why water is a commonly used extinguishing agent
4. Identify the different types and components of sprinkler, standpipe and foam systems
5. Review residential and commercial sprinkler legislation
6. Identify the different types of non-water based fire suppression systems
7. Explain the basic components of a fire alarm system
8. Identify the different types of detectors and explain how they detect fire
9. Describe the hazards of smoke and list the four factors that can influence smoke movement in a building
10. Discuss the appropriate application of fire protection systems
11. Explain the operation and appropriate application for the different types of portable fire protection systems

6. COURSE CONTENT:
Lecture Content:
1. Introduction to Fire Protection Systems
   A. The Role Fire Protection Systems Play in Protecting the Life, Safety and Welfare of the General
      Public and Firefighters
   B. Overview of the Different Types of Fire Protection Systems
   C. The Role of Codes and Standards in Fire Protection System Design
2. Water Supply Systems for Fire Protection Systems
   A. Sources of Fire Protection Water Supply
   B. Distribution Networks
   C. Piping
   D. Hydrants
   E. Utility Company Interface with the Fire Department
3. Water-Based Fire Suppression Systems
   A. Properties of Water
      a. Water as an Effective Extinguishing Agent
      b. How Water Extinguishes Fire
   B. Sprinkler Systems
      a. Types of Systems and Applications
      b. Types of Sprinklers and Application
c. Piping, Valves, Hangers and Alarm Devices
d. Fire Department Operations in Buildings with Sprinkler Systems

C. Residential Sprinkler Systems
D. Standpipe Systems
   a. Types and Application
   b. Fire Department Operations in Buildings with Standpipes
E. Foam Systems
F. Water Mist Systems
G. Fire Pumps
   a. Types
   b. Components
   c. Operation
   d. Fire Pump Curves

4. Non-Water-Based Fire Suppression Systems
   A. Carbon Dioxide Systems
      a. Applications
      b. Extinguishing Properties
      c. System Components
   B. Halogenated Systems
      a. Halon 1301 and the Environment
      b. Halon Alternatives
      c. Extinguishing Properties
      d. Systems Components
   C. Dry/Wet Chemical Extinguishing Systems
      a. Extinguishing Properties
      b. Applications
      c. UL 300

5. Fire Alarm Systems
   A. Components
   B. Types of Fire Alarm Systems
   C. Detectors
      a. Smoke
      b. Heat
      c. Flame
   D. Audible/Visual Devices
   E. Alarm Monitoring
   F. Testing and Maintenance of Fire Alarm Systems

6. Smoke Management Systems
   A. Hazards of Smoke
   B. Smoke Movement in Buildings
   C. Types of Smoke Management Systems
   D. Firefighter Operations in Buildings with Smoke Management Systems

7. Portable Fire Extinguishers
   A. Types and Applications
   B. Selection
   C. Placement
   D. Maintenance
   E. Portable Fire Extinguisher Operations

7. REPRESENTATIVE METHODS OF INSTRUCTION:
   Typical methods of instruction may include:
   A. Lecture
   B. Activity
   C. Discussion

8. REPRESENTATIVE ASSIGNMENTS
   Representative assignments in this course may include, but are not limited to the following:
   **Reading Assignments:**
       Assigned reading for class session
   **Other Outside Assignments:**
9. REPRESENTATIVE METHODS OF EVALUATION
Representative methods of evaluation may include:
A. Class Participation
B. Oral Presentation
C. Quizzes
D. Written examination

10. REPRESENTATIVE TEXT(S):
Possible textbooks include:

Origination Date: August 2016
Curriculum Committee Approval Date: October 2016
Effective Term: Fall 2017
Course Originator: Michelle Schneider