1. **COURSE ID:** FIRE 745  
   **TITLE:** Fire Protection Systems  
   **C-ID:** FIRE 120X  
   **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 ENGL 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. 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.

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:
      Preparation of oral presentation

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 2020  
**Curriculum Committee Approval Date:** October 2020  
**Effective Term:** Fall 2021  
**Course Originator:** Michelle Schneider