Lassen Community College Course Outline

FS 4 Fire Protection Equipment and Systems 3.0 Units

I. Catalog Description

This course provides an introduction to the design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. This course meets the National Fire Academy, Fire and Emergency Services Higher Education (FESHE) curriculum model for Fire Protection Systems. This course has been approved for online, hybrid and correspondence delivery.

Diversity Statement

Our commitment to diversity requires that we strive to eliminate barriers to equity and that we act deliberately to create a safe and inclusive environment where individual and group differences are valued and leveraged for the growth and understanding as an educational community.

Recommended Preparation: Successful completion of ENGL105 or equivalent multiple measures placement.

Additional Course Information:
Transfer Status: Transfers to CSU
Total Number of Hours by Instructional Method: 51 hours of lecture, 102 expected outside of class hours, 153 Total Hours of Instruction
Scheduled: Fall (odd)

II. Coding Information

Repeatability: Not repeatable
Grading Option: Graded
Credit Type: Credit –Degree Applicable
TOP Code: 2133.00

III. Course Objectives

A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

1. Describe smoke and fire movement in various types of building construction.
2. List organizations that provide information or service to fire protection systems.
3. List types, components and operation of automatic sprinkler and fire alarm systems.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Describe smoke and fire movement in various types of building construction.
2. List organizations that provide information or service to fire protection systems.
3. Define types, classifications, and effectiveness ratings of fire extinguishers.
4. List the distribution, installation, and test requirements for fire extinguishers.
5. List types, components, and operation of fire protection systems and equipment for special hazards.
6. Identify water supply requirements, distribution systems, and testing for public and

private fire protections.

7. Explain the application of hydraulic theory for fire protection.
8. List types, components and operation of automatic and special sprinkler systems.
9. List types of standpipe systems and water supply requirements.
10. Compare detection, alarm, and supervisory devices and systems.
11. Compare heat and smoke control devices and hardware.

IV. Course Content

A. Fire Cause and Effect Overview
B. Portable Fire Extinguishers
C. Characteristics of Protection Systems and Equipment for Special Hazards
D. Public and Private Water Supplies, Equipment, and Services for Fire Protection
E. Sprinkler Protection
F. Protective Signaling Systems
G. Standpipe Systems
H. Heat and Smoke Control Systems

V. Assignments

A. Appropriate Readings
Assigned readings in the textbook

B. Writing Assignments
Research papers on residential, commercial, industrial, and school sprinkler protection systems; operation of various types of fire sprinkler systems; fundamentals of fire prevention equipment.

C. Expected Outside Assignments
Reading of textbook and other materials on fire prevention equipment. Research for and writing research papers. Students will be required to complete two hours of outside-of-class homework for each hour of lecture.

D. Specific Assignments that Demonstrate Critical Thinking
Analyze current requirements for residential fire sprinkler systems and their effect on fire prevention.

VI. Methods of Evaluation

Traditional Evaluation
Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation.

Hybrid Evaluation
Quizzes and exams could be administered in person and/ or online. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

Online Evaluation
A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications using the districts approved learning management system.

VII. Methods of Delivery

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

☒ Traditional Classroom Delivery
☐ Correspondence Delivery
☒ Hybrid Delivery
☒ Online Delivery

Traditional Classroom Delivery
Lecture, discussion, audio/visual aids, demonstration, group exercises, guest speakers, lab, individualized programs and other as needed.

Hybrid Delivery
A combination of traditional classroom and online instruction will be utilized. Each semester a minimum of 17 hours, or 1/3 of the instruction hours, will be taught face-to face by the instructor and the remaining hours will be instructed online through the technology platform adopted by the District. Traditional class instruction could consist of exercises/assignments, lectures, visual aids, practice exercises, exams and quizzes. Online delivery could consist of exercises/assignments, lecture posts, discussions, exams and quizzes, adding extra resources and other media sources as appropriate.

Online Delivery
A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications using the districts approved learning management system.

VIII. Representative Texts and Supplies

A. Jones, Maurice; *Fire Protection Systems,* 3rd edition 2021, Jones & Bartlett, ISBN 9781284180138

IX. Course Status

1. Current Status: Active
2. Original Approval Date: April 23, 1996
3. Course Originator:
4. Board Approval Date:
5. Chancellor's Office Approval Date:
6. Revised by: Dan Weaver
7. Curriculum/Academic Standards Committee Revision Date: 05/07/2024