

Lassen Community College Course Outline

FS 97 Fire Control 4: Controlling Ignitable Liquids and Gases 0.5 units

I. Catalog Description

This course provides the knowledge and skills that prepare a firefighter to extinguish an ignitable liquid fire, control a flammable gas fire, and develop an incident action plan for a pipeline emergency. Participants will learn and practice modern vehicle firefighting techniques. Subjects include fire behavior, safety, control methods and extinguishing agents, transportation fires and water flow requirements. A supplemental \$81.00 fee will be charged including a \$5.00 materials fee for student manual flash drive and a \$76.00 State Fire Training FSTEP certification fee is due to Lassen Community College and will be collected at the time of registration.

Recommended Preparation: Successful completion of ENGL 105 or equivalent multiple measures placement.

Pre-Requisite(s):-SFT Firefighter I training (completion of education requirements), or 2 years' experience as a volunteer firefighter.

FS-72 HazMat First Responder Operations or equivalent through SFT or CSTI – First Responder Hazmat Operational (FRO)

Transfer Status: NT

6.5 Hours Lecture, 9.5 Hours Lab, 13 Hours Outside Study: 29 Total hours of Student Learning

Scheduled: Summer, Spring (even)

II. Coding Information

Repeatability: Repeatable as needed for Certification

Grading Option: Graded

Credit Type:

TOP Code: 213300

III. Course Objectives

A. Course Student Learning Outcomes

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

1. Understand elements involved in extinguishing a vehicle fire including vehicle dangers, apparatus positioning, handline selection and fire attack.
2. Describe characteristics and hazards of flammable gasses and liquids
3. Define and use safety procedures for used in extinguishing liquid fire verses flammable gas fire
4. Identify extinguishing agents and methods of use
5. Be able to develop an initial incident action plan by evaluating and implementing critical safety and tactical considerations when given a response scenario involving a pipeline emergency

B. Course Objectives

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

1. Understand elements involved in extinguishing a vehicle fire including vehicle

- dangers, apparatus positioning, handline selection and fire attack.
2. Recognize characteristics and hazards of flammable gasses and liquid
 3. Identify methods and procedures on handling flammable gasses and liquid
 4. Identify laws and regulations pertaining to flammable liquids in California and at the national level.
 5. Have an opportunity to utilize control methods on flammable gasses and liquids

IV. Course Content

- A. Extinguishing an Ignitable Liquid Fire with Foam**
 - a. Discuss methods by which foam prevents or controls hazard
 - b. Identify Causes of poor foam generation and corrective measures
 - c. Identify the characteristics uses and limitations of firefighting foams
 - d. Describe foam stream application techniques
- B. Controlling a Flammable Gas Fire**
 - a. Identify characteristics of pressurized flammable gases
 - b. Describe effects of heat and pressure on closed cylinders
 - c. Describe (BLEVE) signs and effects
 - d. Describe how it identify escape routes and safety zones before approaching flammable gas cylinder fires
 - e. Describe water stream usage and demands for pressurized cylinder fires
- C. Identifying Pipeline Regulations**
 - a. Describe basic types and categories of pipeline systems
 - b. Describe primary state agencies that regulate pipeline operations
 - c. Identify rules and regulations that govern design, construction, operation safety and maintenance of interstate pipelines
 - d. Identify Primary causes of pipeline incidents
- D. Identifying Pipeline Operations**
 - a. Identify basic design and construction features of a pipeline system
 - b. Identify where pipelines are located within California
 - c. Describe the purpose of pipeline rights-of-way
 - d. Identify clues that , in the absence of markers, may incite the presence of an underground pipeline
- E. Identifying Hazards Associated with Liquid Pipeline Products**
 - a. Identify hazards associated with liquids transported through a pipeline given a list of pipeline products and Safety data sheets (SDS).
- F. Identifying Hazards Associated with Gas Pipeline Products**
 - a. Identify hazards associated with gases transported through a pipeline given a list of pipeline products and Safety data sheets (SDS).
- G. Developing an Incident Action Plan**
 - a. Describe general hazard and risk issues to evaluate when responding to a pipeline emergency
 - b. Describe key considerations to evaluate when developing an initial incident action plan.

V. Assignments

A. Appropriate Readings

Fundamentals of Fire Fighter Skills, by IAFC, Jones & Bartlett Learning, 3rd edition, ISBN: ISBN-13: 9781449641528)
Pipeline Emergencies (Noll, Gregory G., Hildebrand, Michael S., Red Hat Publishing Company, Inc., 2nd edition) Note: Must create a free account on the pipelineemergencies.com in order to download this textbook

- Emergency Response Guide (U.S. Department of Transportation, current edition)

B. Writing Assignments

Prepare an Incident action plan

C. Expected Outside Assignments

Properly Don Personal Protective Equipment

D. Specific Assignments that Demonstrate Critical Thinking

Examine, critique and review different types of flammable gas and liquid hazards

VI. Methods of Evaluation

Traditional Evaluation

Skills Testing

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.

VIII. Representative Texts and Supplies

Student will be expected to use and maintain SCBA and mask for use provided during class.

IX. Discipline/s Assignment

Fire Technology

X. Course Status

Current Status: Active

Original Approval Date: 09/17/2019

Board Approval Date: 10/08/2019

Chancellor's Office Approval Date: 10/16/2019

Revised By: Dan Weaver

Curriculum/Academic Standards Committee Revision Date: 10/04/2022