

FIRE 0172 - INTERMEDIATE WILDLAND FIRE BEHAVIOR S-290

Catalog Description

Prerequisite: Completion of FIRE 171 with grade of "C" or better or a certified S-190 course as prescribed by the National Wildfire Coordinating Group

Hours: 40 lecture

Description: Aligns with S-290 Intermediate Fire Behavior of the National Wildfire Coordinating Group (NWCG). Provides professional development related to the topic of wildland fire behavior. Provides instruction in the identification and prediction of wildland fire behavior in various fuel types and under varying weather conditions. Prepares municipal, county, state, and federal fire personnel to meet certification standards set forth by the National Inter-agency Incident Management System. (C-ID FIRE 241X) (not transferable)

Course Student Learning Outcomes

- CSLO #1: Compare and contrast three methods of heat transfer.
- CSLO #2: List the seven wildland fire environment factors to monitor on the fireline.
- CSLO #3: Describe how rate of spread and flame length react to changes in fuel, fuel moisture, wind and slope.
- CSLO #4: Explain the significance of the earth's "heat balance."

Effective Term

Fall 2022

Course Type

Credit - Degree-applicable

Contact Hours

40

Outside of Class Hours

80

Total Student Learning Hours

120

Course Objectives

1. Identify and describe the characteristics of fuels, weather, and topography that influence wildland fire behavior.
2. Interpret, apply, and document wildland fire behavior and weather information.
3. Define extreme fire behavior on a wildland fire.

General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)

- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

Articulation Information

- Not Transferable

Methods of Evaluation

- Objective Examinations
 - Example: Students will take a multiple-choice examination on temperature inversions. Standard Grading. Example Question: An increase in temperature with height, or to the layer within which such an increase occurs is called an: A. Inversion Layer, B. Temperature Inversion, C. Inversion, D. None of the Above.
- Reports
 - Example: Students will write an essay on how fuel's availability is essential to predicting wildland fire behavior. Rubric Grading.
- Skill Demonstrations
 - Example: Students will demonstrate the ability use and collect weather data from a belt-weather kit. Pass/Fail based on industry standards.

Repeatable

No

Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. The instructor will lead a discussion on the necessity of weather monitoring. The instructor will demonstrate the use of a belt weather kit, and the students will practice using the kit. Using the data gathered, students will make predictions of future values of Relative Humidity and Fuel Moisture based on incremental increases in temperature.
2. The instructor will lecture on how air moves around high and low pressure systems. Students will then use provided maps with pressure systems diagrammed on them and make predictions on types and strength of wind patterns.

Distance Learning

1. Online instructor lecture on wildland fire behavior, followed by students writing a report identifying conditions that create extreme fire behavior on a wildland fire. Students post their reports for instructor and student discussion.

Typical Out of Class Assignments Reading Assignments

1. The student will read a General Weather Forecast and be prepared to discuss and identify specific information that is relevant to Fire Behavior Predictions.
2. The student will read the material in the textbook on basic weather information, and will then calculate Fine Dead Fuel Moisture and Probability of Ignition for provided scenarios.

Writing, Problem Solving or Performance

1. Describe the different effects between cold air and warm air at the same elevation on a fire. 2. Explain what happens to atmospheric pressure when air descends to lower elevations.

Other (Term projects, research papers, portfolios, etc.)

Required Materials

- Intermediate Wildland Fire Behavior Workbook S-290
 - Author: National Wildfire Coordinating Group
 - Publisher: U.S. Government
 - Publication Date: 2009
 - Text Edition:
 - Classic Textbook?:
 - OER Link:
 - OER:
- Fundamentals of Fire Fighter Skills
 - Author: International Association of Fire Chiefs
 - Publisher: Jones and Bartlett
 - Publication Date: 2018
 - Text Edition: 4th
 - Classic Textbook?:
 - OER Link:
 - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.