

Course Outline

COURSE: JFT 221 **DIVISION:** 50 **ALSO LISTED AS:**

TERM EFFECTIVE: Fall 2021 **CURRICULUM APPROVAL DATE:** 11/9/2021

SHORT TITLE: FIRE INTERMED S-290

LONG TITLE: Fire Intermediate Fire Behavior S-290

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
2	18	Lecture:	1.8	32.4
		Lab:	0	0
		Other:	0	0
		Total:	1.8	32.4

COURSE DESCRIPTION:

This course provides the student with wildland fire behavior knowledge applicable for safe and effective wildland fire management activities (wildfires, fire use and prescribed fire).

PREREQUISITES:

JFT 219

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Define extreme fire behavior on a wildland fire
2. Interpret, apply, and document wildland fire behavior and weather information.

COURSE OBJECTIVES:

1. Student will be familiar with the characteristics of fuels, weather and topography that influence wildland behavior.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

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I. The Fire Environment. (2 hours)

1. The Fire Triangle
2. The Fire Behavior Triangle
3. The Fire Environment Triangle
4. Three Methods of Heat Transfer
 - a. Conduction
 - b. Convection
 - c. Radiation
5. Three Methods of Mass Transport of Firebrands on Wildland Fire
 - a. Convection
 - b. Wind
 - c. Gravity
6. Relationship of wildland fires of differing intensities to their environments
 - a. Ignition
 - b. Fire intensity
 - c. Rate of spread

II. Topographic Influences on Fire Behavior (2 hours)

1. Topography affects fuels and their availability for combustion
2. Stable air conditions
3. Slope

III. Fuels (3 hours)

1. Fuel Make-up
 - a. Fuel Characteristics
 - b. Fuel Moisture
 - C. Fuel Temperature
2. Fuel levels and components
3. Seven Characteristics of Fuels that Affect Wildland Fire Behavior
 - a. Fuel loading
 - b. Size and shape
 - c. Compactness
 - d. Horizontal continuity
 - e. Vertical arrangement
 - f. Moisture content
 - g. Chemical content
4. Major Fuel Groups

VI. Basic Weather Processes (2 hours)

1. Atmosphere

- V. Temperature and Humidity Relationships (2 hours)
 - 1. Temperatures
 - 2. Relative Humidity
- VI. Atmospheric Stability (2hours)
 - 1. Temperature
 - 2. Pressure
 - 3. Density
 - 4. Volume
- VII. Wind Systems (4 hours)
 - 1. Wind direction and speeds
 - 2. Wind on Wildland Fire Behavior
- VIII. Keeping Current with Fire Weather (2 hours)
 - 1. Predictive Services
- IX. Fuel Moisture (2 hours)
 - 1. Live Fuel Moisture
 - 2. Dead Fuel Moisture
- X. Extreme Wildland Fire Behavior (8 hours)
 - 1. The four common denominators of fire behavior on tragedy fires
 - 2. Extreme Fire Behavior Characteristics and Fire Environment Influences
- XI. Gauging Fire Behavior and Guiding Fireline Decisions (3 hours)

METHODS OF INSTRUCTION:

Lecture, class exercises

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours 64

Assignment Description

Reading assignments

METHODS OF EVALUATION:

Problem-solving assignments

Evaluation Percent 30

Evaluation Description

Describe the causes of extreme fire behavior conditions (long range spotting, crowning, and fire whirls) that develop due to weather, fuels, and/or topography during class exercises.

Objective examinations

Evaluation Percent 70

Evaluation Description

REPRESENTATIVE TEXTBOOKS:

NWCG Fireline Handbook manual , Fire Behavior Subcommittee , Fire Environment Committee , 2019.

ISBN:

12 Grade Verified by: Doug Achterman

FLAME (Fireline assessment Method) in a nutshell - handout

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education: N

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code:

In-Service: Y

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000627114

Sports/Physical Education Course: N

Taxonomy of Program: 213300