GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: JFT 134 DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Fall 2020 CURRICULUM APPROVAL DATE 04/14/2020

SHORT TITLE: FIRING OPERATIONS

LONG TITLE: Firing Operations Firing Methods

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
.5 TO 2	18	Lecture:	.5	9
		Lab:	1.3 TO 4	23.4 TO 72
		Other:	0	0
		Total:	1.8 TO 4	32.4 TO 72
		Total Learning Hrs:	50.4 TO 99	

COURSE DESCRIPTION:

The course will provide knowledge and skills needed to develop and implement defensive firing operations. The course will cover advanced defensive firing techniques and provide awareness of offensive firing techniques and pro and planning. Students completing this course with substantial firing experience will be able to implement offensive firing plans. PREREQUISITE: Fire Fighter I or Equivalent. JFT 225 or JFT 8.

PREREQUISITES:

Completion of JFT 225, as UG, with a grade of C or better.

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
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Identify the duties and responsibilities associated with conducting safe firing operations. Including proper communication and safety techniques.

2. Conduct a field firing operation using advanced techniques and develop and implement a written firing plan.

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

Curriculum Approval Date 04/14/2020

Lecture Content:

(9 hours)

Content: Duties and Responsibilities

I. Authority

A. Public Resources Code 4426

B. Health and Safety Code 13055

C. Incident

Authority

II. Legal Issues

A. Liability

1. Labor Code 6423 and 6425

B. Risk vs. benefit

1. Injury

2. Property Damage

C. Terms

1. Burnout

2. Backfire

Lab Content:

I. Organization of a Firing Operation (1 hour)

A. Supervisor (NWCG Firing Boss)

B. Firing Team

C. Firing Group

D. Firing Operations Plan

E. Group Organization

II. Personnel Management (1 Hour)

A. Safety

B. Personnel briefing

C. Logistical Needs

III. Reconnaissance and Size-Up (1 hour)

A. Fuels

B. Weather

C. Additional Information Sources

D. Topography

E. Ingress and egress

F. Problem Areas

IV. Firing Techniques as Applied Fire Behavior (1 hours)

V. Types of Firing Strategies and Their Characteristics "Backfire VS Burnout" (1-4 hours)

A. Backfire

B. Burnout

VI. Developing Burned Zones (1 Hours)

A. A primary objective in firing is to remove flammable fuels by creating a burned zone along desired perimeter outside of the fires edge.

VII. Present and Predicted Fire Behavior Influences (1- Hour)

A. Fire Behavior will determine/influence the following:

1. Firing technique
2. Fire intensity
3. Rate of firing
4. Required depth of burn zone
5. Resource needs
6. Control issues
7. Timing/burn window
8. Success or failure

B. Fire behavior factors to consider

1. Topography
2. Weather

VIII. Fire Behavior as it Relates to Basic Firing Patterns (3-6 hour
A. The three types of fire spread are
1. Head
2. Backing Fire
3. Flanking Fire
B. Firing patterns include one or more of the three types of fire spread
C. Patterns are described by orientation relative to the control line
IX. Regulating Fire Intensity (4-8hours)
A. General Principals of fire intensity control
B. Reducing fire intensity
C. To increase fire intensity
D. Match firing time to desired environmental conditions
E. Your fire should be hot enough to achieve desired results within the time frames available without losing control
X. Controlling Air Flow In The Fire Area (2-4- hour)
A. In-drafts created by the fire
B. Air flow in the fire area has three main contributors
C. Ambient wind can shift the in-draft effect, create turbulence, and extend the spotting zone
XI. Predicting the Potential for Spot Fires (1-4- hour)
A. Probability of ignition (PI)
B. Fire brand sources and production
XII. Conducting Firing Operations (1-4- hour)
A. Planning
B. Written firing plan
C. Elements of a formal firing plan
D. Safety
XIII. Resources Required (1 - hour)
A. Basic functions of the firing operation include:
1. Lookout(s)/intelligence gathering
2. Ignition; the lighters and their supplies
3. Holding and fuel bed preparation; engines, dozers, crews
B. Supplemental resources include:
1. Staging of additional firing / holding resources
2. Equipment for extended Mop-up commitments
XIV. Guidelines for Estimating Firing Rates (1- hour)
A. Developing burn zone
B. Set-up times
C. Drip torch productions
XV. Line-Based Firing (2-8 hour)
A. Conduct line-based firing from completed control or wet-lines
B. Direction of progress of overall firing operation
C. Anchor points /check lines
XVI. Prepare the Fuel Bed (1 hour)
A. Concentrations of fuel near the control line may need treatment
B. Minimize the source of firebrands
C. Remove and/or isolate snags
D. Treat the base of live trees that should not be damaged
E. Other treatments to enhance control of the firing operation

XVII. Accelerating the Firing Operation (1-2 hours)
A. To ensure the it is completed in the time available
XVIII. Problems in the Fire Environment (1 - 2hour)
A. Firing through saddles or reversals of slopes
B. Firing in bottoms of steep canyons
C. Firing in brush fields
D. Firing in timber
E. Adverse fuel conditions
F. Adverse weather conditions
XIX. Dealing with Unfavorable Control Line Configuration and Location (1- 3 hours)
A. Firing abrupt bends and corners
B. Problem with lines running across slope
C. Switchbacks
XX. Dealing with Common Operational Problems (1-2 hours)
A. Firing operation outruns holding forces
B. Holding-force problems
C. Poor accessibility and coordination due to heavy fuels or steep terrain
XXI. Firing Involving Structures, Improvements and Life Threats (4 -10hours)
A. Firing around structures
B. High-voltage power lines
C. LPG tanks
D. Threats to others
XXII. Ongoing Evaluation (1-6 hours)
A. Changing weather
B. Changing fire behavior
C. Multiple stripes can become unnecessary
D. Holding is becoming more difficult
E. Post firing operation after action review
XXIII. Class exercises (2-10 hours)
A. Little Wildcat Incident
B. Hand Held Firing
C. Ignition Devices Used with Aircraft

METHODS OF INSTRUCTION:
Skills Demonstration, Lecture, Scenario Training

OUT OF CLASS ASSIGNMENTS:
Required Outside Hours: 16
Assignment Description:
Reading Assignment - Firing Techniques as applied fire behavior
Reading Assignment Conducting Firing Operations
Reading Assignment - Firing Equipment

METHODS OF EVALUATION:

Writing assignments

Percent of total grade: 25.00 %

Students will implement a written firing plan, including proper safety techniques to be used.

Skill demonstrations

Percent of total grade: 50.00 %

During field exercises and demonstrations students will become competent in common firing devices, and general firing operations and techniques. Skills graded on by instructor

Objective examinations

Percent of total grade: 25.00 %

Written exam Other: Skills Demonstration

REPRESENTATIVE TEXTBOOKS:

State Fire Marshal . CalFire, Firing Operations Firing Methods, California Department of Forestry and Fire Protection Training and Education. California : State Fire Marshal ,2020.

Reading Level of Text, Grade: 12

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
Transferable CSU, effective 201430
UC TRANSFER:
Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 2 Stand-alone
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: Y
In-Service: N
Occupational Course: C
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000549971
Sports/Physical Education Course: N
Taxonomy of Program: 213300