

Crafton Hills College Course Outline

1. **Discipline:** Fire Technology
2. **Department:** Emergency Services
3. **Course Title:** Wildland Fire Control
4. **Course I.D.:** FIRET 118
5. **Prerequisite(s):** None
Corequisite(s): None
Departmental Recommendation(s): Eligibility for ENGL 101, Eligibility for MATH 095 as determined through the Crafton Hills College assessment process
6. **Semester Units:** 3
7. **Minimum Semester Hours:**
Lecture: 48 Laboratory: 0 Clinic: 0 Field: 0
8. **Need for Course:**

This course fulfills an elective course requirement for a degree in fire technology. Current firefighters may use this course to prepare or qualify for job advancement. This course is associate degree applicable and transfers to CSU.
9. **Goals for Course:**
 - A. This course is appropriate to the college's mission in that it is a part of a complete vocational education program leading to employment and promotion in fire service.
 - B. This course equips students with the knowledge, skills and resources available to fight wildland fires.
10. **Catalog Description:**

Study of the factors affecting wildland fire prevention, behavior, and control techniques.
11. **Schedule Description:**

Study of the factors affecting wildland fire prevention, behavior, and control techniques.
12. **Entrance Skills:**
 - A. **Requisite Skills:** None
 - B. **Recommended Skills:**

It is highly recommended that students entering this course be able to:

1. write an essay using proper spelling, grammar, and punctuation and construct a coherent paragraph to support a point
2. perform the arithmetic operations of addition, subtraction, multiplication, and division with fractions.
3. use the “fundamental principle of fractions”
4. perform the six conversions between fraction, decimals, and percents, and convert repeating decimals to fractions
5. apply principles of geometry necessary for the computation of perimeter, area, and volume
6. define the set: natural, whole, rational, irrational, real numbers and integers
7. perform the operations of addition, subtraction, multiplication and division of polynomials

13. Course Objectives

Upon satisfactory completion of this course, students will be able to:

- A. List the types of resources that are available to fight a wildland fire.
- B. Explain the use of each of these resources.
- C. Identify the differences found in each of the apparatus and aircraft groupings.
- D. Describe how wildfire spreads.
- E. List the types of wildland fuels and how they burn.
- F. Identify wildland fuel characteristics.
- G. Explain the effect topography has on the fire.
- H. Explain how weather factors influence a fire.
- I. Identify extreme fire behavior watchouts.
- J. Demonstrate the ability to use personal protective equipment properly.
- K. Demonstrate the ability to use a fire shelter correctly and discuss its value.
- L. Identify the actions to take when trapped by fire in a vehicle or building.
- M. Identify wildland fire behavior watchouts.
- N. Explain the proper safety procedures when working around snags.
- O. Describe the proper safety procedures for working near a bulldozer.
- P. Describe the proper safety procedures for working near aircraft.
- Q. Explain the additional wildland back country hazards.
- R. Explain the term LCES (lookouts, communications, escape route, safety zones) and describe its value.
- S. Explain and discuss the reason for FIRE ORDERS and 18 situations that should “watch out.”
- T. Identify water sources for use at a wildland fire.
- U. Compare and contrast the different types of water sources.
- V. Compare and contrast the different equipment used to supply water.
- W. Explain the difference between tactics and strategy.
- X. Describe the size-up process.
- Y. Identify the factors that should be evaluated upon arrival at the fire.
- Z. Describe how to form an action plan.
- AA. Demonstrate the ability to formulate an action plan given a fire scenario.
- BB. Explain how the fire officer establishes initial fireground command.
- CC. Describe how to use a wildland engine effectively.
- DD. Explain the different types of fire attack methods.
- EE. Explain the different types of hose lays.
- FF. Describe how to mobile pump.

- GG. Explain engine company tactics on both wildland and urban interface fires.
- HH. Identify the different types of hand crews.
- II. Explain the different methods of attack a hand crew uses.
- JJ. Identify the rules for working around inmate crews.
- KK. Identify the different hand tools a hand crew uses.
- LL. Describe how to tool up.
- MM. Explain how to use various hand tools.
- NN. Define the terms backfire and burnout.
- OO. Explain the difference between backfire and burnout.
- PP. List and explain the steps that must be taken before undertaking a firing operation.
- QQ. Identify the tools used in firing operations.
- RR. Explain three different ignition techniques used in firing operations.
- SS. Identify the different types of bulldozers.
- TT. Explain the different types of control systems and blades used on a bulldozer.
- UU. Identify a tractor plow.
- VV. Explain how to use a tractor plow.
- WW. Explain the different types of aircraft used on a wildland fire.
- XX. Describe the differences between fixed-wing aircraft types.
- YY. Explain the capabilities of air tankers.
- ZZ. Explain the different coverage levels used by fixed-wing aircraft.
- AAA. Explain the capabilities of helicopters.
- BBB. Identify the tactics used by helicopters.
- CCC. Explain what Class A foam is and how it works.
- DDD. Identify the difference between Class A foam solution types.
- EEE. Describe how foam is generated.
- FFF. Differentiate between compressed air foam systems and low-energy foam systems.
- GGG. Describe the different types of nozzles used to apply Class A foam.
- HHH. Explain the tactical applications of Class A foam.
- III. Explain what a fire blocking gel is.
- JJJ. Explain fire-blocking gel tactical applications.
- KKK. Explain what a Global Positioning System (GPS) is.
- LLL. Describe any limitations of the GPS.
- MMM. Identify the GPS reference lines on a United States Geological Survey (USGS) topographic map.
- NNN. Explain how to read a USGS topographic map.
- OOO. Explain the Universal Transverse Mercator Grid System used in GPS.
- PPP. Describe latitude and longitude.
- QQQ. Use a coordinate ruler to find you position on a map.

14. Representative Texts and Instructional Materials:

Lowe, J. D. (2001). *Wildland Firefighting Practices*; Clifford Park, NY; Delmar Publishers.

15. Course Content:

- A. Ground and Air Resources Used on a Wildland Fire
 - 1. engines, bulldozers, tractor plows, hand crews, aircraft
 - 2. fire management

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Semester Effective: Fall 2005

- B. Wildland Fire Behavior
 - 1. wildland fuels
 - 2. topography
 - 3. weather
 - 4. extreme fire behavior
 - 5. watchouts
- C. Safety on Wildland Fires
 - 1. personal protective equipment
 - 2. fire shelter
 - 3. vehicle and building entrapments
 - 4. fire behavior watchouts
 - 5. safety watchouts
 - 6. fire orders and 18 situations that shout "watch out"
- D. Water Supplies
 - 1. water sources
 - 2. equipment to supply water
- E. Tactics and Strategy
 - 1. size-up
 - 2. evaluating the tools for the job
 - 3. forecasting
 - 4. forming an action plan
 - 5. operational modes
 - 6. parts of the fire
 - 7. where and how to attack the fire
- F. Engine Company Operations
 - 1. wildland engines
 - 2. how to use a wildland engine
 - 3. engine company tactics
 - 4. wildland/urban interface tactics
 - 5. structure protection safety
- G. Handcrew Operations
 - 1. hand crew standards
 - 2. inmate crews
 - 3. helitack crews and smoke jumpers
 - 4. hand crew tools
 - 5. hand crew arrival procedures and use of hand tools
 - 6. hand line construction principles
 - 7. chain saw safety
 - 8. hand crew production
- H. Backfire/Burnout Basics
 - 1. firing operation approval
 - 2. backfire
 - 3. burnout
 - 4. fuel, topography and weather considerations
 - 5. firing operations in structure areas
 - 6. general rules about firing operations
 - 7. firing devices
 - 8. crew assignments
 - 9. firing techniques
- I. Bulldozers and Tractor Plows
 - 1. bulldozer types
 - 2. control systems and blade types
 - 3. use of bulldozers
 - 4. tractor plows

- J. Firefighting Aircraft
 - 1. aircraft operations
 - 2. fixed-wing air tankers
 - 3. helicopters
 - 4. aerial retardants and chemicals dropped for aircraft
- K. Class A Foam and Fire-Blocking Gel
 - 1. class A foam
 - 2. compressed air foam systems
 - 3. safety practices using class A foam
 - 4. tactical application
 - 5. fire-blocking gel
- L. Use of the Global Positioning System and Maps
 - 1. the global positioning system
 - 2. geographic coordinates found on a topographic map
 - 3. understanding topographic maps
 - 4. universal transverse mercator grid
 - 5. how to use a coordinate ruler

16. Methods of Instruction:

- A. Written work essays and reports
- B. Required reading
- C. Lecture
- D. Video
- E. Wildland fire scenarios

17. Assignments and Methods of Evaluation:

- | | | |
|----|---------------------|--------|
| A. | Written assignments | 10-30% |
| B. | Quizzes | 10-30% |
| C. | Midterm | 20-30% |
| D. | Final examination | 30-50% |

18. Distributed Education Methods of Instruction: None