



El Camino College

COURSE OUTLINE OF RECORD - Launched

I. GENERAL COURSE INFORMATION

Subject and Number: Fire and Emergency Technology 15
Descriptive Title: Fire Academy

Course Disciplines: Fire Technology

Division: Industry and Technology

Catalog Description: This course is designed for the student who wishes to prepare for an entry-level position as a firefighter and work toward becoming certified as a Fire Fighter 1, as specified by the California State Fire Marshal's office. Students participate in a 576 hour course of instruction emphasizing basic firefighting skills, such as methods of extinguishing fires, principles of ventilation, techniques of physical rescue, building construction, fire apparatus, fire equipment maintenance, and the knowledge of fire behavior.

Note: Students must apply through the Industry and Technology Division Office.

Conditions of Enrollment: Prerequisite

1.
Fire and Emergency Technology 1
with a minimum grade of C
or
equivalent

2.
Fire and Emergency Technology 6
with a minimum grade of C in prerequisite

AND
equivalent

3. Possession of a National Registry
Card or possession of a valid
Emergency Medical Technician (EMT)
license as required by the California
State Fire Marshal's Office.

AND

4. Pass a Fire Fighter Physical
Agility Test (FPAT) or Candidate
Physical Agility Test (CPAT) within
the last 6 months as required by

the California State Fire Marshal's
Office.

AND

5. Pass a physical examination according to the National Fire Protection Association (NFPA) Standard #1582.

AND

6. Pass the El Camino College Fire
Physical Qualification Test;

AND

7. Possess a valid California Driver's License

Course Length: Full Term Other (Specify number of weeks):
Hours Lecture: 11.00 hours per week TBA
Hours Laboratory: 21.00 hours per week TBA
Course Units: 18.00

Grading Method: Letter
Credit Status: Associate Degree Credit

Transfer CSU: No
Transfer UC: No

General Education:

El Camino College: _____

CSU GE: _____

IGETC: _____

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

1. Students will define fire department organization and culture, and the expectations of entry-level fire department personnel.
2. Students will recognize the characteristics of fire behavior and relate how the external influences of weather and chemicals affect emergency situations.
3. Students will be able to relate the building construction type to its anticipated fire behavior in emergency situations.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Identify the organizational structure within a typical fire service department.
Multiple Choice
2. Explain firefighter safety and demonstrate the use of protective equipment.
Performance exams
3. Compare and contrast the functions and uses of an engine and truck company - nozzles, fittings, hose, ladders, power equipment, and job duties during emergency incidents.
Performance exams
4. Tie rescue knots and demonstrate their uses.
Performance exams
5. Identify the components, use and maintenance of fire hose and perform hose evolutions.
Multiple Choice
6. Identify basic building construction in relationship to firefighter safety and fire behavior.
Multiple Choice
7. Identify types of hydrants and water systems, and their capabilities.
Multiple Choice
8. Raise and lower fire ladders.
Performance exams
9. Utilize a self-contained breathing apparatus.
Performance exams
10. Perform search and rescue operations.
Performance exams
11. Combat structure fires.
Performance exams
12. Combat vehicle fires.
Performance exams
13. Combat flammable gas and liquid fires.
Performance exams
14. Use hand held fire extinguishers.
Performance exams
15. Identify the use and application of various types of fire apparatus.
Multiple Choice
16. Identify the conditions, applications, and maintenance of salvage covers.
Multiple Choice
17. Perform building ventilation of various types and methods.
Performance exams
18. Analyze and predict fire behavior.
Performance exams
19. Extricate victims from automobiles.

- Performance exams
20. Explain the roles and responsibilities of firefighters in the incident command system.
Multiple Choice
21. Explain the firefighter's responsibility in a fire investigation.
Multiple Choice
22. Identify and perform the duties of a firefighter as the first responder to a hazardous materials incident.
Performance exams
23. Identify standpipes and sprinkler systems and their applications.
Performance exams
24. Explain the ten wildland firefighting orders.
Multiple Choice
25. Explain the 18 wildland firefighting situations that "shout watchout".
Multiple Choice
26. Demonstrate the use of wildland firefighting tools.
Performance exams
27. Demonstrate progressive hoselays.
Performance exams
28. Demonstrate mounting and dismounting fire apparatus.
Performance exams
29. Demonstrate the ability to safely cut a scratch line as a member of a crew.
Performance exams
30. Perform self-rescue techniques.
Performance exams
31. Explain the various methods for utility control at emergencies.
Multiple Choice
32. Demonstrate the safe operation of hand and power tools.
Performance exams
33. Demonstrate the various methods to gain entry into structures and properties.
Performance exams
34. Demonstrate types of cleaning methods for various tools and equipment.
Performance exams
35. Demonstrate emergency decontamination techniques.
Performance exams

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topic
Lecture	4	I	FIRE ACADEMY OVERVIEW A. Orientation B. Fire Fighter 1 certification process

Lecture	12	II	FIRE FIGHTER SAFETY A. Health/safety B. Protective ensemble C. Self-Contained Breathing Apparatus (SCBA) D. Operating on-scene E. Responding on apparatus
Lab	29	III	FIRE FIGHTER SAFETY A. Physical conditioning B. Protective ensemble C. SCBA D. Operating on-scene E. Responding on apparatus
Lecture	2	IV	COMMUNICATIONS A. Operating phones B. Initiating a response C. Operating fire department phones
Lab	2	V	COMMUNICATIONS A. Operating phones B. Initiating a response C. Operating fire department phones
Lecture	8	VI	FIRE TOOLS/EQUIPMENT/FACILITIES A. Ropes B. Knots C. Hand and power tools D. Tool and facility maintenance E. Portable lighting
Lab	36	VII	FIRE TOOLS/EQUIPMENT/FACILITIES A. Ropes B. Knots C. Hand and power tools D. Tool and facility maintenance E. Portable lighting
Lecture	52	VIII	STRUCTURAL FIRE SUPPRESSION A. Building construction B. Fire behavior C. Fire extinguishers D. Water supply E. Fire hoses F. Utility control G. Ground ladders H. Forcible entry I. Search and rescue J. Horizontal ventilation

			<ul style="list-style-type: none"> K. Structural fire fighting operations L. Vertical ventilation M. Property conservation N. Overhaul O. Fire control P. Flash chamber Q. Hose rolls R. Hose loading
Lab	157	IX	<p>STRUCTURAL FIRE SUPPRESSION</p> <p>29 Hours</p> <ul style="list-style-type: none"> A. Building construction B. Fire behavior C. Fire extinguishers <p>24 Hours</p> <ul style="list-style-type: none"> A. Water supply B. Fire hoses C. Utility control <p>32 Hours</p> <ul style="list-style-type: none"> A. Ground ladders B. Forcible entry C. Search and rescue D. Horizontal ventilation <p>24 Hours</p> <ul style="list-style-type: none"> A. Structural fire fighting operations B. Vertical ventilation C. Property conservation D. Overhaul <p>24 Hours</p> <ul style="list-style-type: none"> A. Fire control B. Flash chamber <p>24 Hours</p> <ul style="list-style-type: none"> A. Hose rolls B. Hose loading
Lecture	4	X	<p>FIRE FIGHTER SURVIVAL</p> <ul style="list-style-type: none"> A. Structural fire fighter survival B. Exiting a hazardous area C. Initiating a May Day D. Performing a self-rescue E. Opening a wall F. Escaping from entanglements G. Breathing techniques
Lab	12	XI	<p>FIRE FIGHTER SURVIVAL</p> <ul style="list-style-type: none"> A. Structural fire fighter survival B. Exiting a hazardous area

			<ul style="list-style-type: none"> C. Initiating a May Day D. Performing a self-rescue E. Opening a wall F. Escaping from entanglements
Lecture	5	XII	SUPPRESSION OF FIRE OUTSIDE <ul style="list-style-type: none"> A. Exterior fires B. Passenger vehicle fires
Lab	12	XIII	SUPPRESSION OF FIRE OUTSIDE <ul style="list-style-type: none"> A. Exterior fires B. Passenger vehicle fires
Lecture	48	XIV	WILDLAND FIRE SUPPRESSION <ul style="list-style-type: none"> A. Wildland tools/equipment B. Wildland response C. Protective equipment D. Wildland fire behavior E. Wildland urban interface F. Conducting patrols G. Human factors
Lab	24	XV	WILDLAND FIRE SUPPRESSION <ul style="list-style-type: none"> A. Wildland tools/equipment B. Wildland response C. Protective equipment D. Wildland fire behavior E. Wildland urban interface F. Conducting patrols G. Human factors
Lecture	12	XVI	HAZARDOUS MATERIALS/WEAPONS OF MASS DESTRUCTION (WMD) <ul style="list-style-type: none"> A. Recognizing hazardous materials/WMD B. Identifying/analyzing hazardous materials/WMD incidents C. Emergency decontamination D. Mitagating a hazardous materials/WMD incident
Lab	12	XVII	HAZARDOUS MATERIALS/WMD <ul style="list-style-type: none"> A. Recognizing hazardous materials/WMD B. Identifying/analyzing hazardous materials/WMD incidents C. Emergency decontamination D. Mitagating a hazardous materials/WMD incident
Lecture	8	XVIII	FIRE SERVICE TRAINING AND EDUCATION PROGRAM (FSTEP) AUTO EXTRICATION <ul style="list-style-type: none"> A. Supplemental restraint systems B. Safety hazards C. Vehicle construction D. Cutting operations

			E. Stabilization
Lab	16	XIX	FSTEP AUTO EXTRICATION A. Supplemental restraint systems B. Safety hazards C. Vehicle construction D. Cutting operations E. Stabilization
Lecture	3	XX	FSTEP FLAMMABLE LIQUID AND GAS FIRES A. Characteristics of flammable gases and liquids B. Hazards of flammable gases and fluids C. Tactics to utilize on flammable gases and liquids
Lab	5	XXI	FSTEP FLAMMABLE LIQUID AND GAS FIRES A. Characteristics of flammable gases and liquids B. Hazards of flammable gases and fluids C. Tactics to utilize on flammable gases and liquids
Lecture	8	XXII	FSTEP CONFINED SPACE AWARENESS A. Occupational Safety and Health Association (OSHA) regulations B. Pre-entry procedures C. Atmospheric monitoring D. Mitigating the incident
Lecture	24	XXIII	HAZARDOUS MATERIALS: FIRST RESPONDER OPERATIONAL A. Personal protective equipment B. Incident Action Plan C. Identification D. Containment methods
Lab	6	XXIV	HAZARDOUS MATERIALS: FIRST RESPONDER OPERATIONAL (DECONTAMINATION) A. Protective equipment B. Procedures for effective decontamination C. Decontamination cleaning agents
Lab	31	XXV	LADDERS A. Straight ladders 1. Removing from the apparatus 2. Carrying one person 3. Carrying two persons 3. Raising and lowering 4. Remounting to the apparatus B. Extension ladders 1. Removing from the apparatus

			<ol style="list-style-type: none"> 2. Carrying one person 2. Carrying two or three persons 3. Raising and lowering 4. Remounting to the apparatus <p>C. Roof ladders</p> <ol style="list-style-type: none"> 1. Removing from the apparatus 2. Carrying one person 3. Carrying two persons 3. Raising and lowering 4. Remounting to the apparatus <p>D. Folding-attic ladders</p> <ol style="list-style-type: none"> 1. Removing from the apparatus 2. Carrying one person 3. Raising and lowering 4. Remounting to the apparatus
Lecture	8	XXVI	CERTIFICATION TESTING - THEORY A. Intensive review B. Individual and group discussion
Lab	36	XXVII	CERTIFICATION TESTING - SKILLS A. Intensive review B. Individual and group discussion
Total Lecture Hours		198	
Total Laboratory Hours		378	
Total Hours		576	

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Other -

Various skills demonstrations and evolutions

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

While dressed in full personal protective attire, demonstrate to the instructor, with 100% accuracy, the ability to don and operate a Self-Contained Breathing Apparatus (SCBA) within a one minute period.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Prepare and submit a one page written report on the types of fire extinguishing agents available for fire suppression that compares and contrasts the extinguishing agents and their relative effectiveness in the suppression of fire.

2. Given a structure fire scenario, students in groups of three will demonstrate to the instructor the following: fire attack methods and engine and truck company operations. Choose the attack method which most likely would effectively mitigate the incident.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams

Other exams

Quizzes

Class Performance

Homework Problems

Other (specify):

HANDS ON MANIPULATIVE ACTIVITIES COMPREHENSIVE NOTEBOOK

V. INSTRUCTIONAL METHODS

Demonstration

Discussion

Field trips

Group Activities

Guest Speakers

Laboratory

Lecture

Multimedia presentations

Role Play

Other (please specify)

HANDS ON MANIPULATIVE ACTIVITIES

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study

Answer questions

Skill practice

Required reading

Problem solving activities

Written work

Estimated Independent Study Hours per Week: 22

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Frederick Stowell. ESSENTIALS OF FIREFIGHTING AND FIRE DEPARTMENT OPERATIONS. 6th ed. Brady/International Fire Service Training Association (IFSTA), 2013.

National Wildfire Coordinating Group (NFES). FIREFIGHTER TRAINING S-130.

National Wildfire Coordinating Group (NFES), 2003.

Qualifier Text: INDUSTRY STANDARD,

El Camino College. EL CAMINO FIRE ACADEMY MANUAL. El Camino College Fire Academy, 2013.

El Camino College . El Camino Fire Academy Manual. El Camino College, 2013.

National Wildfire Coordinating Group (NFES) . INTRODUCTION TO WILDLAND FIRE BEHAVIOR S-190. National Wildfire Coordinating Group (NFES) , 2006.

Qualifier Text: INDUSTRY STANDARD,

National Wildfire Coordinating Group (NFES), 2003. . BASIC ICS - ICS for Single Resources and Initial Action Incidents - 1-200. National Wildfire Coordinating Group (NFES) , 2006.

Qualifier Text: INDUSTRY STANDARD,

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

Various handouts

D. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

Requisites	Category and Justification
Course Prerequisite Fire and Emergency Technology-1 or	Sequential
Non-Course Prerequisite	If the student has not taken FTECH 1 or FTECH 6 at El Camino College, but has taken the same course at another college and can supply sealed transcripts verifying completion, the student will be prepared to apply for the Fire Academy. If students do not have fire protection organization and building construction knowledge, students will not succeed in this course.
Course Prerequisite Fire and Emergency Technology-6 AND	Sequential
Non-Course Prerequisite	
Non-Course Prerequisite	Students should have the ability to:

AND	<ol style="list-style-type: none"> 1. Evaluate and know what precautions an EMT must take at an emergency scene. 2. Take vital signs of a patient. 3. Interpret vital signs of a patient. 4. Perform primary and secondary total body checks to establish extent of injury. 5. Establish the level of consciousness of a patient. 6. Provide appropriate treatment to a patient. 7. Perform primary and secondary total body checks to establish extent of injury. <p>If students do not have these skills, they will not be able to succeed in this course.</p>
Non-Course Prerequisite AND	<p>Within the last 6 months students must have shown the ability to complete:</p> <ol style="list-style-type: none"> 1. Dry Hose Deployment 2. Charge Hose Deployment 3. Halyard Raise – Ladder Extension 4. Roof Walk 5. Attic Crawl 6. Roof Ventilation using a Sledgehammer 7. Victim Removal 8. Ladder Removal – Carry 9. Stair Climb with Hose Pack 10. Attic Crawl 11. Hose Hoist <p>If students do not have the ability to complete these tasks and cannot pass one of these exams, they cannot apply for the fire academy.</p>
Non-Course Prerequisite AND	<p>Submission of a signed original statement from a physician. The medical exam is valid for one year. Before students can begin the Fire Academy, students must take a medical exam which includes a resting EKG to show they are healthy enough to withstand the rigors of the fire academy.</p>
Non-Course Prerequisite AND	<p>This test is given to applicants approximately two weeks after application deadline closes. Because of the need for additional physical conditioning testing before applicants begin the fire academy, we have added The El Camino College Physical Qualification Test. It is important to see the applicant's present physical conditioning in the areas of overall cardiovascular endurance and internal-recovery rate for their safety the safety of others. Students must have the ability to successfully complete:</p> <ol style="list-style-type: none"> 1. 3 mile run in 27 minutes 2. Dry Hose Deployment 3. Charge Hose Deployment 4. Halyard Raise – ladder extension 5. Roof Walk 6. Attic Crawl 7. Roof Ventilation using a Sledgehammer 8. Victim Removal

	<p>9. Ladder Removal – Carry 10. Stair Climb with Hose Pack 11. Hose Hoist</p> <p>If students cannot successfully complete these tasks and cannot pass these exams, they cannot enroll in the fire academy and are not prepared physically to succeed.</p>
Non-Course Prerequisite	Students must have the ability to operate and drive emergency vehicles, and be licensed by the state of California.

B. Requisite Skills

Requisite Skills
Understand the need for safety rules and regulations. FTEC 1 - Compare and contrast the basic components of fire as a chemical reaction, the major phases of fire, and the main factors that influence fire spread and fire behavior.
Understand strategic and tactical priorities. FTEC 1 - Describe the basic elements of firefighter safety and survival.
Understand components of fire as a chemical reaction; the major phases of fire and the main factors that influence fire spread and fire behavior. FTEC 1 - Compare and contrast the basic components of fire as a chemical reaction, the major phases of fire, and the main factors that influence fire spread and fire behavior. FTEC 6 - Compare and contrast the structural members on various types of construction.
Describe various types of fire apparatus and their specialized applications in mitigating incidents.
Identify the types of building construction. FTEC 6 - Compare and contrast the structural members on various types of construction.
Identify fire operations. FTEC 6 - Compare and contrast firefighting practices and procedures developed for different types of building construction.

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification
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D. Recommended Skills

Recommended Skills

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact
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Course created by Craig Neumann on 09/01/1988.

BOARD APPROVAL DATE: 03/13/1989

LAST BOARD APPROVAL DATE: 10/19/2015

Last Reviewed and/or Revised by Craig Neumann on 08/21/2015