

Definition

This program is designed to prepare students to work as firefighters and to provide an opportunity for those now working in this field to upgrade their skills.

Staff

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Program Description

This program is made up of courses conforming to the recommended Uniform Fire Technology Curriculum of the California Community College System. Upon completion of the UFTC, professional firefighters should plan to enroll in appropriate programs at Regional Training Centers sponsored by the California Fire Academy System.

Fire Technology courses are offered in the evening to allow working students easy access to instruction. Classes are updated by the local advisory group to maintain relevancy and meet changing industry needs.

Students must receive a minimum grade of "C" or better in all required core courses and the specific courses listed as program electives in order to qualify for the degree or certificate.

Career Options

Engineer

Firefighter

Fire Protection Services

Forestry Technicians

Hazardous Materials

Health and Safety Inspector

Industrial Safety

Industrial Fire Brigade

Law Enforcement

Plant Protection

Security Guard

Program Learning Outcomes

Fire Technology

1. Analyze the fire behavior and combustion process as observed on the fire ground to make safe and effective attacks on a variety of fires.
2. Differentiate between the types of suppression resources, methods, tactics and strategy, that are available for use and the type of incident to be mitigated.
3. Analyze and evaluate critical aspects of the fire protection job relative to safe work practices, standards, proper use of tools, power equipment, apparatus, and personal protective equipment.
4. Use and properly interpret drawings, plans, and maps including floor plans, sprinkler, alarm system designs, topographic and street maps to identify location of fire protection equipment or incident locations.
5. Value diversity within the community that we serve and within our agency through good citizenship and understanding the fire fighter role in the modern community.

Wildland Fire Technology

1. Value diversity within the community and/or agency served by Emergency Services personnel through good citizenship and understanding the role of the Wildland firefighter in the modern fire service.
2. Analyze and evaluate critical aspects of the fire protection job as related to safe work practices, use of procedures/standards, and Personal Protective Equipment.
3. Analyze the fire behavior as observed on the fire ground to make safe and effective decision for incident mitigation.

Firefighter 1 Academy

1. Analyze and evaluate critical aspects of fire suppression operations related to safe work practices, proper use of tools, power equipment, and personal protective equipment.
2. Analyze, evaluate and troubleshoot various fire emergency scenarios using standard decision making principles to develop a safe and effective operational strategy to bring an incident to a successful conclusion.
3. Apply proper maintenance and safety standards related to fire department ladders and power saws.
4. Assure that actions and decisions are based on ethical work practices and human factors directly related to the duties and responsibilities of a firefighter.

Certificate Programs

Fire Technology

The following courses (30 units minimum) are required for the certificate.

Required Courses:

FTEC 111, Fire Protection Organization

units

3

FTEC 112, Fire Prevention Tech.	3
FTEC 113, Fire Protection Equip. and Systems	3
FTEC 211, Fire Behavior and Combustion	3
FTEC 212, Building Construction for Fire Protection	3
Program Electives	<u>15</u>
Total	30

For a recommended plan of study for the certificate, please refer to the Associate Degree plan minus the general education requirements.

Program Electives:	units
EMT 101, Emergency Medical Technician 1	5.5
FTEC 117, Preparing to be a Firefighter	3
FTEC 125, Haz Mat First Responder Operations	1-5
FTEC 199, Occupational Work Experience	1-8
FTEC 215, Rescue Parties	3
FTEW 121 Wildland Firefighter	4
FTW 122, Wildland Public Info. Officer, Prev and Invest	3
FTW 123, Wildland Operations	3
FTW 124 Wildfire Power Saws	2
FTW 221, Wildland Firefighter Safety and Survival	3
FTW 222, Wildland Fire Behavior	3
FTW 223, Wildland Engine Firefighter	4
FTW 224, Wildland Fire Control	3
GEOG 201, Map Interpretation GPS	4

Firefighter 1 Academy

The Firefighter 1 Academy is intended to provide students the necessary skills and knowledge to complete training for California State Fire Marshall Firefighter 1 certification. Emphasis is placed on knowledge and skills development in classroom and drill ground settings.

Students desiring to enter the Academy are required to have completed a medical examination and Candidate Physical Ability Test (CPAT). In addition to the enrollment fee, students are required to buy books, materials, uniforms, and protective equipment. The cost for these items is approximately \$2000. Informational meetings are scheduled at various times prior to registration for an Academy to give prospective students information on the requirements of the program.

Career Options

- Municipal fire service (Cities and Counties)
- Private Fire Protection Agencies
- Federal Fire Departments
- Military Base Fire Departments

Required Courses:	units
The following courses (19.5 units) are required for the certificate.	
FTEC 295A, Firefighter I Academy Module A	9
FTEC 295AL, Firefighter I Academy Module A Lab	2
FTEC 295B, Firefighter 1 Academy Module B	8
FTEC 295BL, Firefighter 1 Academy Module B Lab	<u>2.5</u>
Total	21.5

Wildland Fire Technology

Required Courses:	units
FTW 121, Wildland Firefighter	4
FTW 122, Wildland Public Info. Office, Prev., and Invest	3
FTW 123, Wildland Fire Operations	3
FTW 221, Wildland Firefighter Safety and Survival	3
FTW 222, Wildland Fire Behavior	3
	<u>15</u>
Total	30

Program Electives:	units
Select 14 units from the list below.	
EMT 101, Emergency Medical Technician (EMT)	5.5
FTEC 111, Fire Protection Organization	3
FTEC 112, Fire Prevention Technology	3
FTEC 117, Preparing to be a Firefighter	3
FTW 124, Wildfire Power Saws	2
FTEC 125, Haz Mat First Responder Operations	1.5
FTW 223, Wildland Engine Firefighter	4
FTW 224, Wildland Fire Control	3
GEOG 201, Map Interpretation and GPS	4
GEOG 205, Intro. to Geographic Information Systems	3

Low-Unit Certificate of Achievement

National Wildfire Coordinating Group / Wildland Fire Fighter Academy

The Wildland Firefighter Academy program is designed to give students the basic necessary skills and knowledge in wildland firefighting to obtain an entry-level position as a wildland firefighter. Emphasis is placed on the field use of tools and equipment, physical training, as well as classroom academics. Students desiring to enter the Wildland Firefighter academy are required to attend an informational meeting and complete an application prior to registration for the academy. **After successful completion of the academy a certificate will be awarded by the National Wildfire Coordinating Group (NWCG).**

Career Options

- Type II Hand Crewmember
- Hot Shot Crewmember
- Engine Crewmember

Required Courses:	units
The following courses (10 units) are required for the certificate.	
FTEC 285, NWCG Wildland Firefighter Academy	<u>10</u>
Total	10

Associate Degree

Fire Technology

The requirements for an associate degree in Fire Technology may be satisfied by completing 15 units of required courses, selecting an additional 9 units from the restricted list of program electives, 21 units of general education requirements, and

sufficient elective credits to total 60 units. (See Graduation/ Associate Degree Requirements.)

Students who complete the associate degree have enhanced employability in the field of fire fighting. They are well prepared full-time, permanent positions rather than temporary, on-call positions. Additionally, they have enhanced for promotional opportunities into supervisory and management positions as they gain experience with various agencies. The associate degree will also provide students with a broad range of knowledge with which to evaluate and appreciate the physical environment, the culture, and the society in which they live and with the ability to think and communicate clearly and effectively.

Except in cases of a prerequisite requirement, it is not required to take courses in exactly this sequence; they are recommended in this order to facilitate success.

Recommended Plan of Study

First Semester	units
FTEC 111, Fire Protection Organization	3
FTEC 112, Fire Prevention Tech.	3
FTEC 113, Fire Protection Equipment and Systems	3
Course from GE requirement Area A	3
Course from GE requirement Area D1	3
Total	15

Second Semester	units
FTEC 212, Building Construction for Fire Protection	3
Course from GE requirement Area B	3
Course from GE requirement Area D2	3
Course from GE requirement Area E	3
Program Elective	3
Total	15

Third Semester	units
FTEC 211, Fire Behavior and Combustion	3
Course from GE requirement Area F	3
Program Electives	6
Elective	3
Total	15

Fourth Semester	units
Course from GE requirement Area C	3
Electives	12
Total	15
Degree Total	60

Program Electives:

Please refer to the Program Electives listed under the certificate program.

Wildland Fire Technology

This program is designed for those who are interested in a career in the fire protection or emergency services. Courses offered at AVC are based on the National Wildfire Coordination group (NWCg) standards as well as the recommended Uniform Fire

Technology Curriculum of the California Community College System. A Wildland Fire Technology Associates degree requirements include the successful completion of 16 units of required course work, 14 units of program electives, and general education requirements outlined in this catalog.

Upon completion students will increase their ability to obtain an entry level position, as well and enhance their ability to promote to first level supervisors positions. Topics discussed as part of the Associates degree program include, but are not limited to; Fire firefighter application preparation, Wildland Firefighter training, Wildland fire prevention, Wildland fire behavior, as well as Firefighter Safety and Survival.

Required Courses:	units
FTW 121, Wildland Firefighter	4
FTW 122, Wildland Public Info. Office, Prev., and Invest	3
FTW 123, Wildland Fire Operations	3
FTW 221, Wildland Firefighter Safety and Survival	3
FTW 222, Wildland Fire Behavior	3
Program electives	14
Total	30

Program Electives:	units
Select 14 units from the list below.	
EMT 101, Emergency Medical Technician (EMT)	5.5
FTEC 111, Fire Protection Organization	3
FTEC 112, Fire Prevention Technology	3
FTEC 117, Preparing to be a Firefighter	3
FTEC 125, Haz Mat First Responder Operations	1.5
FTW 124, Wildfire Power Saws	2
FTW 223, Wildland Engine Firefighter	4
FTW 224, Wildland Fire Control	3
GEOG 201, Map Interpretation and GPS	4
GEOG 205, Intro. to Geographic Information Systems	3

Except in cases of a prerequisite requirement, it is not required to take courses in exactly this sequence; they are recommended in this order to facilitate success.

Recommended Plan of Study

First Semester	units
FTW 122, Wildland Public Information Officer, Prevention, and Investigation	3
Course from GE requirement Area A	3
Course from GE requirement Area D1	3
Program Elective	3
Program Elective	3
Total	15

Second Semester	units
FTEC 122, Wildland Firefighter	4
FTW 221, Wildland Firefighter Safety and Survival	3
General Ed, Area B - Social & Behavioral Sciences	3
General Ed, Area D2 Communication and Analytical Thinking	3
Program Elective	3
Total	16

Third Semester	units
FTW 222, Wildland Fire Behavior	3
FTW 123, Wildland Fire Operations	3
General Ed, Area C - Humanities	3
General Ed, Area E - Additional Breadth	3
Program Electives	<u>3</u>
	Total 15
Fourth Semester	units
Course from GE requirement Area C	3
Program Electives	3
Electives	<u>9</u>
	Total 15
	Degree Total 60

Transfer

A bachelor’s degree in Fire Protection Administration is available at CSU, Los Angeles. Check the CSU, Los Angeles catalog and consult a counselor for transfer requirements.

Prerequisite Completion

If a course is listed as a prerequisite for another course, that prerequisite course must be completed with a satisfactory grade in order to enroll in the next course. According to Title 5, Section 55200(d), a satisfactory grade is a grade of “A,” “B,” “C” or “P”. Classes in which the Pass/No Pass option is available are indicated with an asterisk (*) before the course title. See “Pass/No Pass Option” in the catalog for full explanation.

Fire Technology Courses

FTEC 111 *FIRE PROTECTION ORGANIZATION

3 units

3 hours weekly

Advisory: Eligibility for ENGL 100A, READ 099.

Provides an introduction to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. (C-ID: FIRE 100 X) (CSU, AVC)

FTEC 112 *FIRE PREVENTION TECHNOLOGY

3 units

3 hours weekly

Designed for the new student. The course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationship of fire prevention with fire safety education and detection and suppression systems. (C-ID: FIRE 110 X) (CSU, AVC)

FTEC 113 *FIRE PROTECTION EQUIPMENT AND SYSTEMS

3 units

3 hours weekly

Advisory: Eligibility for ENGL 100A, READ 099.

Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. (C-ID: FIRE 120 X) (CSU, AVC)

FTEC 117 *PREPARING TO BE A FIREFIGHTER

3 units

3 hours weekly

Advisory: Eligibility for ENGL 100A, READ 099.

Provides knowledge and skills needed to successfully complete the fire department employment process. Course includes what firefighters do, how firefighters are selected, memory and observation, tool knowledge, shop arithmetic, mechanical insight, mechanical knowledge, hydraulic calculations using mathematic formulas, calculation of square footage, cubic footage, percent of slopes, interpretation of symbols, spatial relations, map reading, reading comprehension, vocabulary, tables, charts, graphs, physical ability testing, resume preparation, fire department applications, and oral interviewing. (CSU, AVC)

FTEC 125 *HAZ MAT FIRST RESPONDER OPERATIONS

1 units

18 hours total

Prepares the student to respond to hazardous materials incidents in a safe and competent manner at the operational level. Includes recognition and safety, containment and protective actions, scene management, legal aspects, and other information appropriate to this level of hazardous materials incident management. Course is based on California Specialized Training Institute Hazardous materials Training for First Responders (CSU, AVC)

FTEC 199 *OCCUPATIONAL WORK EXPERIENCE

1–8 units
hours vary

Prerequisite: To participate in work experience, students must have a job or internship which is either paid or voluntary and have the approval of the supervisor and instructor supervising work experience in the specific subject area. *PRIOR TO ENROLLING*, students must attend a scheduled orientation or meet individually with the supervising instructor for an individual orientation.

Occupational Work Experience Education is supervised employment designed to provide students a realistic learning experience through work. The ultimate goal is to teach students those skills and attitudes that will equip them to function and adapt as an employee in a variety of situations and jobs. Occupational Work Experience Education is supervised employment extending classroom-based occupational learning at an on-the-job learning station related to the student's educational major or occupational goal. Credit may be accrued at the rate of one to eight units per semester. For the satisfactory completion of all types of Cooperative Work Experience Education (WE 197 and WE 199), students may earn up to a total of sixteen semester credit hours. (CSU, AVC) (R3)

FTEC 211 *FIRE BEHAVIOR AND COMBUSTION

3 units
3 hours weekly

Corequisite: Completion of or Concurrent enrollment in FTEC 111.

Theory and fundamentals of how and why fires start, spread, and are controlled; an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques. (C-ID: FIRE 140 X) (AVC)

FTEC 212 *BUILDING CONSTRUCTION FOR THE FIRE SERVICE

3 units
3 hours weekly

Corequisite: Completion of or Concurrent enrollment in FTEC 111.

The study of the components of building construction that relate to fire safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at fires. The development and evolution of building and fire codes will be studied in relationship to past fires in residential, commercial, and industrial occupancies. (C-ID: FIRE 130 X) (CSU, AVC)

FTEC 215 *RESCUE PRACTICES

3 units
3 hours weekly

Prerequisite: Completion of or concurrent enrollment in FTEC 111.

General and specific rescue applications ranging in complexity from simple to extremely complex. Includes rescue scene management, rescue vehicle and equipment, rope rescue, structural collapse rescue, elevator rescue, confined space rescue, water and ice rescue, trench rescue, and other special rescue situations. (AVC)

FTEC 285 NWCG WILDLAND FIREFIGHTER ACADEMY

10 units
243 hours total

Limitation on Enrollment: Requires passing a physical, arduous physical exertion, lifting of 40 lbs or more pounds, walk in irregular terrain, and pass the Work Capacity Test, Arduous level (WCT/Pack Test).

The Wildland Firefighter Academy is designed to give students the basic necessary skills and knowledge in Wildland Firefighting to obtain an entry-level temporary position as a wildland firefighter. Emphasis is placed on the field use of tools and equipment, physical training, leadership, as well as classroom academics. Upon completion of this course a certificate will be awarded by the National Wildfire Coordination Group. (CSU, AVC)

FTEC 295A *FIREFIGHTER 1 ACADEMY MODULE A

9 units
183 hours total

Limitation on Enrollment: Requires physical exertion, lifting of 40 or more pounds, ability to climb ladders, walk in irregular terrain and pass Candidate Physical Agility Test (CPAT).

Corequisite: Concurrent enrollment in FTEC 295AL.

Advisory: Completion of FTEC 111, Eligibility for ENGL 100A, READ 099.

Combined with FTEC 295B provides the student with the knowledge to meet California State Fire Training requirements for a Firefighter 1 Academy. This coursework is the first step toward Firefighter 1 Certification. Combines classroom coursework with hands on training. Coursework includes, but is not limited to: history and development of the fire service, organization command and control, communications and alarms, fire behavior, firefighter safety, personal protective equipment, self-contained breathing apparatus, portable fire extinguishers, water supply, fire hose and appliances, nozzles and fire streams, and protective systems. Students may have to purchase additional

supplies not provided by the college. (CSU, AVC)

FTEC 295AL *FIREFIGHTER 1 ACADEMY MODULE A LAB

2 units

131 hours total

Limitation on Enrollment: Requires physical exertion, lifting of 40 or more pounds, ability to climb ladders, walk in irregular terrain, and pass Candidate Physical Agility Test (CPAT).

Corequisite: Concurrent enrollment in FTEC 295A.

Advisory: Eligibility for ENGL 100A, READ 099.

Laboratory course designed to accompany FTEC 295A lecture. Students may have to purchase additional supplies not provided by the college. (CSU, AVC)

FTEC 295B *FIREFIGHTER 1 ACADEMY MODULE B

8 units

169 hours total

Limitation on Enrollment: Requires physical exertion, lifting of 40 or more pounds, ability to climb ladders, walk in irregular terrain, and pass Candidate Physical Agility Test (CPAT).

Prerequisite: Completion of FTEC 295A and FTEC 295AL.

Corequisite: Concurrent enrollment in FTEC 295BL.

Advisory: Eligibility for ENGL 100A, READ 099.

Instructional materials fee required for this course and must be paid at registration.

Combined with FTEC 295A provides the student with the knowledge to meet California State Fire Training requirements for a Firefighter 1 Academy. This course is the second step toward Firefighter 1 Certification. Combines classroom coursework with hands on training. Coursework includes, but is not limited to: building construction, ladders, ropes and knots, rescue procedures, forcible entry, ventilation, fire suppression, salvage, fire cause determination, fire prevention, first aid, hazardous materials, and terrorism awareness. Students may have to purchase additional supplies not provided by the college. (CSU, AVC)

FTEC 295BL *FIREFIGHTER 1 ACADEMY MODULE B LAB

2.5 units

141 hours total

Limitation on Enrollment: Requires physical exertion, lifting of 40 or more pounds, ability to climb ladders, walk in irregular terrain, and pass Candidate Physical Agility Test (CPAT).

Prerequisite: Completion of FTEC 295A and FTEC 295AL.

Corequisite: Concurrent enrollment in FTEC 295B.

Advisory: Eligibility for ENGL 100A, READ 099.

Laboratory course designed to accompany FTEC 295B lecture. Students may have to purchase additional supplies not provided

by the college. (CSU, AVC)

Wildland Fire Technology

FTW 121 *WILDLAND FIREFIGHTER

4 units

5 hours weekly

Advisory: Eligibility for ENGL 100A, READ 099.

Prepares the student for entry level employment on a wildland fire crew. Meets the basic training requirements for the U.S. Forest Service firefighter qualification system, through National Wildfire Coordinating Group (NWCG) and Federal Emergency Management Agency (FEMA) basic firefighter training courses. These NWCG courses include S-130, S-180, L-180, FEMA IS-100.b and IS-700.a. This course is intended for students who wish to pursue a career with a wildland fire suppression agency or for a specialty with a municipal fire control agency. (CSU, AVC)

(R unlimited*)

* Course repeatability allowed for mandated training as stated in Title 5, Sections 55763(c) and 58161(c).

FTW 122 *WILDLAND PUBLIC INFORMATION OFFICER, PREVENTION AND INVESTIGATION

3 units

3 hours weekly

Presents information necessary to understand roles and functions of the Wildland Fire Information Officer, Wildland Fire Prevention Officer, and Wildland Fire Investigation Officer. Meets the basic training requirements for the U.S. Forest Service firefighter qualification system, through National Wildfire Coordinating Group (NWCG) and Federal Emergency Management Agency (FEMA). These NWCG courses include S-203, FI-110, and P-101. Intended for students to pursue a career with a wildland fire protection agency. (CSU, AVC)

FTW 123 *WILDLAND FIRE OPERATIONS

3 units

3 hours weekly

Presents the command structure and operational process for ground and air operations in control of wildland fires. Introduces the fire suppression oriented student to the needs and timing for logistical, finance and planning assistance on wildland fires. Intended for students to pursue a career with a wildland fire suppression agency or for a specialty within a municipal fire control agency. (CSU, AVC)

FTW 124 *WILDFIRE CHAIN SAWS

1.5 units

36 hours total

Corequisite: *Completion of or Concurrent enrollment in FTW 121.*

Provides the knowledge needed to become a wildfire power saw operator. Covers safety considerations, techniques of saw operation, maintenance and repairs. Wildfire power saws (S-212) is identified training in the National Wildfire Coordinating Group Suppression Curriculum. Intended for students to pursue a career with a wildland fire management agency or for a specialty with a municipal fire control agency. (CSU, AVC)

FTW 221 *WILDLAND FIREFIGHTER SAFETY AND SURVIVAL

3 units

3 hours weekly

Corequisite: *Completion of or Concurrent enrollment in FTW 121.*

This course is intended for student who are planning to pursue a career with a wildland fire. The course places emphasis on avoiding situations and conditions which have resulted in fire shelter deployments, injuries, fatalities for wildland firefighters and the methods to avoid this type of situation and to survive should they become entrapped. (CSU, AVC)

FTW 222 *WILDLAND FIRE BEHAVIOR

3 units

3 hours weekly

Corequisite: *Completion of or Concurrent enrollment in FTW 121.*

This course is intended for students that have completed a basic wildland firefighter training course and desires a greater understanding of wildland fire behavior. This provides information necessary for a greater understanding of wildland fire behavior and fire behavior calculations. The effects of fuels, topography, and weather are discussed. Curricula is based off of National Wildfire Coordinating Group (NWCG) S-290. Intended for students to pursue a career with a wildland fire suppression agency or for a specialty within a municipal fire control agency. (C-ID: FIRE 241 X) (CSU, AVC)

FTW 223 *WILDLAND ENGINE FIREFIGHTER

4 units

5 hours weekly

This course prepares the student for employment on a wildland fire engine. Includes engine operations, hose lays, and related skills. Intended for students to pursue a career with a wildland fire management agency or for a specialty with a municipal fire control agency. This course IS NOT intended to cover the Basic Wildland Firefighter skills training. (CSU, AVC)

FTW 224 *WILDLAND FIRE CONTROL

3 units

3 hours weekly

This course provides the student with the skills and knowledge to size up a wildland/urban interface fire incident, evaluate the potential situation, order and deploy the necessary resources, and apply safe and effective strategy and tactics to minimize the threat to life and loss of property. (AVC)