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Degree: A.A. - Fire Technology
 Certificate: Fire Technology

Fire Technology Degree and Certificate

The Fire Technology A.A. degree or certificate focuses on preparation for a career in the fire service. It includes educational opportunities for those currently employed within the fire service, and those within volunteer fire agencies. Courses include those required for transfer to four-year colleges, those required to meet eligibility requirements for employment, and those required for incentive salary increases.

Firefighting is a public safety profession that requires special knowledge of safety, rescue, emergency medical operations, and hazardous materials. A grade of "C" or better is required in each fire technology course for progression in the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Complete the duties of an entry level firefighter
- Perform as an EMT at a scene of an incident or emergency
- Identify the fundamentals of the Incident Command System and assess how it is used by fire departments at emergencies
- Compare and contrast the make up of a moderate size fire department with a large fire department and a fully paid department with a volunteer fire department
- Describe the components of Firefighting Personnel Protective Equipment (PPE)
- Compare and contrast modern PPE with antiquated PPE
- Analyze simulated fire situations for indicators of flashover versus backdraft potential and prescribe mitigation measures to prevent them from occurring
- Assess the fundamentals of physical science as they relate to the fire services: measurements; energy and work theories; power and transfer of heat principals; the laws of matter and the conservation of energy; and the chemical reaction called fire
- Classify and compare the various types of municipal water systems
- Describe the fundamentals of building construction and apply this knowledge to fire situations where forcible entry and overhaul evolutions may weaken the already fire-weakened structure
- Compare and contrast fire prevention versus fire suppression efforts
- Draft a pre-fire plan
- Evaluate and analyze the rate of fire spread in a structure fire
- Explain the physical and chemical properties of fire

Career Opportunities

A great variety of career opportunities is open to students who successfully complete specific portions of this program of study. There is an urgent demand for trained personnel in such areas as firefighter-paramedic, fire investigation, fire prevention, hazardous materials, public education, and firefighter. Financially and professionally rewarding employment in these areas may be found on the local, state, federal and private levels.

Requirements for Degree or Certificate		35 Units
FT 200	Emergency Medical Technician I (5)	5
or PMED 100	Emergency Medical Technician - Basic (5)	
FT 300	Fire Protection Organization	3
FT 301	Fire Prevention Technology	3
FT 302	Fire Protection Equipment and Systems	3
FT 303	Building Construction for Fire Protection	3
FT 304	Fire Behavior and Combustion	3
And a minimum of 15 units from the following:		15
FT 110	Fire Apparatus (3)	
FT 130	Fire Company Organization and Management (3)	
FT 132	Fire Service Records and Reports (3)	
FT 140	Related Codes and Ordinances (3)	
FT 170	Fire Investigation (3)	
FT 180	Rescue Practices (3)	
FT 190	Fire Tactics and Strategy (3)	
FT 192	Wildland Fire Control (3)	
FT 310	Fire Service Hydraulics (3)	
FT 320	Hazardous Materials (3)	

Associate Degree Requirements: The Fire Technology Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

FT 110 Fire Apparatus 3 Units

Advisory: FT 300

Hours: 54 hours LEC

This course covers various aspects of fire apparatus. Topics include design, typing, specifications, construction, performance capabilities, and maintenance. Also included are warning devices and the utilization of apparatus in fire service emergencies.

FT 130 Fire Company Organization and Management 3 Units

Advisory: FT 300 or FIRE 1090.

Hours: 54 hours LEC

This course provides a review of fire department organization, planning, organizing and supervising to meet the needs of the fire department, with emphasis on the company officer's role.

FT 132 Fire Service Records and Reports 3 Units

Advisory: FT 300 or FIRE 1090.

Hours: 54 hours LEC

This course covers fire department records systems, principles of report writing, applications in the area of pre-fire survey, and post-fire reporting.

FT 140 Related Codes and Ordinances 3 Units

Advisory: FT 300 or FIRE 1090.

Hours: 54 hours LEC

This course includes familiarization and interpretation of national, state and local codes, ordinances and laws which influence the field of fire prevention.

FT 170 Fire Investigation 3 Units

Advisory: FT 300
Hours: 54 hours LEC

This course introduces the general practices involved in fire investigation. Topics include determining the cause of fires (accidental, suspicious and incendiary); types of fires; related laws; introduction to incendiary fires; motives for starting fires; recognizing and preserving evidence; interviewing witnesses and suspects; arrest, detention, and court procedures.

FT 180 Rescue Practices 3 Units

Advisory: FT 300 or FIRE 1090.
Hours: 54 hours LEC

This course focuses on rescue problems and techniques, emergency rescue equipment; toxic gases, chemicals, diseases, and radiation hazards. Also included are the care of victims including emergency childbirth, respiration and resuscitation, extrication and other emergency conditions.

FT 190 Fire Tactics and Strategy 3 Units

Advisory: FT 300
Hours: 54 hours LEC

This course of instruction is a basic requirement of all fire suppression personnel. Topics include the principles of fire control, utilization of staffing, equipment and placement, extinguishing agents, and fire control methods on the fireground.

FT 192 Wildland Fire Control 3 Units

Advisory: FT 300
Hours: 54 hours LEC

This course covers all aspects of wildland fire fighting and introduces advances in technology for wildland fire suppression. Topics include fire behavior, weather conditions, topography factors, safety, prevention, extinguishing methods, initial attack, Incident Command System (ICS), communications, aircraft assistances, hand crews, and bulldozer operation.

FT 200 Emergency Medical Technician I 5 Units

Same As: PMED 100
Prerequisite: HEED 323 with a grade of "C" or better
Enrollment Limitation: Not open to students with a current EMT-Basic certificate.
Hours: 72 hours LEC; 72 hours LAB

This course is designed to provide instruction to the level of Emergency Medical Technician - Basic. Topics include skills necessary to provide emergency medical care at a basic life support level with a fire, ambulance, or other specialized service. This course is conducted in compliance with Title 22, Division 9, Chapter 2 of the California Code of Regulations and Emergency Medical Technician - Basic (EMT-I). A "C" or better is required for certification as Emergency Medical Technician - Basic. Field trips are required. This course may be taken four times for credit.

FT 209 Emergency Medical Technician IFS Refresher Course 1 Unit

Prerequisite: Valid EMT certificate.
Hours: 20 hours LEC; 4 hours LAB

Persons who hold a valid Emergency Medical Technician I certificate, or a certificate that has been expired for less than one year, shall be admitted. Consists of classroom instruction, simulation and supervised field instruction. May be taken four times for credit.

FT 300 Fire Protection Organization 3 Units

Course Transferable to CSU
Hours: 54 hours LEC

This course provides an introduction to fire protection, career opportunities and related fire service fields. Topics include 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, and introduction to fire strategy and tactics.

FT 301 Fire Prevention Technology 3 Units

Corequisite: FIRE 1090 or FT 300.
Course Transferable to CSU

Hours: 54 hours LEC

This course provides fundamental information regarding the history and philosophy of fire prevention. Topics include organization and operation of a fire prevention bureau, use of fire and building codes, fire investigation, identification and correction of fire hazards, plan review, report and record keeping, and duties and responsibilities of a fire prevention officer.

FT 302 Fire Protection Equipment and Systems 3 Units

Corequisite: FIRE 1090 or FT 300.
Course Transferable to CSU

Hours: 54 hours LEC

This course provides information relating to sprinkler design and the operation of fire detection and alarm systems. Topics include fire cause and effect, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, standpipe systems, and portable fire extinguishers.

FT 303 Building Construction for Fire Protection 3 Units

Corequisite: FIRE 1090 or FT 300.
Course Transferable to CSU

Hours: 54 hours LEC

This course is the study of the components of building construction that relate to fire safety. Specific focus is on elements of construction and the design of structures that are shown to be key factors when inspecting buildings, pre-planning fire operations and emergency operations at fires. Topics include wood, ordinary, steel, and concrete construction, principles of fire and smoke growth, and fire resistance construction.

FT 304 Fire Behavior and Combustion 3 Units

Corequisite: FIRE 1090 or FT 300.
Course Transferable to CSU

Hours: 54 hours LEC

This course provides the theories and fundamentals of how and why fires start, spread and are controlled. Topics include an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques.

FT 310 Fire Service Hydraulics 3 Units

Advisory: FT 300 or FIRE 1090.
Course Transferable to CSU

Hours: 54 hours LEC

This course provides information on obtaining water from various sources of supply, properly routing it through the pump, and discharging it through various devices with the proper pressures for fire suppression.

FT 320 Hazardous Materials 3 Units

Advisory: FT 300 or FIRE 1090.
Course Transferable to CSU

Hours: 54 hours LEC

This course is an Introduction to the world of hazardous chemicals, including physical properties, uses in industry, and characteristics when involved in spills, fires, and accidents. This course also provides basic hazardous materials information regarding emergency procedures, legal requirements, and compliance to regulations.