

# FIRE SCIENCE

The Fire Science program prepares students for careers in the fire service and enhances skills for those who are currently employed in that area.

## Associate in Science Degrees

- Fire Science - Associate in Science (<https://lbcc-public.courseleaf.com/degrees-certificates/fire-science/fire-science-as/>)

## Certificates of Achievement

- Fire Science - Certificate of Achievement (<https://lbcc-public.courseleaf.com/degrees-certificates/fire-science/fire-science-certificate-achievement/>)

### FIRE 1 3 units

#### Fire Protection Organization

##### 54 hours lecture

Grading: letter grade.

This course outlines the components of fire protection and career opportunities in fire protection and suppression fields; introduction to the philosophy and history of fire protection and analysis of the effects of fire losses to the community; the organization and functions of public and private fire protection and emergency services and fire departments as part of local governments including the laws and regulations affecting the fire service; fire service nomenclature, specific fire protection functions, and the culture of the fire service; basic fire chemistry and physics, and fire strategy and tactics.

Transferable to CSU Only

### FIRE 2 3 units

#### Fire Prevention Technology

##### 54 hours lecture

Grading: letter grade.

This is an introductory class which outlines the history and philosophy of fire prevention, including the organization and operation of a fire prevention bureau utilizing fire prevention codes. This course also identifies fire hazards and the proper method of correction in compliance of each fire hazard. This course allows the students to identify the relationship of fire prevention with fire safety educational codes in accordance with industry standards.

Transferable to CSU Only

### FIRE 3 3 units

#### Fire Protection Equipment and Systems

##### 54 hours lecture

Grading: letter grade.

This course provides educational information relating to the features and operations of fire detection, protection and alarm systems. This course also addresses the use, inspection and maintenance of portable fire extinguishers.

Transferable to CSU Only

### FIRE 4 3 units

#### Building Construction

##### 54 hours lecture

Grading: letter grade.

This course covers the components of building construction methods which are relevant to firefighter safety. The components of building design and methods of construction of structures are known to be key factors when inspecting buildings, preplanning fire operations and operating at fire scenes. Fires which have occurred in residential, commercial, and industrial buildings are examined and used to illustrate the development and evolution of building and fire codes. An off-site field trip to examine a building under construction is scheduled during regular class hours.

Transferable to CSU Only

### FIRE 5 3 units

#### Fire Behavior and Combustion

##### 54 hours lecture

Grading: letter grade.

This course will present the theory and fundamentals of how and why fires start, and the factors which affect the spread of fires. A study of the basic fundamentals of fire chemistry and their physical components will be presented and discussed. In addition, an analysis of fire characteristics and the effects of extinguishing agents and fire management methods are studied.

Transferable to CSU Only

### FIRE 53 3 units

#### Fire Hydraulics

##### 54 hours lecture

Grading: letter grade.

This course addresses the history of fire apparatus, pump operations, safe driving techniques, tiller and aerial apparatus operation, and water supply considerations. From basic apparatus maintenance to fire pump theory and advanced hydraulic calculations, this course covers everything a fire service driver/operator needs to know. Specific areas that are covered are driver training and selection, fire ground operations, the use of fire hose and nozzles, foam operations, apparatus with aerial devices, driving and operating apparatus with a tiller, and testing and performing daily and weekly safety checks for all types of fire apparatus.

Transferable to CSU Only

### FIRE 54 3 units

#### Hazardous Materials 1

##### 54 hours lecture

Grading: letter grade.

This course is a study of basic fire chemistry and physics. A variety of topics will be addressed, including problems of flammability encountered by firefighters during fire suppression activities. Topics that will be examined are the dynamics associated during fire suppression activities involving fuels and chemical oxidizers in conjunction with hazardous materials during storage and transport.

Transferable to CSU Only

**FIRE 57 3 units**

**Introduction to Fire Tactics & Strategy**

**54 hours lecture**

Grading: letter grade.

This is an introductory course which outlines the principles of fire ground control through the utilization of personnel, equipment and extinguishing agents on the fire ground or emergency incident. This course is the backbone of the Incident Command System, along with the theory of the Rapid Intervention Crew and Standardized Emergency Management System. These topics will be presented as theories and principles with emphasis on practical and appropriateness of key academic strategies. This course provides group interactions and individualized instruction to develop a support system and a mentor experience with the instructor. Attendance and participation at two scheduled field trips will be required during the course.

Transferable to CSU Only

**FIRE 58 3 units**

**Intro to Fire Company Administration**

**54 hours lecture**

Grading: letter grade.

This is an introductory level class which outlines the concepts of fire department organization and administration. Students will study planning, organizing and supervisory techniques within a Fire Company operation, with an emphasis on the first line company officer's role as a Fire Captain.

Transferable to CSU Only

**FIRE 61 3 units**

**Rescue Practices**

**54 hours lecture**

Grading: letter grade.

This course is an introduction to the fundamentals of technical rescue, beginning with the technical rescue apparatus, tools and equipment, incident management and conducting search and rescue operations in structures and the environment. Technical rope rescues, confined space, trench, vehicle and machinery extrication are specific emergency incidents that are examined. The course also covers Rapid Intervention Crews (RIC) which are designed to rescue firefighters that may need assistance during emergency operations. Specific skills are covered including Firefighter self survival techniques, emergency escape maneuvers, Self Contained Breathing Apparatus emergency and survival skills.

Transferable to CSU Only

**FIRE 62 3 units**

**Fire Apparatus and Equipment**

**54 hours lecture**

Grading: letter grade.

This course focuses on a study of mobile and fixed fire apparatus and equipment, with a review of their perspective construction specifications and performance capabilities. The course outlines the effective deployment, utilization and performance of Fire apparatus and equipment under emergency conditions, when used for firefighting purposes.

Transferable to CSU Only

**FIRE 64 3 units**

**Hazardous Materials 2**

**54 hours lecture**

Prerequisite: FIRE 54.

Grading: letter grade.

This course is a continuing study of hazardous materials addressing the identification of explosives, toxic substances and radioactive materials in storage and in transit.

Transferable to CSU Only

**FIRE 65 3 units**

**Fundamentals of Fire Safety**

**54 hours lecture**

Grading: letter grade.

This course will be appropriate for students who wish to pursue a career in a paid or volunteer fire department. A variety of topics will be addressed, including information on current techniques and prevention of injuries while promoting safe routine and emergency fire operations.

Transferable to CSU Only

**FIRE 240 0.5 units**

**Firefighter I Physical Agility**

**9 hours lecture, 9 hours laboratory**

Grading: letter grade or pass/no pass.

This course is designed to assess physical agility requirements for the fire service. The course will cover the review of all physical requirements to successfully pass the Biddle test, including time requirements, successive actions that will result in a failure and activities that will result in an automatic failure of the physical agility test. It includes a review of nutritional facts and physical training principles. The course meets the statewide standards of the CalChiefs organization.