

# FIRE PROTECTION TECHNOLOGY

BEFORE ENROLLING IN DEGREE APPLICABLE COURSES, IT IS RECOMMENDED THAT YOU COMPLETE ENGL 001A AND READ 053.

## FIRE PROTECTION TECHNOLOGY (FPT)

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The fire service is one of the most dynamic employers in the country. This program is designed to provide the student with updated skills and knowledge necessary to complete and successfully apply for fire service careers.

The curriculum serves as an in-service program as well as a pre-employment program for students seeking employment or advancement in the profession of fire fighting and fire prevention technology.

### Student Learning Outcomes:

The Fire Protection Technology program at Mission College has two areas of emphasis. Fire Protection Technology is designed to provide skills necessary for success in the fire protection field, from Firefighter, Fire Engineer, Fire Captain, and Fire Marshal to Chief Fire Officer. The Emergency Medical Technician area is focused on advanced emergency medical skills necessary to effectively use in the medical technology field to support and sustain life.

Upon successful completion of courses in Fire Protection Technology students will be able to:

1. Critically analyze and classify hazardous and catastrophic events into appropriate categories (fire, medical, hazardous materials, and weapons of mass destruction incidents)
2. Explain the elements of critical assessment for fire and medical emergencies.
3. Analyze, assess, and demonstrate the knowledge and appropriate fire extinguishing methods to suppress fires and response to hazardous situations.
4. Analyze, assess, and demonstrate the appropriate medical treatment that is a solution to a given medical problem.
5. Demonstrate in written and oral presentation, or lab exercises, knowledge and application of firefighting and medical equipment.
6. Demonstrate in written and oral presentation, or practical exercises, knowledge and application of firefighting safety clothing and survival techniques.
7. Demonstrate knowledge of building components, fire suppression systems, hazardous materials classifications, fire behavior and combustion, and rescue techniques.
8. Achieve eligibility for certification on the State Fire Training Certification Tracks as a Firefighter I (Educational Requirements) from the California State Fire Marshal Office's through the completion of at least 24.5 units Fire Protection Technology coursework.
9. Achieve eligibility for certification on the State Fire Training Certification Tracks as an Emergency Medical Technician from the California State Fire Marshal Office's through the completion of at least 8 units Fire Protection Technology coursework.

Students will be assessed through examinations, quizzes, observation reports, and case studies, demonstration of skills, oral presentation, discussions, research papers and practicum evaluation.

### Fire Protection Technology - AS Degree: FPT 65-Emergency Medical Technician:

- To provide the knowledge and skills necessary to perform as an EMT at the scene of an incident or emergency.
- To provide the knowledge and skills necessary to become certified as an Emergency Medical Technician.

### Career Options:

- Firefighter
- Inspector
- Investigator
- Plan Checker
- Supervision
- Manager

*Some career options require more than two years of college study. Classes beyond those listed in the Associate Degree program may be required to fulfill some career options or for preparation for transfer to a university program.*

### Highlights:

- Up-to-date technical information.
- Field trips to a variety of fire service locations.
- Networking with other fire service professionals.
- Courses offered on instructional television with downlinks to local fire stations for interactive viewing.

### A.S. Degrees:

- Fire Technology

### Certificates:

- Emergency Medical Technician - I

Mission College Fire Technology classes that are designed for in-service training and/or certification through the Office of the State Fire Marshal.

### Schedule Matrix:

COURSE	FALL	SPRING	WEEKEND
FPT 051	D,E	D,E	
FPT 052	D,E	D,E	
FPT 053	D,E	D,E	
FPT 054	D,E	D,E	
FPT 055	D,E	D,E	
FPT 056	D,E	D,E	
FPT 057	D,E	D,E	
FPT 060			
FPT 061	D,E	D,E	
FPT 065	D,E	D,E	
FPT 065C	D,E	D,E	
FPT 065L	D,E	D,E	
FPT 180			

**D= DAY CLASSES; E= EVENING CLASSES; X= WEEKEND**

### Firefighter I Certification Educational Requirements:

Mission College provides classes that meet the educational requirements for a Firefighter I certification as defined by the office of the State Fire Marshal.

Educational Requirements for Firefighter I:	Units
FPT 051.....Fire Protection Organization.....	3.0
FPT 061.....Fundamentals of Fire Suppression.....	3.0
FPT 052*.....Fundamentals of Fire Behavior and Control.....	3.0
FPT 057.....Rescue Practice.....	3.0
FPT 060*.....Wildland Fire Technology.....	3.0
FPT 065.....Emergency Medical Technician - I (EMT).....	6.0
FPT 065C.....Emergency Medical Technician - I.....	0.5
FPT 065L.....Emergency Medical Technician - I Lab.....	1.5
WHP 004D.....Firefighter Physical Agility Training.....	2.0

\*May be completed collaterally while serving in the internship

Manipulative experience required for completion of the Firefighter I certification program may be completed by any combination of the following that results in 1100 hours of emergency service:

1. Six months as a paid full time firefighter with a recognized fire agency.
2. Completion of a volunteer training program and sufficient hours in emergency response to satisfy the State Fire Marshal's requirements.
3. Completion of 1100 hours of volunteer firefighting through the Mission College Internship program.

### Fire Technology - A.S. Degree

The Fire Technology program is designed to provide educational opportunities to persons who are seeking employment or advancement in public or private fire protection agencies as well as persons who are pursuing a four-year degree in Fire Administration or Fire Protection Engineering. The courses will not only prepare the student for an entry level position in one of the several areas concerned with safeguarding and preserving human life and property against fire and disaster, but will also increase the student's potential for advancement.

Core Curriculum Courses (Required)	Units
CHEM 030A.....Fundamentals of Chemistry.....	3.0
FPT 051.....Fire Protection Organization.....	3.0
FPT 052.....Fire Behavior and Combustion.....	3.0
FPT 053.....Fire Protection Equipment and Systems.....	3.0

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FPT 054	Building Construction For Fire Protection	3.0
FPT 055	Fire Prevention Technology	3.0
FPT 056	Hazardous Materials Technology	3.0
MATH 000C	Intermediate Algebra	4.0

**Plus 6 units from the following: Units**

FPT 057	Rescue Practices	3.0
FPT 058	Fire Apparatus and Equipment	2.0
FPT 059	Firefighting Tactics & Strategy	2.0
WHP 004D	Fitness: Fire Agility Training	2.0
FPT 060	Wildland Fire Technology	3.0
FPT 061	Fundamentals of Fire Suppression	3.0
FPT 065	Emergency Medical Technician I	6.0
FPT 065C	EMT I	0.5
FPT 065L	EMT I Lab	1.5
FPT 075	Emergency Response Training	3.0
FPT 180	Emergency Medical Technician I Recertification	2.0
<b>FPT 180A</b>	<b>EMT Recertification Part I (MCTV)</b>	<b>1.0</b>
<b>FPT 180B</b>	<b>EMT Recertification Part II (MCTV)</b>	<b>1.0</b>
<b>Total Program A.S. Degree Requirements:</b>		<b>31.0</b>

### Emergency Medical Technician - I - Certification

FPT 65, FPT 65C and FPT 65L meet the educational requirements for certification as an EMT-I as specified in the regulations of the State of California Emergency Medical Services. Eligibility for this course requires successful completion of CPR for the Professional Rescuer available through the American Red Cross, Healthcare Provider CPR through the American Heart Association or Mission College. Students must show proof of CPR certification in the first two weeks of their EMT class.

## FIRE PROTECTION TECHNOLOGY (FPT)

### 051 • FIRE PROTECTION ORGANIZATION 3.0 units

Total Lecture 54 hours

Advisory: MATH 903

Acceptable for credit: California State University

This course provides a general introduction to the field of Fire Protection, including career opportunities, philosophy and history of fire protection; the organization and function of fire protection services and a basic introduction to the chemistry and physics of fire and fire control techniques with an introduction to fireground strategy and tactics. *Pass/No Pass Option.*

### 052 • FIRE BEHAVIOR AND COMBUSTION 3.0 units

Total Lecture 54 hours

Advisory: MATH 903

Acceptable for credit: California State University

This course focuses on the theory and fundamentals of how and why fires start, the spread and fire control methods; an in-depth study of fire chemistry, fire behavior and physics; fire characteristics of materials and compounds and the use of extinguishing agents and fire control techniques. *Pass/No Pass Option.*

### 053 • FIRE PROTECTION EQUIPMENT AND SYSTEMS 3.0 units

Total Lecture 54 hours

Advisory: FPT 052 and MATH 903

Acceptable for credit: California State University

Portable fire extinguishing equipment including inspection and maintenance procedures; fundamentals of design and operation of various types of sprinkler systems; fundamentals of design and operation of special hazard protection systems and associated fire detection and signaling systems; water supply requirements for standpipe, sprinkler and other fire protection systems. *Pass/No Pass Option.*

### 054 • BUILDING CONSTRUCTION FOR FIRE PROTECTION 3.0 units

Total Lecture 54 hours

Advisory: FPT 051 and MATH 903

Acceptable for credit: California State University

Theory and fundamentals of fire protection; fire protection laws, regulations and standards; the Uniform Building Code requirements for fire safety in buildings; classification of buildings by occupancy; water requirements for fire protection; public and private fire protection systems; fire protection requirements for buildings, special occupancies and open areas. *Pass/No Pass Option.*

### 055 • FIRE PREVENTION TECHNOLOGY 3.0 units

Total Lecture 54 hours

Advisory: FPT 051 and MATH 903

Acceptable for credit: California State University

Organization and function of fire prevention; fire and life safety inspections; utilization of the Uniform Fire Code and related standards in determining requirements for fire safety; surveying and mapping procedures; recognition of fire and life hazards; engineering a solution of a fire hazard; enforcing the solution of a fire hazard; public education aspects of fire prevention; firefighter's responsibility in determining the cause of fire. Required for application to the Fire Technology Internship Program. *Pass/No Pass Option.*

### 056 • HAZARDOUS MATERIALS TECHNOLOGY 3.0 units

Total Lecture 54 hours

Advisory: FPT 052 and MATH 903

Acceptable for credit: California State University

This course provides an in-depth study of materials presenting special problems in fire fighting operations; laws and standards involved in the storage and handling of hazardous chemicals and substances; the identification of hazardous materials; and the handling procedures and practices for emergencies involving corrosive water reactive, toxic, explosive and radio-active materials. *Pass/No Pass Option.*

### 057 • RESCUE PRACTICES 3.0 units

Total Lecture 36 hours, Total Lab 54 hours

Advisory: FPT 051

Acceptable for credit: California State University

This course is a lecture and lab class in technical and manipulative skill training in rescue procedures, including patient examination and medical interventions; poison and environmental emergencies; multiple casualties and triage; performing manual lifts and carries; low angle and confined space rescue; hazardous materials awareness and decontamination procedures; improvising and providing transportation; extrication procedures. Materials Fee: \$40.00. *Pass/No Pass Option.*

### 060 • WILDLAND FIRE TECHNOLOGY 3.0 units

Total Lecture 27 hours, Total Lab 81 hours

Acceptable for credit: California State University

This course focuses on the organizational skills necessary for wildland fire protection. The minimum safety equipment required for the field evolutions consists of an OSHA approved helmet with chin strap, impact goggles and leather gloves. Materials Fee: \$39.00. *Pass/No Pass Option.*

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## 061 • FUNDAMENTALS OF FIRE SUPPRESSION

3.0 units

Total Lecture 27 hours, Total Lab 81 hours

Advisory: WHP 004D

Acceptable for credit: California State University

Manipulative skill and technical training in the identification and operation of fire service tools and equipment; the tying and employment of fire service knots and hitches; identification, actuation and employment of portable fire service extinguishers; donning and testing of protective breathing apparatus; basic hose evolutions; laying multiple lines; operating hose lines above and below street level; fire service ladder evolutions; basic salvage and overhaul techniques. Safety equipment required. Uniform required. Materials Fee: \$38.00. Pass/No Pass Option.

## 065 • EMERGENCY MEDICAL TECHNICIAN I THEORY

6.0 units

Total Lecture 108 hours

Prerequisite: AH 011, or American Heart Association BLS for the Healthcare Provider or equivalent

Corequisite: FPT 065L and FPT 065C

Acceptable for credit: California State University

This EMT-I training program is designed to prepare individuals to render pre-hospital basic life support at the scene of an emergency, during transport of the sick and injured, or during interfacility transfer within an organized EMS system. This course meets all the theory requirements for certification as an Emergency Medical Technician-I as specified in the regulations approved by the State of California Emergency Medical Services Authority on October 10, 2004. Students must also successfully complete FPT 065L and FPT 065C concurrently with FPT 065 to be eligible for certification. Materials Fee: \$25.00. Grade Only.

## 065C • EMERGENCY MEDICAL TECHNICIAN I

0.5 units

Total Lab 27 hours,

Prerequisite: AH 011, American Heart Association BLS for the Healthcare Provider or equivalent

Corequisite: FPT 065, FPT 065L or FPT 180

The purpose of this EMT-I training course is to prepare individuals to render prehospital basic life support at the scene of an emergency, during transport of the sick and injured, or during interfacility transfer within an organized EMS system. This course meets all the clinical requirements for certification as an Emergency Medical Technician –I as specified in the regulations approved by the State of California Emergency Medical Services Authority on October 10, 2004. This course allows the student to experience "hands-on" skills while caring for patients under the supervision of a preceptor. The student will need to show proof of a current t.b. skin test (<6 months ago), either immunizations for or blood tests for the following: rubeola, rubella, varicella, Hepatitis B, tetanus. Students may retake this course to gain an expanded educational experience. Students enrolled in this class must attend an orientation and scheduling meeting. Students must successfully complete concurrently FPT 065 and FPT 065L to be eligible for certification. If an EMT-I Course Completion Certificate was previously awarded by Mission College this course can be taken alone. May be repeated three times. Pass/No Pass Option.

## 065L • EMERGENCY MEDICAL TECHNICIAN LAB

1.5 units

Total Lab 81 hours

Advisory: MATH 903

Prerequisite: AH 011, American Heart Association BLS for the Healthcare Provider or equivalent

Corequisite: FPT 065 and FPT 065C

Acceptable for credit: California State University

The purpose of this EMT-I training course is to prepare individuals to render prehospital basic life support at the scene of an emergency, during transport of the sick and injured, or during interfacility transfer within an organized EMS system. This course meets all the skills laboratory requirements at the mandated instructor: student ratio of 1:10 for certification as an Emergency Medical Technician –I as specified in the regulations approved by the State of California Emergency Medical Services Authority on October 10, 2004. Students must successfully complete concurrently FPT 065 and FPT 065C to be eligible for certification. May be repeated two times. Materials Fee: \$93.00. Pass/No Pass Option.

## 073 • FIRE GROUND HYDRAULICS

2.0 units

Total Lecture 36 hours

Prerequisite: Firefighter 1 Certification requirements or equivalent.

Acceptable for credit: California State University

Principles of hydraulics; hydraulic measurements; engine and hose appliance calculations; calculate discharge and velocity of flow; determine engine and nozzle pressures in field situations. Pass/No Pass Option.

## 180 • EMT I - REFRESHER

2.0 units

Total Lecture 36 hours

Advisory: MATH 903

Prerequisite: AH 011 American Heart Association BLS for the Healthcare Provider or equivalent.

Acceptable for credit: California State University

The purpose of this EMT-I training course is to prepare individuals to render prehospital basic life support at the scene of an emergency, during transport of the sick and injured, or during interfacility transfer within an organized EMS system. This course meets all the refresher course requirements for recertification as an Emergency Medical Technician –I as specified in the regulations approved by the State of California Emergency Medical Services Authority on October 10, 2004. May be repeated three times. Materials Fee: \$39.00. Pass/No Pass Option.