

Palo Verde College

Program Outline Report

Program Basics

Program Title:	Fire Science Hazardous Materials Specialist Certificate
Program Status:	Active from 2020-21 Summer (2021SU)
Department:	Fire Science Technology
Award Type:	Certificate of Achievement (Credit)
Program/Catalog Description	Students who wish to concentrate on meeting the requirements for Hazardous Material Specialist for entry level employment in the fire service or promotional opportunities will develop the required knowledge, skills and abilities in the area of Hazardous Materials and in fire suppression, fire prevention, training and administration. Opportunities also exist with private industry safety programs, insurance companies and fire equipment manufacturing firms. Through the expertise of the faculty and the exposure to professional fire service personnel, students can expect to be trained in the latest theories and techniques in Hazardous Materials, fire technology, firefighting skills and emergency medical training.
Control Number:	41227
Credential ID:	No value
Transferability:	No value
(SP01) Program TOP Code:	2133.00
(SP01) Program TOP Code:	Fire Technology
(SP02) Student Program Award:	Certificate requiring 30 to fewer than 60 semester units
Maximum Credits:	30
Minimum Credits:	30
Curriculum Committee Approval Date:	05/13/2021
Board of Trustees Approval Date:	06/08/2021
External Review Approval Date:	06/08/2021

Proposal Details

Proposal Start:	2020-21 Summer (2021SU)
What changes have been made to the program:	No value
Program Justification:	Currently Palo Verde College offers a Hazardous Material Technician Degree requiring a total of 60 units. Having an education in Haz Mat is definitely beneficial for the fire service. This addition will allow students to achieve a Hazardous Material Certificate as well. The hope is the student will continue their education and achieve an AS.

Submission Rationale

- New Program

Program Requirements

Fire Science Hazardous Materials Specialist Certificate (Total 30)

Complete all of the following

Required Courses 19.75 units (Total 19.75)

Complete the following number of credits: 19.75

FST090 - Pre-Service Academy	0.25-12
EMS161 - Emergency Medical Technician Refresher	1-1.5
FST152 - Haz Mat Technician 1A: Basic Chemistry	2
FST153 - Haz Mat Technician 1B: Applied Chemistry	1.75
FST154 - Haz Mat Technician 1C: Incident Considerations	1.75
FST155 - Haz Mat Technician 1D: Tactical Field Operations	1.75
FST157 - Haz Mat Specialist 1F: Specialized Mitigation Techniques	1.75
FST158 - Haz Mat Specialist 1G: Tactical Field Operations	1.75

Elective Courses 10.25 units (Total 10.25)

Complete the following number of credits: 10.25

FST080 - First Responder Skills	0.25-24
FST106 - Auto Extrication	0.5
FST107 - Driver/Operator: Aerial/Truck Operations	1.25
FST111 - River and Flood Rescue Technician	0.75
FST110 - River and Flood Water Rescue Operations	0.5
FST112 - Personal Water Craft Rescue	0.5
FST113 - Rescue Boat Operations	0.5
FST115 - Fire Apparatus Driver/Operator 1A: Emergency Vehicle Operations	1.5
FST116 - Fire Apparatus Driver/Operator 1B Pump Operations	1.5
FST119 - Fire Control 6 Wildland Firefighting Essentials	0.75
FST120 - Firefighter Survival	0.5
FST123 - Fire Control 3B: Structural Firefighting in Live-Fire Simulators	0.25
FST124 - Fire Control 3A: Structural Firefighting in Acquired Structures	0.25
FST126 - River and Flood Motorized Rescue Boat Technician	0.5
FST125 - Surface Rescue Boat Technician	0.25-0.75
FST148 - S-190: Introduction to Wildland Fire Behavior	0.25
FST150 - Hazardous Materials First Responder Operational Level	0.75-1
FST151 - Hazardous Materials First Responder Awareness Level	0.25
FST156 - Trench Rescue Technician	0.5
FST159 - I-200 Basic Incident Command System (ICS)	0.5-0.75
FST161 - Hazmat Incident Command System	1
FST162 - I-300: Intermediate Incident Command System (ICS)	1-1.25
FST163 - I-400: Advanced Incident Command System (ICS)	0.75
FST165 - Confined Space Rescue Technician	1
FST166 - Confined Space Rescue Awareness	0.25
FST167 - Confined Space Refresher	0.25
FST173 - Rescue Systems 1: Basic Rescue Skills	2
FST174 - Rescue Systems 2: Advanced Rescue Skills	2
FST175 - Low Angle Rope Rescue Operational	0.5

FST183 - Terrorism, Weapons of Mass Destruction	1
FST219 - Rescue Systems 3: Structural Collapse Technician	0.5
FST223 - Hazardous Materials Incident Commander	0.75
FST224 - Instructor 1: Instructional Methodology	2
FST226 - Instructor II: Instructional Development	2
FST240 - Fire Prevention 1: Fire and Life Safety Inspections For Company Officer	1.5
FST241 - Fire Investigation 1A: Fire Origin and Cause Determination	2
FST242 - Fire Investigation 1B: Techniques of Fire Investigation	2
FST243 - Fire Investigation 2A: Criminal and Legal Procedures	2
FST245 - Company Officer 2A: Human Resource Management	2
FST246 - Company Officer 2B: General Administrative Functions	1
FST247 - Company Officer 2C: Fire Inspections and Investigations	2
FST248 - Company Officer 2D: All-Risk Command Operations	2
FST249 - Company Officer 2E: Wildland Incident Operations	2
FST252 - Chief Fire Officer 3A: Human Resource Management	1.25
FST253 - Chief Officer 3B: Budget and Fiscal Responsibilities	1
FST254 - Chief Fire Officer 3C: General Administration Functions	1.25
FST256 - Chief Fire Officer 3D: Emergency Service Delivery Responsibilities	1.25
FST257 - Fire Inspector 1A: Duties and Administration	1.25
FST258 - Fire Inspector 1B: Fire and Life Safety	1.25
FST259 - Fire Inspector 1C: Field Inspection	1.25
FST260 - Fire Inspector 1D: Field Inspection-California Specific	0.75
FST261 - Fire Inspector 2A: Fire Prevention Administration	0.75
FST262 - Fire Inspector 2B: Fire and Life Safety Requirements	1.25
FST263 - Fire Inspector 2C: Inspect New & Exist Fire & Life Safety Sys & Equip	0.75
FST264 - Fire Inspector 2D: Hazardous Materials, Operations, and Processes	1.75
FST266 - Haz Mat Emergency Response: First Responder Operations-Decontamination	0.25
FST268 - HazMat/Weapons of Mass Destruction: Assist Safety Officer	0.75
FST290 - Selected Studies in Fire Science Technology	0.25-4
FST277 - Rope Rescue Technician/High Angle Rescue	1
FST276 - Open Water Rescuer--Basic	0.5
FST274 - Fire Control 5A; Aircraft Rescue and Firefighting Initial Training	1.75
FST272 - S-290: Intermediate Wildland Fire Behavior	1.75
FST273 - Fire Instructor III: Instructional Program Management	2
FST275 - Fire Control 5B; Aircraft Rescue and Firefighting Live Fire Drill	0.25

Recommended Sequences

Fire Science Hazardous Materials Specialist Certificate

Term 1 (Total 1.25-13.5)

Required Courses 19.75 units EMS161 - Emergency Medical Technician Refresher 1-1.5

Required Courses 19.75 units FST090 - Pre-Service Academy 0.25-12

Term 2 (Total 7-7.25)

Elective Courses 10.25 units FST115 - Fire Apparatus Driver/Operator 1A: Emergency Vehicle Operations	1.5
Elective Courses 10.25 units FST120 - Firefighter Survival	0.5
Elective Courses 10.25 units FST148 - S-190: Introduction to Wildland Fire Behavior	0.25
Required Courses 19.75 units FST152 - Haz Mat Technician 1A: Basic Chemistry	2
Required Courses 19.75 units FST153 - Haz Mat Technician 1B: Applied Chemistry	1.75
Elective Courses 10.25 units FST156 - Trench Rescue Technician	0.5
Elective Courses 10.25 units FST159 - I-200 Basic Incident Command System (ICS)	0.5-0.75

Term 3 (Total 7.25)

Elective Courses 10.25 units FST166 - Confined Space Rescue Awareness	0.25
Required Courses 19.75 units FST154 - Haz Mat Technician 1C: Incident Considerations	1.75
Required Courses 19.75 units FST155 - Haz Mat Technician 1D: Tactical Field Operations	1.75
Required Courses 19.75 units FST157 - Haz Mat Specialist 1F: Specialized Mitigation Techniques	1.75
Required Courses 19.75 units FST158 - Haz Mat Specialist 1G: Tactical Field Operations	1.75

Term 4 (Total 6.5)

Elective Courses 10.25 units FST165 - Confined Space Rescue Technician	1
Elective Courses 10.25 units FST226 - Instructor II: Instructional Development	2
Elective Courses 10.25 units FST240 - Fire Prevention 1: Fire and Life Safety Inspections For Company Officer	1.5
Elective Courses 10.25 units FST241 - Fire Investigation 1A: Fire Origin and Cause Determination	2

Program Outcomes**Fire Science Hazardous Materials Specialist Certificate**

PSLO

Performance

Successfully complete a written test with a minimum 80% passing score.

80

Demonstration of the proper techniques required to perform on a Hazardous Materials incident with an 80% success rate.

80

Identify Hazardous Materials and their potential impacts on fire personnel and the community with a minimum 80% passing score.

80

Program Narrative

Narrative Item 1. Program Goals and Objectives

Students completing this program will be able to identify and discuss the concepts and theories related to Hazardous Materials in the fire service including its history and development, fire prevention techniques and protection equipment, fire behavior and chemistry and firefighter safety. Students will also be able to recognize the tools and equipment used in the fire service and demonstrate their safe and proper use. Students will also demonstrate the interpersonal and communication skills necessary to function within the fire service, as well as, display the values, ethics and professionalism required to be successful.

Narrative Item 2. Catalog Description

Students who wish to concentrate on meeting the requirements for Hazardous Material Specialist for entry level employment in the fire service or promotional opportunities will develop the required knowledge, skills and abilities in the area of Hazardous Materials and in fire suppression, fire prevention, training and administration. Opportunities also exist with private industry safety programs, insurance companies and fire equipment manufacturing firms. Through the expertise of the faculty and the exposure to professional fire service personnel, students can expect to be trained in the latest theories and techniques in Hazardous Materials, fire technology, firefighting skills and emergency medical training.

Narrative Item 3. Program Requirements

Requirements	Name/#	Fire Science Hazardous Materials Specialist Certificate	Units
		Course Title	
Required Core (19.75 Units)	EMS 161	EMERGENCY MEDICAL TECHNICIAN 1 (REFRESHER)	1.5
	FST 090	PRE-SERVICE FIRE ACADEMY	7.5
	FST 152	HAZ MAT TECHNICIAN 1A BASIC CHEMISTRY	2
	FST 153	HAZ MAT TECHNICIAN 1B APPLIED CHEMISTRY	1.75
	FST 154	HAZ MAT TECHNICIAN 1C INCIDENT CONSIDERATIONS	1.75
	FST 155	HAZ MAT TECHNICIAN 1D TACTICAL FIELD OPERATIONS	1.75
	FST 157	HAZ MAT SPECIALIST 1F SPECIALIZED MITIGATION TECHNIQUES	1.75
	FST 158	HAZ MAT SPECIALIST 1G TACTICAL FIELD OPERATIONS	1.75
			19.75
Electives (10.25 Units)	FST 080	FIRST RESPONDER	12
	FST 106	AUTO EXTRICATION	0.5
	FST 107	DRIVER/OPERATOR AERIAL/TRUCK OPERATIONS	1.25
	FST 110	RIVER AND FLOOD WATER RESCUE OPERATIONS	0.5
	FST 111	RIVER AND FLOOD RESCUE TECHNICIAN	0.75
	FST 112	PERSONAL WATER CRAFT RESCUE OPERATIONS	0.5
	FST 113	RESCUE BOAT OPERATIONS	0.5
	FST 115	FIRE APPARATUS/OPERATOR 1A/EMERGENCY VEHICLE OPERATIONS	1.5
	FST 116	FIRE APPARATUS/OPERATOR 1B PUMP OPERATIONS	1.5
	FST 119	FIRE CONTROL 6 WILDLAND FIREFIGHTING ESSENTIALS	0.75
	FST 120	FIREFIGHTER SURVIVAL	0.5
	FST 123	FIRE CONTROL 3B: STRUCTURAL FIREFIGHTING IN LIVE FIRE SIMULATORS	0.25
	FST 124	FIRE CONTROL 3A STRUCTURAL FIREFIGHTING IN ACQUIRED STRUCTURES	0.25
	FST 125	SURFACE RESCUE BOAT TECHNICIAN	0.75
	FST 126	RIVER AND FLOOD MOTORIZED RESCUE BOAT TECHNICIAN	0.5
	FST 148	S-190 INTRODUCTION TO WILDLAND FIRE BEHAVIOR	0.25
	FST 150	HAZARDOUS MATERIALS FIRST RESPONDER OPERATIONAL LEVEL	1
	FST 151	HAZARDOUS MATERIAL FIRST RESPONDER AWARENESS LEVEL	0.25
	FST 156	TRENCH RESCUE TECHNICIAN	0.5
	FST 159	I-200 BASIC INCIDENT COMMAND SYSTEM (ICS)	0.75
	FST 161	HAZ MAT - INCIDENT COMMAND SYSTEMS	1
	FST 162	I-300: INTERMEDIATE INCIDENT COMMAND SYSTEM (ICS)	1
	FST 163	I-400: ADVANCED INCIDENT COMMAND SYSTEM (ICS)	0.75
	FST 165	CONFINED SPACE RESCUE TECHNICIAN	1
	FST 166	CONFINED SPACE RESCUE AWARENESS	0.25
	FST 167	CONFINED SPACE REFRESHER	0.5
	FST 173	RESCUE SYSTEMS 1: BASIC RESCUE SKILLS	2
	FST 174	RESCUE SYSTEMS 2: ADVANCED RESCUE SKILLS	2
	FST 175	LOW ANGLE ROPE RESCUE OPERATIONAL	0.5
	FST 183	TERRORISM, WEAPONS OF MASS DESTRUCTION	1
	FST 219	RESCUE SYSTEMS 3 STRUCTURAL COLLAPSE TECHNICIAN	0.5
	FST 223	HAZARDOUS MATERIALS INCIDENT COMMANDER	0.75
	FST 224	INSTRUCTOR 1 INSTRUCTIONAL METHODOLOGY	2
	FST 226	INSTRUCTOR II INSTRUCTIONAL DEVELOPMENT	2
	FST 240	FIRE PREVENTION 1 FIRE AND LIFE SAFETY INSPECTIONS FOR COMPANY OFFICER	1.5
	FST 241	FIRE INVESTIGATION 1A FIRE ORIGIN AND DETERMINATION	2
	FST 242	FIRE INVESTIGATION 1B TECHNIQUES OF FIRE INVESTIGATION	2
	FST 243	FIRE INVESTIGATION 2A CRIMINAL AND LEGAL PROCEDURES	2
	FST 245	COMPANY OFFICER 2A HUMAN RESOURCE MANAGEMENT	2
	FST 246	COMPANY OFFICER 2B GENERAL ADMINISTRATIVE FUNCTION	1
	FST 247	COMPANY OFFICER 2C FIRE INSPECTIONS AND INVESTIGATIONS	2

	FST 248	COMPANY OFFICER 2D ALL RISK COMMAND OPERATIONS	2	
	FST 249	COMPANY OFFICER 2E WILDLAND INCIDENT OPERATIONS	2	
	FST 252	CHIEF FIRE OFFICER 3A HUMAN RESOURCE MANAGEMENT	1.25	
	FST 253	CHIEF FIRE OFFICER 3B BUDGET AND FISCAL RESPONSIBILITIES	1	
	FST 254	CHIEF FIRE OFFICER 3C GENERAL ADMINISTRATION FUNCTIONS	1.25	
	FST 256	CHIEF FIRE OFFICER 3D EMERGENCY SERVICE DELIVERY RESPONSIBILITIES	1.25	
	FST 257	FIRE INSPECTOR 1A DUTIES AND ADMINISTRATION	1.25	
	FST 258	FIRE INSPECTOR 1B FIRE AND LIFE SAFETY	1.25	
	FST 259	FIRE INSPECTOR 1C FIELD INSPECTION	1.25	
	FST 260	FIRE INSPECTOR 1D FIELD INSPECTION CALIFORNIA SPECIFIC	0.75	
	FST 261	FIRE INSPECTOR 2A FIRE PREVENTION ADMINISTRATION	0.75	
	FST 262	FIRE INSPECTOR 2B FIRE AND LIFE SAFETY REQUIREMENTS	1.25	
	FST 263	FIRE INSPECTOR 2C INSPECT NEW AND EXISTING FIRE & LIFE SAFETY SYSTEMS AND EQUIPMENT	0.75	
	FST 264	FIRE INSPECTOR 2D HAZARDOUS MATERIALS OPERATION S AND PROCESSES	1.75	
	FST 266	HAZ MAT EMERGENCY RESPONSE FIRST RESPONDER OPERATIONS DECONTAMINATION	0.25	
	FST 268	HAZ MAT WEAPONS OF MASS DESTRUCTION ASSISTANT SAFETY OFFICER	0.75	
	FST 272	S-290 INTERMEDIATE WILDLAND FIRE BEHAVIOR	1.75	
	FST 273	FIRE INSTRUCTOR III INSTRUCTIONAL PROGRAM MANAGEMENT	2	
	FST 274	FIRE CONTROL 5A: AIRCRAFT RESCUE AND FIREFIGHTING INITIAL TRAINNG - 40 HRS.	1.75	
	FST 275	FIRE CONTROL 5B: AIRCRAFT RESCUE AND FIREFIGHTING LIVE FIRE - 8 HRS.	0.25	
	FST 276	OPEN WATER RESCUER	0.5	
	FST 277	ROPE RESCUE TECHNICIAN/HIGH ANGLE RESCUE	1	
	FST 290	SELECTED STUDIES IN FIRE SCIENCE TECHNOLOGY	2	
Required Major Total				
College GE Requirements	30 Units			
Transferrable Electives	None			
TOTAL UNITS	As Needed to Reach 30 30 Units			
Term		PROPOSED SEQUENCE		GE
	Course #	Course Title	Units	Major
1	EMS 161	EMERGENCY MEDICAL TECHNICIAN 1 (REFRESHER)	1.5	X
1	FST 090	PRE-SERVICE FIRE ACADEMY	7.5	X
2	FST 115	FIRE APPARATUS/OPERATOR 1A/EMERGENCY VEHICLE OPERATIONS	1.5	X
2	FST 120	FIREFIGHTER SURVIVAL	0.5	X
2	FST 148	S-190 INTRODUCTION TO WILDLAND FIRE BEHAVIOR	0.25	X
2	FST 152	HAZ MAT TECHNICIAN 1A BASIC CHEMISTRY	2	X
2	FST 153	HAZ MAT TECHNICIAN 1B APPLIED CHEMISTRY	1.75	X
2	FST 156	TRENCH RESCUE TECHNICIAN	0.50	X
2	FST 159	I-200 BASIC INCIDENT COMMAND SYSTEM (ICS)	0.75	X
3	FST 166	CONFINED SPACE RESCUE AWARENESS	0.25	X
3	FST 154	HAZ MAT TECHNICIAN 1C INCIDENT CONSIDERATIONS	1.75	X
3	FST 155	HAZ MAT TECHNICIAN 1D TACTICAL FIELD OPERATIONS	1.75	X
3	FST 157	HAZ MAT SPECIALIST 1F SPECIALIZED MITIGATION TECHNIQUES	1.75	X
3	FST 158	HAZ MAT SPECIALIST 1G TACTICAL FIELD OPERATIONS	1.75	X
4	FST 226	INSTRUCTOR II INSTRUCTIONAL DEVELOPMENT	2	X
4	FST 240	FIRE PREVENTION 1 FIRE AND LIFE SAFETY INSPECTIONS FOR COMPANY OFFICER	1.5	X
4	FST 241	FIRE INVESTIGATION 1A FIRE ORIGIN AND DETERMINATION	2	X
4	FST 165	CONFINED SPACE RESCUE TECHNICIAN	1	X
TERM 4		TOTAL UNITS	30.00	

Narrative Item 4. Master Planning (Not needed for Certificates of Career Preparation)

This Fire Science Hazardous Material Specialist Certificate of Education provides opportunities for personal and professional growth to a diverse community of students in an academic environment committed to student success. The award of a Fire Science Hazardous Material's Certificate is more than an accumulation of units. It symbolizes a successful attempt on the part of the college to lead students through patterns of learning experiences designed to develop certain capabilities and insights in the fire service world and more specifically, Hazardous Materials.

Narrative Item 5. Enrollment and Completer Projections (Not needed for Certificates of Career Preparation)

40 -80 students annually.

Narrative Item 6. Place of Program in Curriculum/Similar Programs (Not needed for Certificates of Career Preparation)

Currently all of the required curriculum for this Fire Science Hazardous Material's certificate resides in the course catalog. After properly organizing and categorizing the material, students may now receive recognition through a certificate of achievement that will help them meet criteria for hiring, as well as, promotional opportunities.

Narrative Item 7. Similar Programs at Other Colleges in Service Area (Not needed for Certificates of Career Preparation)

There are no other colleges teaching the curriculum in the area; however State Fire Training offers certifications for the attached classes. Please see attached: State Fire Training Algorithm

LMI and Analysis

Attached

Advisory Committee Recommendations (Not needed for Certificates of Career Preparation)

attached

Regional Consortia Recommendations (Not needed for Certificates of Career Preparation)

attached