



2022 Spring Academy

March 21 - 25, 2022 Sacramento, CA



Course Catalog

The Academy is proud to offer over 20 great courses to support your EVT staff in their efforts to stay cutting-edge and efficient with the latest technology. Also included in the training is the California Emergency Equipment Showcase for learning about the newest products, and many events where mechanics and fire fighters can network to build resources for problem-solving and further growth.

Online registration is now open.

The deadline to register is March 4, 2022.



CERTIFICATION CLASSES

LEVEL I

EVT-1A EMERGENCY VEHICLE SYSTEMS Monday-Friday 36 hours

Emergency Vehicle Technician 101 Module: **This course module provides an overview of the roles and responsibilities of an emergency vehicle technician from entry-level technician knowledge and skills to personnel and fleet management.**

Chassis Systems and Components Module: This course module provides an overview of the knowledge and skills needed to inspect, maintain, repair, and test emergency vehicle chassis systems and components.

Cab and Body Module: This course module provides an overview of the knowledge and skills needed to inspect, maintain, repair, and test emergency vehicle cab and body systems and components.

Tanks and Accessories Module: This course module provides an overview of the knowledge and skills utilized by an emergency vehicle technician to inspect, maintain, and repair tanks and their accessories.

Instructor: Michael Stoever

EVT-1B ELECTRICAL SYSTEMS A Monday-Friday 36 hours

This course provides an overview of the knowledge and skills needed to inspect and maintain low-voltage electrical systems in emergency vehicles

PREREQUISITE: EVT-1A Emergency Vehicle Systems

Required Materials: PPE as required by agency: i.e., boots, gloves, helmet, hearing and eye protection are recommended. A hand held calculator is also recommended for this class.

Instructor: David Smith

EVT-1C PUMPS & ACCESSORIES Monday-Friday 36 hours

This course provides an overview of the knowledge and skills utilized by an emergency vehicle technician to inspect, maintain, repair, and test pumps and their accessories including the priming system, plumbing and valves, gauges, indicator and warning systems, interlocks, and packing and seals.

NOTE: Pump test portion of class is held at different locations requiring students to have transportation.

PREREQUISITE: EVT-1A Emergency Vehicle Systems

Notes: Each student shall provide proper PPE as required by their agency: i.e. Boots, gloves, helmet, hearing and eye protection are recommended. A handheld calculator is also recommended for this class. Students will need to provide their own transportation to the test pit sites.

Instructor: Chris Belflower

LEVEL II

EVT-2A ELECTRICAL SYSTEMS B

Monday-Friday

36 hours

This course provides an overview of the knowledge and skills needed to repair low-voltage electrical systems, and inspect, maintain, and repair electronic controls and instrumentation in emergency vehicles

PREREQUISITE: EVT-1A Emergency Vehicle Systems

EVT-1B Electrical Systems A

Required Materials: DVOM and calculator

Instructor: Tom Tengdin

RE-TAKE EXAMS

A student who does not pass their course exam will be given ONE re-take exam. The re-take exam will be given same day after a short review by the instructor. Students will be notified within the hour after completion of their exam if a re-take exam is needed.

CONTINUING EDUCATION CLASSES

FF-501 KNOWING YOUR APPARATUS Monday-Friday 32 hours

This hands-on class will provide a detailed mechanical review or foundation for any individual involved with Emergency Vehicles including: Firefighters, Engineers-Operators, Officers and Maintenance Personnel. This program will cover the unique problems and issues associated with emergency vehicle functions, specifications and daily operation. Additionally, the class will focus on how systems and components work, inspections, troubleshooting and testing techniques to meet the operational readiness requirements specific to emergency vehicles as documented in NFPA 1911 and NFPA 1002.

Instructor: Boyd Clegg

FF-502 FIRE PUMP TESTING Monday-Tuesday 16 hours

This course is designed as an entry level course to acquaint students with the principles, theories and operational pump testing requirements for all pumping fire apparatus. This course provides a working knowledge of common pump types and related accessories. Practical hands on experience will improve your ability to analyze pump performance and implement correct inspection, repair and maintenance procedures. Class includes hands on demonstration as students will perform an actual annual service pump test on apparatus provided. Procedures and techniques used to perform the various NFPA recommended pump tests will be conducted at the draft pit.

Instructor: Francis Enos

FM-002 SMALL ENGINE MODEL 34 Friday 4 hours

This course will give you a very thorough knowledge of proper maintenance on all engine systems specifically auxiliary pumps and wild land model 34 units. This program is to help better understand the most important diesel engine maintenance practices and to identify the signs of engine problems that can result from improper maintenance. The information in this program will help you to become better prepared to maintain diesel engines and extend the useful life of these Kubota powered products and to understand the role of maintenance in the reliability of the equipment.

Instructor: Danny Burleson

FM-102 Know your 2 cycle chain saw - BASIC Monday 8 hours

This class is designed for the fire fighter, mechanic or supervisor who operate and maintain 2 cycle equipment including chain saws, vent saws, cutoff saws and other equipment. All small engines require periodic maintenance to keep them working at peak performance. Learn the basics so your equipment is ready when you are. The class will focus on chainsaws as the examples in class, but most of the material is applicable to all 2 cycle equipment.

Instructor: David Perkins

CONTINUING EDUCATION CLASSES

FM-103 ELECTRICAL CHARGING & STARTING SYSTEMS Thursday 4 hours

This course will review problems with a truck's electrical system since they are often misdiagnosed when it comes to starters and alternators. This course will teach students the basic theory, operation, construction, and repair of heavy-duty starting and charging system components. The student will gain an understanding of starting and charging systems along with the associated testing and servicing of heavy truck starting, and charging systems. Course content includes discussion on voltage and amperage testing of starters and alternators including starter and alternator overhaul procedures .

Instructor: Rob Vastano

FM-106 AIR BRAKES & ABS Wednesday 8 hours

This course will discuss the fundamentals of compressed air braking systems, tactics for air system failure mode diagnosis and troubleshooting of an air brake system. Students will work with foundation brake components, including air compressors, valves, foundation drum brake and air disc brakes. This class will also incorporate the description, operation, and service elements found within dual air brake systems that are used on tractor drawn aerials. Additional topics covered include antilock braking systems (ABS) and stability technologies. In addition to classroom lectures and product cut-aways, visual aids are incorporated to demonstrate the components and related systems in each training class using operational demonstration boards.

Instructor: Rick Mello

FM-124 INTRODUCTION TO WELDING Mon-Tues & Wed-Thur 16 hours

This course is a practical "hands on" class that is intended for students who seek new or some review instruction in basic welding techniques utilizing many different welding processes. This course is also a great way to get reacquainted with electrical terms related to welding equipment. It's also for anyone who wants a refresher on basic electrical terminology and components related to welding and cutting. Course content will include basic electrical fundamentals for the common electric arc welding involving many different metals. There will also be a review of Engine-Driven Power Sources, Gas Metal Arc Welding, Gas Tungsten Arc Welding & Shielded Metal Arc Welding as well as Gouging. This course was developed for the purpose of providing basic educational materials to help the student understand the complex arc welding process. This course is almost all entirely a "hands on" class that will include the application of the many various types of welding and cutting equipment. Please note this course does not provide a welding certification.

Instructor: Alan Lindgren

CONTINUING EDUCATION CLASSES

FM-126 WHEELS & TIRES Friday 4 hours

This course is intended to provide information and training on proper identification, inspection and service of tire and wheel systems. Discussions regarding proper identification and use of the different tires, sizes, wear patterns, tire dating and inflation pressures of tires as well and the different types and styles of wheels used on fire apparatus is important. Maintenance, proper loading and safety considerations with regard to the latest NFPA standards shall also be reviewed.

Instructor: Gary Wilde

FM-202 Detroit Diesel Service Monday-Friday 32 hours

This course will cover maintenance and tune-up procedures used on typical engines found in fire apparatus. Various model design features and recommended applications will be covered.

Instructor: Chris Gaylor

FM-206 ALLISON TRANSMISSION PM SERVICE Wednesday-Thursday 12 hours

This course will cover the model identification service techniques and troubleshooting used on Allison automatic transmissions. Additional instruction will provide students with an understanding of the World Transmission operation, construction, service requirements and troubleshooting procedures of this new generation automatic transmission.

Instructor: Frank Burke

FM-219 WORLD TRANSMISSION PM Monday-Friday 36 hours

This class identifies the advanced skills and knowledge necessary for the contemporary fire apparatus mechanic. It addresses the latest level of expertise needed to properly service, maintain and repair Allison Transmissions used in fire apparatus in service today. This class includes a hands on teardown and rebuild of an Allison World transmission.

Instructor: Robert Hooper

FM-221 FOAM SYSTEMS Friday 4 hours

This course will cover descriptions of various foam systems produced by FRC Company such as the Foam Pro system as well as service requirements for these systems. To effectively troubleshoot and repair foam application systems, fire apparatus mechanics must also have a working knowledge of hydraulic and electrical systems. A step-by-step troubleshooting procedure will be discussed to help students determine the causes of malfunctions and problems interfering with various foam system operations. Proper maintenance and repair procedures will be discussed to assure that fire apparatus equipped with foam application systems will achieve maximum performance and service life. This course covers the basic types of foam systems including nomenclature, parts and applications of these systems.

Instructor: Norbe Puroll

CONTINUING EDUCATION CLASSES

FM-229D CUMMINS ENGINE SERVICE Monday-Friday 36 hours

Instruction in this class includes theory and hands on service, tune up and troubleshooting of the Cummins engines with focus on the ISL9 and ISX15 engine products and the CM2350 engine control system. This class is designed to cover the service, repair & maintenance practices on these engines and systems. It is also designed to meet Cummins guidelines relative to the Environmental Protection Agency (EPA) emission levels. Class Includes training on the following engine systems: fuel, lubrication, cooling, and air intake, checking engine component reuse as per Cummins guidelines, engine and valve timing, fuel injection system inspection and testing and proper engine maintenance utilizing hands on instruction using the latest PC based diagnostics tools.

Required Materials: Coveralls & work boots

Instructor: Fernando L

FM-232A AMBULANCE SERVICE & MAINTENANCE Monday-Friday 36 hours

This class will cover the latest manufacturing, NFPA, KKK & AMD standards and criteria used to build, service and maintain today's ambulances. Course content will include Blood Borne Pathogen awareness, vehicle body & build design, vehicle service, repair and maintenance techniques that are used to maintain OEM ambulance chassis, motor, drive train, steering, suspension, brakes, oxygen system, suction system and air conditioning/heating system. Course will provide an opportunity for students to research different design and build techniques used by today's ambulance manufacturers

Instructor: Kevin Roberts

FM-233 TITLE 13 LIGHTING PACKAGES & INSTALLATION Monday 8 hours

The state of California has several laws that designate what type of warning lights may be used on emergency vehicles and other publicly or privately owned vehicles. The main regulating agency for the emergency vehicle lighting industry in the United States is SAE International. These standards serve as recommended best practices, but are not required by law. The California Department of Transportation publishes similar industry standards for products sold within the state of California. These standards fall under California Title 13 which is **part of California's Code of Regulations, and are enforceable by law.** This course will provide the opportunity for students to review these standards and laws and will help students to define what are acceptable colors, the definitions of colors, their minimum brightness and distribution, their acceptable flash patterns and frequencies, environmental testing and testing setup. Additional course content will include differences in support vehicle emergency lighting vs. emergency vehicle lighting and applicable references to NFPA Standards.

Instructor: David Noe

CONTINUING EDUCATION CLASSES

FM-303 MULTIPLEXING—DIAMOND LOGIC Monday-Wednesday 24 hours

This course will cover the multiplexing systems used on fire apparatus chassis and systems. This training will introduce the technician to International Chassis Multiplexing Systems currently used to control vehicle components from head lights to the power take off operation. The information in the course is designed to increase the technician's skills in diagnosing the body controller, remote power module, and data links. Upon completion of this training course the technician will have the necessary skills to use the service software Diamond Logic builder and perform the necessary repairs to the chassis control system and wiring connection. The course will be a combination of hands on lab work and classroom information. The technicians attending the course are encouraged to come with their laptop that has a current version of DLB installed. It is not mandatory that the technician have this tool to participate in the training.

Instructor: Matt Torrence

FM-308 AERIAL SERVICE & MAINTENANCE Mon-Tues 16 hours

This class will cover the factory specific service and maintenance requirements for aerial apparatus used in today's fire service. Topics will include hydraulic system diagnostics and repairs, mechanical component inspection and repair, Inspection and repair of pre-plumbed waterways, electrical system diagnostics and repairs, multiplexing system of the aerial (if applicable), safety interlock systems and controls, structural degradation identification and repair and to include manufacturer recommended annual ladder testing requirements.

FM-312 PUMP THEORY & TROUBLESHOOTING Monday-Tuesday 16 hours

This class will provide information on basic to advanced pump theory, pump operations and troubleshooting of fire pumps and related systems. This class will acquaint the students with the principles and theories associated with maintenance required for fire apparatus and equipment. Review of the latest NFPA standards and how they are related to fire pumps and pump testing will also be discussed.

Instructor: James Jones

FM-331 LAWS, REGULATIONS & STANDARDS Friday 4 hours

State and Federal transportation laws and regulations are forever changing. This class will review the Federal Motor Vehicle Safety Standards, NFPA Standards and "Out of Service" criteria. Students will be acquainted with principles and theories associated with maintenance and repairs required for fire apparatus and equipment that are in use today. Recent case studies will be reviewed in the classroom setting.

Instructor: Mike Whittle

CONTINUING EDUCATION CLASSES

FM-332 DIESEL EMISSIONS

Friday

4 hours

The California Air Resources Board is involved in a variety of activities including on-road commercial trucks; diesel vehicle idling; construction; mining, off-road and other industries. Additionally, Green House Gas (GHG) control strategies are soon to be required for diesel vehicles in California. This course is designed to provide an overview of many diesel programs and will help the student understand the current emission requirements of today's diesel engines as required by state and federal agencies. Instruction regarding the opacity requirements of diesel engines as required by state and federal agencies will also be discussed.

Instructor: Randy Opher

FM-336 AERIAL DEVICE INSPECTION & TESTING

MON-TUES

16 hours

NFPA 1071, the Standard for Emergency Vehicle Technician Professional Qualifications, establishes the minimum job performance requirements for a person qualified as an emergency vehicle technician who is engaged in the inspection, diagnosis, maintenance, repair, and testing of an emergency response vehicle. This course will meet some of the minimum job requirements for the EVT. We will discuss practices and principles of aerial inspections and annual testing as required by NFPA 1911, Standard for Testing Fire Department Aerial Devices and NFPA 1915, Standard for Fire Apparatus Preventative Maintenance Programs as applied to the annual testing of aerial devices.

Instructor: Lawrence Achen

One-week Package of Classes: Students who wish to take a variety of short courses may enroll in a One Week Package which is the same price as weeklong tuition, and a significant savings over the daily rate. Students enrolling in multiple classes need to contact our office at 916-333-5044 for registration help.

Course Package Planning Grid	M	T	W	T	F
Fire Pump Testing	X	X			
Electrical Charging and Starting Systems				X	
Small Engine Model 34					X
Air Brakes & ABS			X		
Introduction to Welding	X	X			
Introduction to Welding			X	X	
Know your 2 cycle chain saw—Basic	X				
Wheels & Tires				X	
Aerial Device Inspection & Testing	X	X			
Allison PM Service			X	X	
Foam Systems					X
Title 13 Lighting Packages & Installation	X				
Aerial Service & Maintenance	X	X			
Pump Theory & Troubleshooting	X	X			
Laws, Regulations & Standards					X
Diesel Emissions					X



ACADEMY SCHEDULE

Academy Week runs Sunday, March 20—Friday, March 25 with the following events:

Sunday	12:00 — 5:00 pm	Check In
	5:00 — 5:30pm	Opening Night Ceremony
	5:30 — 6:30 pm	Hospitality
Monday	7:00 — 7:30 am	Late Check-In
Monday—Wednesday	8:00am — 5:00pm	Course Instruction
Thursday	8:00 am—12:00 pm	Course Instruction*
	12:00 -- 5:00 pm	California Emergency Equipment Showcase
	7:00 — 9:00 pm	CFMA 50th Celebration (see below)
Friday	8:00 am—12:00 pm	Course Instruction and Exams
	1:00 pm	EVTCC exams (pre-registration required thru EVTCC)

ACADEMY DETAILS

GETTING HERE

Sacramento International Airport is located approximately 26 miles from the Marriott Hotel in Rancho Cordova. Car rentals are readily available at the airport. Students will need to make their own transportation arrangements. CFMA is not able to provide shuttle service for students.

We are not having a host hotel for this years academy but we do have a discounted rate for students at the Marriott Hotel. Make sure you mention CFMA when making your reservation to insure you will receive the low conference rate. They are located at 11211 Point E Dr., Rancho Cordova, CA 95742. Reservations can be made by calling (916) 638-1100.

ACADEMY DETAILS

EXPLANATION OF FEES

Students may register for the entire week of classes for \$595 per person. Students may either select a week-long class or select multiple classes to fill the week. Those students wishing to attend on a daily basis may do so for \$195 per day. Textbooks and/or handouts will be provided in class at no additional cost. Personal check, company check, department purchase order or credit card information must accompany registration paperwork. Returned checks are charged \$25.

Registrations processed with a purchase order will be invoiced monthly until paid and must be paid no later than April 1, 2022. General registration closes March 4, 2022. Registrations received after that date will be assessed an additional \$100 per student for late registration fees.

CLASS CONFIRMATION

Students will be issued a receipt once registration and payment are received by the CFMA. CFMA reserves the right to cancel classes as required. Students will be contacted if there is any need to change classes. Class confirmations will be ***emailed*** by March 13, 2022. Area maps, last minute instructions, and program changes will be included so be on the lookout for your confirmation materials. **It is the student's responsibility to check email and bring the confirmation notice with you to Academy In-Person Registration.** Confirmation materials will also contain information about what equipment the student will be required to bring to class. **It is the student's responsibility to come to class prepared with the required equipment.**

EMERGENCY VEHICLE TECHNICIAN CERTIFICATION COMMISSION

Out-of-state students are NOT eligible to become California state certified Emergency Vehicle Technicians. However, they may elect to take the EVTCC exams. The California Fire Mechanics Academy has been designated as a test site for the EVT Certification Commission exams. For an informational booklet and registration form, contact EVTCC at: EVT Certification Commission, Inc., P.O. Box 894, Dundee, IL 60118 or 847-426-4075.

Technicians wishing to take EVTCC exams at the Academy MUST pre-register and pay the fees directly to EVTCC no later than 21 days prior to testing. Upon receipt of registration, a confirmation letter will be sent. Our classes may not prepare you for every aspect of EVTCC testing. Students should review the required elements of the EVTCC exam they are taking.

All EVTCC exams will be given on Friday, March 25, 2022.

STUDENT REGISTRATION FORM

NAME: _____

First MI Last

ADDRESS: _____

Street City State Zip

TELEPHONE _____

Cell Work Home

FIRE DEPARTMENT/AGENCY: _____ SFT # OR LAST 4 SSN _____

Course Selection

Monday	Tuesday	Wednesday	Thursday	Friday

Students registering individually may complete the form below and fax credit card registrations to CFMA at (916) 333-5014 or mail checks to CFMA, 6770 Stanford Ranch Rd #1129 Roseville, CA 95678
 Priority will be given to students enrolling online. Please call (916) 333-5044 if you have questions.
Agencies registering multiple students use Multiple Student Registration Form in addition.

Payment Information

Credit Card VISA MASTERCARD AMEX EXP. DATE: _____

Card Number: _____ Security Code: _____

Please Print Name on Card: _____

Billing Address: _____

No. & Street City State Zip

Authorized Signature: _____

Remit by email to cfm.academy@gmail.com
 Receipts will be issued upon payment received.

Please note: Cancellation/Substitution/Refund **Policy** Simple substitutions involving changing the name of the student but retaining the same class will be made as a courtesy to our students and supporting agencies. Substitutions that involve a change of student & class will be made only as space is available and with a \$50 change fee after March 4, 2022. Students or agency officials requesting cancellation and refund must do so in writing no later than February 28, 2022. Only the individual or entity who paid for the registration may request a substitution/cancellation/refund. **There is an administrative processing fee of 20% assessed on all cancellations**, including those on purchase order.

MULTIPLE STUDENT REGISTRATION FORM

PAYING AGENCY: _____

BILLING ADDRESS: _____

No & Street City State Zip

(Address Must Match Credit Card Billing Address)

AGENCY TELEPHONE: _____ **SUPERVISOR:** _____

STUDENT(S) NAME: (PLEASE INCLUDE A STUDENT REGISTRATION FORM FOR EACH STUDENT LISTED BELOW)

- | | |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

# Students	# Days	DESCRIPTION	UNIT PRICE	TOTAL
		Academy Registration Fee <i>Weekly Rate</i>	\$ 595.00	
		Academy Registration Fee <i>Daily Rate</i>	\$ 195.00	
		State Certification Course Fee <i>(only if taking the cumulative exam)</i>	\$ 140.00	
		Late Registration Fee <i>(received after 3/4/22)</i>	\$ 100.00 Per student	
		Welding Class Materials Fee	\$ 50.00	
		Additional Banquet Ticket *one ticket per student is included with registration	\$60.00	
TOTAL AMOUNT DUE:				

Payment Information

VISA **MASTERCARD** EXP. DATE: _____ **PO #** _____

Card Number: _____ Security Code: _____

Please Print Name on Card: _____

Billing Address: _____

No. & Street City State Zip

Authorized Signature: _____

Remit by email to cfm.academy@gmail.com