The Academy is proud to offer over 30 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 firefighters can network to build resources for problem-solving and further growth.

Online registration is now open.

The deadline to register is March 15, 2017.

Late fees apply after February 10, 2017.

New for 2017

Six new courses including:

Preventative Maintenance for Fire Apparatus,
Alternative Fueled Vehicle Safety,
Title 13 Lighting Packages & Installation
CERTIFICATION CLASSES

LEVEL I

CFM-115  FIRE PUMPS AND ACCESSORIES  Monday-Friday  36 hours

This class is designed as an entry level course to acquaint students with the principles, theories, installations, applications, and standard inspection practices associated with the maintenance, repairs and operational pump testing requirement for fire apparatus. The course provides a working knowledge of common pump types, various pump drivers, and controllers, installation of components and related accessories. Practical hands on experience will improve your ability to analyze pump performance and implement correct inspection, repair and maintenance procedures. This class fulfills partial education requirement for California State Fire Marshals Fire Mechanic Level I certification.

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.

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

Instructor: Chris Belflower  Chris has been involved with the fire service and fire apparatus since 1994 when he began his fire service career as a Firefighter/EMT. He is currently involved with the City of Mahtomedi Fire Department in Minnesota. Chris worked for 14 years as a fire pump training specialist with Waterous Company and is now a fire instructor and consultant.

LEVEL II

CFM-215A  ELECTRICAL SYSTEMS 2A  Monday-Friday  36 hours

This course is an overview of automotive and heavy truck electrical systems covering topics in basic electricity including electrical theory, battery theory, meters, alternators and cranking motors, advanced electricity, the application of the above theories plus troubleshooting of entire systems. Additional course content will include performance requirements of fire apparatus electrical systems, components of electrical systems and preventive maintenance and troubleshooting activities as per NFPA 1901. Students will also be provided with a thorough understanding of the use of diagnostic equipment, batteries, the construction and operation of starting systems, charging systems and components, and the accepted practices used to diagnose and repair electrical systems.

This course prepares the technician for the California State Fire Mechanics Level II Certification exam.

Required prerequisites are completion of FM-109: Electrical Systems 1A or successful completion of the Basic Electrical Challenge Pre-test. This class fulfills partial certification requirements for Level II fire mechanic.

Required Prerequisite:  FM-109: Electrical Systems I  Required Materials: DVOM and calculator

Instructor: Tom Tengdin  Tom Tengdin is an instructor for Pacific Gas & Electric and a firefighter for the North County Fire Department. He has spent his career using his electrical expertise in fields ranging from rock concerts to firefighting.
LEVEL II

**CFM-215B  ALLISON TRANSMISSION**  Monday-Friday  36 hours

This class will cover a thorough introduction, application, and general assembly. Training provides an understanding of the World Transmission operation, construction, service requirements, installation guidelines, and troubleshooting procedures. Classroom topics include torque converter operation, power flows, clutches, retarder operation, vehicle interface, electronic and hydraulic control systems, and preventive maintenance. Hands-on exercises cover volt-ohm meter use, basic electrical circuits, connector repair, disassembly and reassembly of a transmission to the modular level, and Allison diagnostic tool basics. This class fulfills partial education requirement for Level II state certification.

Instructor: Bob Hooper

Bob Hooper has been working with Allison Transmissions for over fifteen years working in the parts, shop, field service/sales capacities. Bob is currently employed with Valley Power Systems, Inc. as the Allison Dealer Development Manager and Allison Transmission Trainer. Valley Power Systems is the Allison Transmission Distributor from Fresno south with 44 dealers that represent all major OEM truck suppliers. Bob has a strong back ground with all truck makes with reference to the parts and specialty equipment side of the fire industry. Bob has been involved with many industry organizations over the years and has conducted training for the following organizations: California Association of School Transportation Officials, California Transit Association, Southern California Fire Mechanics Association, Los Angeles Department of Water and Power and with Waste Management Company.

LEVEL III

**CFM-215C  AERIAL APPARATUS**  Monday-Friday  36 hours

This course will provide instruction for Emergency Vehicle Technicians on the repair and maintenance requirements of today's Aerial Fire Apparatus. Course objectives include: Defining the terms and phrases commonly used with aerial fire apparatus. Principles of safe application and operation of aerial devices. Understanding and identifying the operational physics of aerial apparatus. NFPA 1901 design requirements for aerial fire apparatus and apply NFPA 1911 testing, inspection, and documentation requirements of all aerial fire apparatus. Understand and identify aerial device hydraulic and electrical systems symbols and components including the application of accepted practices of service and repair of aerial apparatus. The class will include lecture, demonstration and hands-on instruction. This class fulfills partial certification requirements for California State Level III Fire Mechanic.

**Required Materials:** Calculator (non-cell phone for exam), coveralls and work boots

Instructor: Anthony (Tony) Bulygo

Tony retired from the fire service as a Master Fire Mechanic for the Santa Clara County (CA) Fire Department after 38 years of service with experience in the diagnosis and repair of all major fire apparatus. Throughout his career, Tony has received training and certification from numerous apparatus and component manufacturers. Tony instructs the aerial apparatus class not only for the California Fire Mechanics Academy, but also for the Oregon, Colorado and Washington state fire mechanics academies. Tony also is an instructor for the Santa Clara County and San Jose Fire Departments engineer academies. Tony is the sole proprietor of Bulygo & Associates, a firm that provides consulting, inspection, investigation, specification writing and training to the fire service.
LEVEL III

CFM-216  AMBULANCE SERVICE AND MAINTENANCE  Monday-Friday  36 hours
This course will discuss and review 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. This class fulfills partial requirements for California State Fire Marshals Fire Mechanic Level III state certification.

Required Materials: DVOM, coveralls, work boots and non-cell phone calculator

Instructor: Kevin Roberts  Kevin Roberts was raised on a farm and discovered early on that he got along much better with the machinery than with the animals. In 1989 he opened Roberts Repair, servicing cars, trucks, and equipment. In 1996 the county approached him about servicing their ambulance fleet. He was able to become certified as an EVT Master Ambulance technician. This led Kevin to be invited to become part of the EVTCC Validation conference as a committee member working on test development for EVTCC Ambulance Certification. He sits on the board of directors of the EVTCC. Roberts Repair has expanded to cover the state of Wisconsin, and performs warranty work for a number of ambulance manufacturers. In the early 2000's Kevin wrote a column on maintenance subjects for Police Fleet Manager Magazine. He is presently a trainer for Carquest Technical Institute, teaching technicians throughout the Midwest.

CFM-218  HUMAN RESOURCE MANAGEMENT FOR COMPANY OFFICERS – COMPANY OFFICER 2A  Monday—Friday  40 hours
This course provides information on the use of human resources to accomplish assignments, evaluating member performance, supervising personnel, and integrating health and safety plans, policies, and procedures into daily activities. In addition, this course will summarize how internal and external influences affect the manager and how to effectively deal with these influences, provide an overview of supervision, management, and leadership concepts, practices, and theories. This course aligns with the new developing EVT certification series that are currently under revision. This course replaces the Fire Management 1 course that was required for California State certification.

Instructor: Charles Hurley  Charles Hurley currently serves as Fire Chief of the NASA/JPL Fire Department in Pasadena California. Chief Hurley has over 36 years in the Fire Service with 16 years as a Chief Officer. Chief Hurley is a certified instructor by the California State Fire Marshal and teaches the Level-1 and 2 Command and Management courses.
State Level Certified mechanics must recertify every five years in order to retain your California State Fire Marshal Fire Mechanic Certification. Recertification is only required for the highest level of certification you hold. Recertification hours must be made up of the topics required at that level. For example, Level I recertification is made up of 36 hours of Pump related courses. Level III recertification is made up of 36 hours equally split between Pumps, Electrical, Transmission, Aerial, Ambulance and Management. You may recertify using past classes your have taken at Academy if they fulfill these hour requirements, or you may register for the recertification classes below and knock out all the requirements at once. To find out when you are required to complete your recertification, please contact the Office of State Fire Training at 916-327-2129.

RCFM-1 LEVEL I RE-CERTIFICATION Monday-Friday 36 hours
This class provides review and update of operation, service and maintenance of pumps and accessories used in fire apparatus. The class fulfills re-certification requirements for Level I Fire Mechanic. Students will be provided with a personalized class schedule that will fulfill the CEU requirements of this certification level.

RCFM-2 LEVEL II RE-CERTIFICATION Monday-Friday 36 hours
This class will review and update the theory, operation and maintenance of fire pumps and accessories, electrical systems and Allison transmissions currently being used in fire apparatus. The class fulfills re-certification requirements for Level II Fire Mechanic. Students will be provided with a personalized class schedule that will fulfill the CEU requirements of this certification level.

RCFM-3 LEVEL III RE-CERTIFICATION Monday-Friday 36 hours
This class will review and update the theory, operation and maintenance of fire pumps and accessories, electrical systems, Allison transmissions, aerial ladders and platforms and ambulances currently being used in the fire service and emergency response agencies. Also included will be a review of basic supervisory, management and leadership skills. This class fulfills re-certification requirements for Level III Fire Mechanic. Students will be provided with a personalized class schedule that will fulfill the CEU requirements of this certification level.

Certification Re-Take Exams
A student who does not pass his certification exam is allowed to re-take the exam once for a retake fee of $35. Spring Academy retakes will be held at the June Section Meetings of the California Fire Mechanics Association. These dates are June 15th in the North Section and June 20th in the South Section. Students in certification classes should save these dates as no other retake opportunities will be offered.
CONTINUING EDUCATION CLASSES

FF-501  **Knowing Your Apparatus**  Monday-Friday  36 hours

This class will provide a detailed review of the primary operating systems of fire apparatus and troubleshooting techniques the operator can perform. The class will review the special requirements, needs and issues of fire service equipment and enhance the student's ability to provide more detailed information to the fire service mechanic. It will also cover the role of the apparatus operator dealing with emergency response equipment and the goal to be operationally ready at all times.

Instructor: Boyd Clegg  Boyd has always had a passion for teaching as well as working on anything mechanical. Boyd started his mechanical career as a smog and headlight technician and general mechanic. His fire service quest began in 1975 as a volunteer with the San Ramon Fire Department. He was hired in 1978 as a full time firefighter and did all their own equipment maintenance and repair. He advanced from Firefighter to Engineer, Captain and on to Battalion Chief prior to retirement in 2005. He continues serving his community as a volunteer firefighter for the Vacaville Fire Protection District and serves as Assistant Chief with that agency. Other classes he has taught include Rescue Systems, Auto Extrication, Pump Operations, Automotive Electrical Systems and Fire Ground Operations.

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.

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: Eric Haus  Eric Haus is a Captain with the SacMetro Fire Department. He is a gifted instructor with a passion for teaching in the hands-on environment.

FM-101  **Preventative Maintenance for Fire Apparatus**  Mon—Tues  16 hours

Significant technological advances made in fire apparatus have placed greater demands on EVTs. Many new advancements have also decreased the reliance on the human element to operate these new apparatuses while making maintenance and repair functions more complex. This course covers the maintenance, inspection and testing of fire apparatus as described in NFPA 1911. Course content will include NFPA definitions and terms, general requirements, out of service criteria, inspections, diagnostic checks and maintenance as well as coverage on performance and road testing of fire apparatus. Students will receive an in-depth review of this Standard as it is the minimum requirements for establishing an inspection, maintenance, and testing program for in-service fire apparatus, including guidelines for fire apparatus refurbishment and retirement.

Instructor: CFMA Staff
CONTINUING EDUCATION CLASSES

FM-103  ELE<BR>CTRICAL CHARGING & STARTING SYSTEMS  Thursday  4 hours
This course will review problems with a truck’s electrical system since they are often misdiagnosed when it<BR>comes to starters and alternators. This course will teach students the basic theory, operation, construction,<BR>and repair of heavy-duty starting and charging system components. The student will gain an understanding of<BR>starting and charging systems along with the associated testing and servicing of heavy truck starting, and<BR>charging systems. Course content includes discussion on voltage and amperage testing of starters and<BR>alternators including starter and alternator overhaul procedures .
Notes: This class will fulfill partial requirements as continuing education hours that are necessary for<BR>maintaining certifications and for recertifications.
Instructor: Rob Vastano

FM-106  AIR BRAKES & ABS  Tuesday–Wednesday  16 hours
This course will discuss the fundamentals of compressed air braking systems, tactics for air system failure<BR>mode diagnosis and troubleshooting of an air brake system. Students will work with foundation brake compo<BR>nents, including air compressors, valves, foundation drum brake and air disc brakes. This class will also incor<BR>porate the description, operation, and service elements found within dual air brake systems that are used on<BR>tractor drawn aerials. Additional topics covered include antilock braking systems (ABS) and stability technolo<BR>gies. In addition to classroom lectures and product cut-away, visual aids are incorporated to demonstrate the<BR>components and related systems in each training class using operational demonstration boards.
Instructor: Paul Jones

FM-109  ELECTRICAL SYSTEMS 1A  Monday-Friday  36 hours
This is the first of two courses in the electrical certification series. This course is designed for the student with<BR>entry level knowledge of electrical systems as they relate to automotive and truck applications and is strongly<BR>recommended for students wishing to take the electrical certification class, CFM-215A. This course will cover<BR>electrical history, electrical theory, magnetism, semiconductors, transistors, relays, circuit theory, circuit build<BR>ing and testing, multi meter basics, batteries, charging systems, starting systems and wiring diagrams and<BR>schematics. It is recommended that the student bring a digital volt ohm meter and calculator to class.
Instructor: David Smith  David is an instructor with Universal Technical Institute and the FACT program.
Notes: This course is a required prerequisite course for Electrical Systems 2. All students taking the<BR>CFM-215A Electrical Systems 2 course are required to have taken this class or successfully completed<BR>the Electrical Systems 1 challenge exam.

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CONTINUING EDUCATION CLASSES

**FM-124  INTRODUCTION TO WELDING  Tuesday—Thursday  20 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 Plasma Cutting and 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: Alex Demirjian & Silvio Modena

**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 as 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: Mark Phelps & Greg Ortega

**FM-130  ALTERNATIVE FUELED VEHICLE SAFETY  Mon—Tues  16 hours**

Alternative fuel vehicles are different than conventional vehicles and it is critical that first responders as well as fleet maintenance technicians be properly trained to deal with incidents involving these vehicles. Vehicle accident scenes as well as fleet maintenance shop safety are entering a whole new world with the growing numbers of electric, battery and gaseous fueled vehicles that are now found on the road and in our agencies fleets. This course is intended to provide training to all first responders who are dispatched to incidents involving alternative fuel vehicles including electric, hybrid, hydrogen fuel cell, and other gaseous fuels such as CNG (Compressed Natural Gas), LNG (Liquefied Natural Gas), LPG (Liquid Propane Gas), and their recharging/refueling stations. As many organizations and local government fleets are utilizing these new technology vehicles, it is just as important for fleet maintenance personnel to understand the operation and safety concerns of these Alternative Fuel Vehicles. This course will spend one day to review the safety procedures for electric and battery drive vehicles in a variety of conditions. Basic maintenance of such vehicles will also be covered. The second day of class will cover similar materials for a variety of Gaseous Fueled Vehicles such Hydrogen-Powered Vehicles, CNG, LNG, or propane.

Instructor: John Frala
The Office of Emergency Services Mutual Aid Fleet is a crucial part of California's disaster preparedness program. EVT's play a key role in this program as they are involved in the outfitting, maintenance and repair of Assignee Engines. This class will cover the mission of the mutual aid fleet, agency requirements for becoming an assignee, allowable modifications and equipment load, maintenance and repair guidelines for assignee engines. The course will cover the protocols for in-house and outsourced repairs and reimbursement, Form 161 & estimate process. There will be a Q & A session for specific questions.

Instructor: Chief Stephen Hart and Chief Paul Beckstrom

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

This course is designed to cover techniques used to diagnose and service steering and suspension units. Review of the types of steering systems found in truck applications including how to diagnose steering problems and methods of correction. Routine service performed on steering systems to maximize repair intervals will also be covered. This class will also include a comprehensive review of common inspection, maintenance and service practices of spring, air ride and independent front suspensions including the reading of tire wear patterns and their meaning, correct alignment procedures and service tips on keeping your apparatus in service.

Instructor: Gary May  
Gary joined Spartan Chassis in 2004 as a customer & product support technician for emergency response chassis before taking on the role of Technical Trainer. Gary brings more than 42 years of experience to his new role, and currently holds 8 state, ASE master mechanic certifications for truck and school bus.
CONTINUING EDUCATION CLASSES

**FM-216  BREATHING AIR COMPRESSORS**  
Thursday—Friday  8 hours

This new 8-hour course offers students an overview of the design, construction, control and operation of high pressure breathing air compressors. The course describes the principles of operation of the compressor and how the design is adapted to several different configurations to meet numerous fire service needs including both stationary and mobile compressor units. This is an entry-level course which teaches individuals design concepts and materials used in all components, routine maintenance on breathing air compressors which are used to fill SCBA cylinders, methods of equipment disassembly and reassembly and creating and maintaining service records. This course will also cover proper handling and operation, health and safety aspects and filter changing in addition to the filling of SCBA cylinders. This class is suitable for fire service personnel who are responsible for the day to day operation and maintenance of breathing air compressors as well as for supervisors responsible for breathing air monitoring and testing.

Instructor: Tim Smith

**FM-222  SMALL ENGINE SERVICE**  
Wednesday  8 hours

This course is designed for any firefighter, mechanic or supervisor who uses small-engine powered equipment in their fleet. Most mechanics desire the basic know-how to maintain, repair and rebuild various small engines used within the fire service. All small engines require periodic service to minimize the chance of breakdowns and to keep them operating at peak performance. This course will help to identify all the necessary special tools and knowledge required to perform service and repairs to small engines. Discussions will include how to properly identify, maintain and repair a variety of small engines.

Instructor: Ron Smith

**FM-226  FIRE LINE SAFETY AWARENESS (RED CARD)**  
Monday  8 hours

This course is for any person or hired vendor who intends to work with the CAL FIRE or the United States Forest Service on any active wildland fire. Any employee who falls into any of the following categories as an operator of any equipment including water tender operators, heavy equipment with water operators, dozer operators, crew bus drivers, vehicle drivers, mechanics, fallers, swamper, and chain saw operators this course is required for you to be able to work within the active wildland environment. The course will cover information on recent wildland events and hot topics including parts of a vegetation fire, situational awareness, fire-line hazards, incident check-in, and radio procedures. Guidelines when working with California inmate fire crews will also be covered. Students will also be taught the techniques on the care, maintenance, and deployment of the new generation fire shelter. Course completion card (Red Card) is valid for one year. Upon successful completion of an approved FSTEP course, participants will receive an Office of State Fire Marshal course completion certificate. Students are asked to bring a current Incident Response Pocket Guide (IRPG), proper PPE and a “practice” New Generation Fire Shelter to class.


Instructor: Roman Rubalcava
FM-229B  **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:** Rene Azares

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FM-229D  **DETROIT DIESEL REPAIR & TROUBLESHOOTING**  Monday-Friday  36 hours

This course will cover an overview to the Detroit Series 60 engine for 2007 to 2009 and changes to the DD engine family 2009 to 2017 with After-treatment. The course covers hands on training for tune-up, injector R&R, and troubleshooting with the Diagnostic Link 8.0X.

**Required Materials:** Coveralls & work boots

**Instructor:** Andy Quiniones

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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:** Brent Burzycki
CONTINUING EDUCATION CLASSES

FM-303  **MULTIPLEXING—DIAMOND LOGIC**  Monday-Friday  32 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 - PIERCE**  Tues—Weds  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.
Instructor: Pierce staff

FM-310  **AIR CONDITIONING**  Wednesday—Thursday  12 hours
This class will cover the theory, application, troubleshooting and servicing of air conditioning systems, components and applicable regulations pertaining to fire apparatus. Included will be a comprehensive review of the working components of air conditioning systems, operation principals of air conditioning systems and the diagnosing of HVAC failure causes and their corrections. Included in this class will be the repair, testing and pressure readings of an HVAC system, their meaning and the requirements of proper maintenance to ensure correct operation of HVAC.
Instructor: Gary May

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: Lairy Normand
FM-313  **Diesel Exhaust Extraction Systems**  Friday  4 hours

Diesel engines produce a mixture of toxic gases and particulates from the combustion process. These hazardous vehicle exhaust emissions in a fire station are one of a firefighter’s most significant cancer health risk and a serious legal liability for the fire department. It is essential to create healthy and safe working conditions by reducing these risks. This class was developed to help EVT’s and fire fighters alike develop a good understanding of the service and maintenance requirements of a diesel exhaust extraction system. Course topics include but are not limited to: Proper use of a diesel exhaust extraction systems, preventative maintenance of these types of systems, the dangers of diesel exhaust fumes, the requirements for air quality in the fire station, how to use these systems with the new generation diesel vehicles and the dissimilarities of other type of diesel exhaust extraction systems.

Instructor: Dick Bertani

FM-319  **Pierce Service & Product Updates**  Monday—Tuesday  8 hours

NOTE CHANGES FROM PRINT CATALOG - NOW 2-DAY COURSE COVERING TAK 4 ONLY IN DEPTH. Students attending this 2 day course will receive information and training that covers the basic design and principles, maintenance and repair guides of the Pierce TAK-4 Independent Front Suspension system now being manufactured from Pierce. Included in this course will be proper maintenance, testing and troubleshooting procedures used on the TAK 4 suspension system. The class will include lecture, demonstration, and hands-on instruction.

Instructor: Pierce Staff

FM-323  **Design & Performance Standards of Custom Fire Apparatus**  Wednesday—Friday  16 hours

With each passing year the design challenges of building a Custom Fire Apparatus for your department becomes more complex. The requirements of what each agency’s fire apparatus needs to do and how it must perform for their operations have made the designing of these apparatus much more demanding. This class will present to you the many different options and configurations available with regard to the most current fire apparatus designs. Additionally, this class will discuss many of the different dimensional requirements, cab & body designs, drivetrain & related components, pump & plumbing systems, foam systems, including the estimated expenses of these each accessory systems. Special emphasis will be placed on various body designs including compartmentation design/storage options, hose bed configuration & related options and ground ladder storage options. The latest Rescue Pumper and Wildland/Urban Interface designs will also be discussed in detail along with the new NFPA 1901 requirements recently enacted.

Instructor: Roy Cobb
CONTINUING EDUCATION CLASSES

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: Vic Abel & Sanford Fox

FM -332  **DIESEL EMISSIONS**  Thursday  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 Opfer

FM -336  **THIRD PARTY AERIAL INSPECTION**  Wednesday  8 hours
This course will review NFPA 1911, Chapter 10, Inspection and Maintenance of Aerial Devices section which defines the minimum requirements for establishing an inspection, maintenance, and testing program for in-service aerial fire apparatus. This course will help the student identify the systems and items on a fire apparatus that are to be inspected and maintained, the frequency of such inspections and maintenance and the requirements and procedures for conducting performance tests on components. Additionally this course will provide information on the requirements for an inspection, maintenance, and testing program that will ensure that in-service fire apparatus are serviced and maintained to keep them in safe operating condition.
Instructor: James Johannason
### 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 online should place “One Week Package” in their cart and wait to be prompted to select the individual courses.** The desired courses can also be requested on the Student Registration Form.

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<td>Alternative Fueled Vehicle Safety</td>
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<td>Steering &amp; Suspension</td>
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<td>Breathing Air Compressors</td>
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<td>Small Engine Service</td>
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<td>Fire Line Safety Awareness (Red Card)</td>
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<td>Aerial Service &amp; Maintenance</td>
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<td>Pierce Service &amp; Product Updates</td>
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<td>Design &amp; Performance Standards</td>
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</tbody>
</table>
## ACADEMY DETAILS

Sacramento International Airport is located approximately 18 miles from McClellan Park. 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.

The official host hotel for the 2015 academy is the Lions Gate Hotel located at McClellan Park—just a few blocks from where most (but not all) classes will be held. Make sure that you mention CFMA when making your reservation to insure you will receive the low conference rate. They are located at 3410 Westover Avenue, McClellan, CA 95652. For reservations, call (916) 643-6222. The Lions Gate offers deluxe accommodations including several two and three bedroom options, restaurant, bar, hot breakfast and outdoor swimming pool. There is an additional charge for roll-away beds.

The CFMA also has a special conference rate at the nearby Crowne Plaza hotel. The Crowne Plaza is located at 5321 Date Avenue, Sacramento which is 2.5 miles from the McClellan Conference Center. Reservations can be made by calling (916) 338-5800.

Distances from the host hotel to course locations:

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>McClellan Conference Center</td>
<td>one-half mile</td>
</tr>
</tbody>
</table>

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## ACADEMY SCHEDULE

Academy Week runs Sunday, April 2—Friday, April 7 with the following events:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>2:00 – 7:00 pm</td>
<td>Check In</td>
</tr>
<tr>
<td></td>
<td>5:30 – 6:30 pm</td>
<td>Opening Night Ceremony &amp; Hospitality</td>
</tr>
<tr>
<td>Monday</td>
<td>7:00 – 8:00 am</td>
<td>Late Check-In</td>
</tr>
<tr>
<td>Monday–Wednesday</td>
<td>8:00 am – 5:00 pm</td>
<td>Course Instruction</td>
</tr>
<tr>
<td></td>
<td>5:00–6:00 pm</td>
<td>Meet the Vendors Hospitality Events</td>
</tr>
<tr>
<td>Thursday</td>
<td>8:00 am—12:00 pm</td>
<td>Course Instruction*</td>
</tr>
<tr>
<td></td>
<td>12:00 – 5:00 pm</td>
<td>California Emergency Equipment Showcase</td>
</tr>
<tr>
<td></td>
<td>7:00 – 9:00 pm</td>
<td>CFMA BBQ &amp; Celebration</td>
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<tr>
<td></td>
<td></td>
<td>(see below)</td>
</tr>
<tr>
<td>Friday</td>
<td>8:00 am–12:00 pm</td>
<td>Course Instruction and Exams</td>
</tr>
<tr>
<td></td>
<td>12:00 pm–2:00 pm</td>
<td>EVTCC exams</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(pre-registration required thru EVTCC)</td>
</tr>
</tbody>
</table>

* certain certification courses will remain in class until 5:00 pm on Thursday
ACADEMY DETAILS

EXPLANATION OF FEES

Students may register for the entire week of classes for $540 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 $180 per day. State certification classes (all classes beginning with “CFM”), require an additional $80 state testing fee for the State Fire Marshals office. 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 May 15, 2017. General registration closes February 15, 2017. Registrations received after that date will be assessed an additional $50 per student for late registration fees.

SCHOLARSHIPS

The California Fire Mechanics Academy, Inc. Board of Directors is proud to offer their scholarship program designed to assist individuals with expenses related to attending the academy. These scholarships are available to anyone meeting the established criteria. Check the CFMA website or contact the office for further information and to obtain the application paperwork. The application deadline is January 1, 2017.

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 in by March 15, 2017. 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 fire mechanics. 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 EVT 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, April 7, 2017 at Noon.
STUDENT REGISTRATION FORM

Name: __________________________________________ ____________
First                                       MI                         Last

Address: __________________________________________
Street                                                             City

Telephone: __________________________
Cell                                                             Work

Fire Department/Agency: __________________________________________ SFT # or Last 4 SSN ____________

Course Selection

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>

Students registering individually may complete the form below and fax credit card registrations to CFMA at (916) 333-5014 or mail check registrations to CFMA, 3318 Howard Ave, Ste 140, McClellan, CA 95652.

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

Authorized Signature: ________________________________________________

Remit by fax to (916) 333-5014 or email to cfm.academy@gmail.com or by mail to:
CFMA 3318 Howard Avenue, Bldg. 338 Suite 140, McClellan, CA 95652

Receipts will be issued upon payment received.

Please note: Cancelation/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 10, 2017. Students or agency officials requesting cancellation and refund must do so in writing no later than February 28, 2017. 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. __________________________________________

<table>
<thead>
<tr>
<th># Students</th>
<th># Days</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Academy Registration Fee Weekly Rate</td>
<td>$540.00</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>Academy Registration Fee Daily Rate</td>
<td>$180.00</td>
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</tr>
<tr>
<td>3</td>
<td></td>
<td>State Certification Class Fee (All classes beginning with CFM)</td>
<td>$80.00</td>
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<tr>
<td>4</td>
<td></td>
<td>Late Registration Fee (received after 2/15/17) Per student</td>
<td>$50.00</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td>Welding Class Materials Fee</td>
<td>$50.00</td>
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</tr>
<tr>
<td>6</td>
<td></td>
<td>Additional BBQ Ticket * one ticket per student is included with registration</td>
<td>$40.00</td>
<td></td>
</tr>
</tbody>
</table>

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 fax to (916) 333-5014, or email to cfm.academy@gmail.com or by mail to:
CFMA 3318 Howard Avenue, Bldg. 338 Suite 140, McClellan, CA 95652
The CFMA Celebration is going Western with a BBQ and the Kenny Frye Band!

Thursday, April 6th 7–9 pm, Lions Gate Patio

Dinner included in Academy registration

Raffle prizes, awards & more