



2022 Fire Mechanics Fall Conference

F1: Inspection, Maintenance, & Testing of Fire Apparatus

Fox Valley Technical College

This workshop prepares the technician for the EVTCC F-1 exam and covers inspection, maintenance, and testing of fire apparatus. Topics covered include definitions and terms related to fire apparatus, general requirements for servicing fire apparatus, out-of-service criteria, inspection, diagnostic checks, and maintenance. You will also learn about road test and performance testing requirements.

F2: Design & Performance Standards

Fox Valley Technical College

This workshop prepares the technician for the EVTCC F-2 exam and to understand the design and performance standards for fire apparatus in NFPA 1901, Standards for Automotive Fire Apparatus, and the general principles of preventive maintenance and servicing. You will learn the terms and phrases commonly used in connection with the fire apparatus, apparatus operations and/or testing of apparatus. You will also learn about the test and delivery data requirements for a Pumper Fire Apparatus, identify fire apparatus maintenance problems according to IFSTA's Pumping Apparatus Driver/Operator Handbook and Identify Out of Service Criteria as listed in NFPA 1915 Standard for Fire Apparatus Preventive Maintenance Program.

F3: Fire Pumps & Accessories

Instructor: Steve Towers

This is an interactive class that addresses each of the EVT objectives for F-3. The class will cover fire pump theory, maintenance, rebuild and procedures for the three major pump manufacturers. We will spend a full day pump testing and troubleshooting pump performance issues. We'll also cover the additional testing requirements of NFPA 1911 (2017 edition) for brush truck and ultra-high-pressure pumps. Bring a good attitude and anticipate a great time turning wrenches with your fellow fire mechanics.

Suggested items to bring: coveralls, work boots, hearing protection, safety glasses, and if you are taking the F-3 exam, have a copy of NFPA 1911 2017 edition and other recommended study material.



F4: Electrical Systems

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This workshop prepares the technician for the EVTCC F-4 exam and covers basic electricity including electrical theory, battery theory, meters, wire and cables, alternators and cranking motors, advanced electricity, the application of the above theories plus troubleshooting of entire systems. The class covers the basic design and performance requirements of the fire apparatus electrical systems, components of electrical systems and preventive maintenance and troubleshooting activities. The technician will understand 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.

F5: Aerial Dynamics:

Instructor: Michael Young

Items covered in the 4 days of training will include:

- Vehicle Spec Writing
- Federal Annual Safety Inspections
- Daily Pre-Trip Inspections
- Periodic Safety and Visual Inspections of Aerial Apparatus
- Law, Regulations, & Standards
- Basic Hydraulics

Please Note: This is an EVTCC F-5 Prep Class. Attending this course does not guarantee the testing process. The primary focus of inspection and testing is inclusive of the NFPA 1901 and NFPA 1911, current editions. You should be in possession of these documents in class. Safety apparel is required during training ground exercises.

F6: Allison Transmissions

Instructor: Dan Cleveland

This is a two-day class covering the Allison transmissions found in fire trucks/emergency vehicles. Covered topics include:

- Reference Materials
- Transmission identification
- Torque converter theory, operation, and troubleshooting
- Clutches and clutch application
- Hydraulics Electronic controls and prognostics
- Output retarders
- Pump mode operation
- Preventive maintenance and operational procedures
- Driveline troubleshooting
- Data link operation and troubleshooting



F7: Fire Apparatus Foam Systems

Instructor: Keith Klassen

This class is a prep class for the EVT F7 Foam test. There will be both didactic classroom and hands on instruction. Topics covered will include:

1. Basic foam properties.
2. Foam proportioners ranging from foam eductors through electronic injection systems.
3. CAFS compressor systems
4. Foam and CAFS maintenance
5. Proportioner calibration
6. Compressor tuning
7. System troubleshooting
8. Annual NFPA proportioner and compressor testing

STIHL Saw

Instructor: JD Fernstrom

Each attendee should bring 4 – 5 STIHL products; cut-quick, chain saw, etc. that will be used during the training. The products can be new, used, broken, or running perfectly, the goal is to use the products you service on a regular basis to build familiarity with the product as well as the service and repair techniques that may be specific to the model. I also ask that you bring any basic tools you use in the shop as well as any spare parts you feel will be needed such as air filters, spark plugs, fuel filters, etc. STIHL NW will supply special tools, shop towels, and some lubricants. Lastly, please remove any fuel and bar oil as well as give a quick cleaning to keep our work area as clean as possible.

WSRB

Instructor: Robert Ferrell

This class will focus on the inspection and maintenance requirements set forth in WSRB's Protection Class Grading Schedule for fire department apparatus and equipment. Other topics that will be covered include who, what, why, when, and how of WSRB and the ratings that they produce.

Darley Pumps

Instructor: James Jones

TBA



Bendix Air Brakes and ABS

Instructor: Ed Bruser

This class will cover drum and disc adjustment and diagnostics as well as ABS and safety system. Class is 2 1/2 hours to 3 hours.

Battery Electric Vehicle

Fox Valley Technical College

This course covers safety requirements of working on heavy duty electric vehicles. Recognize and understand the various high voltage components present in today's heavy duty electric vehicles. Understand the degree of protection requirements for safely working on electric vehicles, high voltage interlock systems and its operation, basic electrical isolation requirements on electric vehicles and isolation fault detection systems. Testing isolation resistance in electric vehicle components using high voltage multimeters.

Welding

Central Welding Supply

TBA

Cummins Insite

Rachel Young

TBA

Cummins DPF/SCR

Rachel Young

TBA